TECHNICAL SPECIFICATIONS

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 PROJECT INFORMATION

1.2 WORK RESTRICTIONS FOR DEVELOPERS, CONTRACTORS AND SUB-CONTRACTORS

A. Contractor's Use of Premises: During construction, Contractor and Developer will have full use of site under construction.

1. Developer, General Contractor and Sub-Contractors will perform construction only during normal working hours, **AS PROVIDED IN THE GENERAL CONDITIONS**. Outside work areas will be cleaned up daily and return to reasonable condition at the end of each work period.
2. Limits: Site disturbance is limited to the boundaries as established and marked by the current Land Survey for the property.
3. Subparagraph below is an example of a special requirement appropriate to many projects. Revise to suit Project or delete.

B. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

C. NSP and their Representatives, reserves the right of entry at any time, for Site inspections and general Quality Control inspections.

END OF SECTION 011000

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 ALLOWANCES

A. No Allowances permitted by the Neighborhood Stabilization Program.

1.2 ALTERNATES

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the Base Bid amount if Developer and NSP Project Manager decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 SUBSTITUTION PROCEDURES

A. Substitutions include changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor after award of the Contract.

1. Substitution Request Form: Use the NSP Standard Substitution Request Form.
2. Submit requests within 10 days from receiving the Bid Award Notice.
3. Do not submit unapproved substitutions on Shop Drawings or other submittals.
4. Identify product to be replaced and show compliance with requirements for substitutions. Include a detailed comparison of significant qualities of proposed substitution with those of the Work specified, a list of changes needed to other parts of the Work required to accommodate proposed substitution, and any proposed changes in the Contract Sum or the Contract Time should the substitution be accepted.
5. NSP will review the proposed substitution and notify Contractor of its acceptance or rejection.
6. **SEE ALSO GENERAL CONDITONS FOR FURTHER REQUIREMENTS**

1.4 CONTRACT MODIFICATION PROCEDURES

A. NSP Project Manager will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

B. Developer-Initiated Proposal Requests: Developer will issue a detailed description of proposed changes in the Work.

1. Proposal Requests are not instructions either to stop work in progress or to execute the proposed change.
2. Within five (5) days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time.

C. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to the Developer and NSP Project Manager.

D. On NSP Project Manager and Developer approval of a Proposal Request, the General Contractor will issue a Change Order for signatures of the NSP Project Manager, the Developer and Contractor, for all changes to the Contract Sum or the Contract Time.

E. NSP Project Manager may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

F. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.5 PAYMENT PROCEDURES

A. Submit a Schedule of Values at least ten (10) days before the initial Application for Payment. Coordinate the schedule of values with Contractor's construction schedule.

1. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
2. Provide separate line items in the schedule of values for initial cost of materials and for total installed value of that part of the Work.

B. Application for Payment Forms: Use **NSP Payment Application** as form for Applications for Payment.

C. Submit three (3) copies of each application for payment according to the schedule established in Owner/Contractor Agreement.

1. With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
2. Submit final Application for Payment with final waivers from every entity involved with performance of the Work covered by the application whom is lawfully entitled to a lien.

a. Include insurance certificates, proof that taxes, fees, and similar obligations were paid, and evidence that claims have been settled.
b. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

END OF SECTION 012000

SECTION 013000 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 PROJECT MANAGEMENT AND COORDINATION

A. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

B. Requests for Information (RFIs): On discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI. Use the **NSP Request for Information Form**.

C. Schedule and conduct progress meetings at Project site at weekly intervals. Notify Developer and NSP Construction Manager of meeting dates and times at least forty-eight (48) hours prior to scheduled meeting. Require attendance of each subcontractor or other entity concerned with current progress or involved in planning, coordination, or performance of future activities.

1. General Contractor will record minutes and distribute to everyone concerned, including Developer and NSP Construction Manager.

1.2 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

1. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
2. Submit two (2) copies of each action submittal. Developer will coordinate with NSP Construction Manager and return one (1) copy.
3. Submit two (1) copy of each informational submittal. Architect will not return copies.
4. Developer and NSP Construction Manager will discard submittals received from sources other than the General Contractor.

B. Place a permanent label or title block on each submittal for identification. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Developer and NSP Project Manager. Include the following information on the label:

1. Project name.
2. Date.
3. Name and address of Contractor.
4. Name and address of subcontractor or supplier.
5. Number and title of appropriate Specification Section.

C. Identify deviations from the Contract Documents on submittals.

D. Contractor's Construction Schedule Submittal Procedure: Submit two (2) copies of schedule within five (5) days after date established for Commencement of the Work.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Mark each copy to show applicable products and options. Include the following:

1. Manufacturer's written recommendations, product specifications, and installation instructions.
2. Printed performance curves and operational range diagrams.
3. Testing by recognized testing agency.
4. Compliance with specified standards and requirements.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Submit on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches. Include the following:

1. Dimensions and identification of products.
2. Fabrication and installation drawings and roughing-in and setting diagrams.
3. Wiring diagrams showing field-installed wiring.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.

C. Samples: Submit Samples for review of kind, color, pattern, and texture and for a comparison of these characteristics between submittal and actual component as delivered and installed. Include name of manufacturer and product name on label.

1. If variation is inherent in material or product, submit at least three (3) sets of paired units that show variations.

2.2 INFORMATIONAL SUBMITTALS

A. Qualification Data: Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

2.3 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to the Developer.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit two (2) copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type schedule within five (5) days after date established for Commencement of the Work.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

PART 3 - EXECUTION

3.1 SUBMITTAL REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions.

B. NSP Construction Manager in coordination with the Developer will review each action submittal, make marks to indicate corrections or modifications required, will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

3.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule forty-eight (48) hours before each regularly scheduled progress meeting.

1. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribute copies of approved schedule to Developer, NSP Construction Manager, subcontractors, testing and inspecting agencies, and parties identified by Contractor with a need-to-know schedule responsibility. When revisions are made, distribute updated schedules to the same parties.

END OF SECTION 013000

NEIGHBORHOOD STABILIZATION PROGRAM

REQUEST FOR INFORMATION

Request # _____ Request date: _____

Project Address_____

To: _____

Reason for Request:	Probable Effect:	Action Requested:
Insufficient Information	Increase Cost	Clarification
Engineering Conflict	Decrease Cost	Direction
Alternate Proposal	No Cost Change	Approval
	Increase Time	
	Decrease Time	
	No Time Impact	

Reference: Drawing No. _____ Detail No._____ Spec Section _____ .

Recommendation:

Response:

Proceed with recommendation Proceed with the following instructions:

_____

_____

_____

_____

_____

_____

_____

_____

Billing to be: Unit Price Cost Plus Lump Sum N/A

A formal Change Order is requested before proceeding.

Developer signature:_____date _____

NSP Construction Manager Signature:_____date _____

NSP Project Manager Signature:_____ date _____

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Testing and inspecting services shall be performed by independent testing agencies.

B. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to NSP Construction Manager for a decision.

C. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum. The actual installation may exceed the minimum within reasonable limits. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to NSP Construction Manager for a decision.

D. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
6. Names of individuals making tests and inspections.
7. Description of the Work and test and inspection method.
8. Complete test or inspection data, test and inspection results, an interpretation of test results, and comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
9. Name and signature of laboratory inspector.
10. Recommendations on retesting and re-inspecting.

E. Permits, Licenses, and Certificates: For THE PROGRAMS RECORDS, submit copies of permits, licenses, certifications, inspection reports, notices, receipts for fee payments, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

F. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and where required by authorities having jurisdiction, that is acceptable to authorities.

G. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

H. Testing Agency Responsibilities: Cooperate with NSP Construction Manager and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Promptly notify NSP Construction Manager and Contractor of irregularities or deficiencies in the Work observed during performance of its services.
2. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
3. Do not perform any duties of Contractor.

I. Associated Services: Cooperate with testing agencies and provide reasonable auxiliary services as requested. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Security and protection for samples and for testing and inspecting equipment.

J. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

K. Special Tests and Inspections: Engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

B. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute

AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems (See APA - The Engineered Wood Association)
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International (American Society of Mechanical Engineers International)
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	Association of the Wall and Ceiling Industry
AWCMA	American Window Covering Manufacturers Association

	(Now WCMA)
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association (Formerly: American Wood Preservers' Association)
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI, Inc.
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
BWF	Badminton World Federation (Formerly: IBF - International Badminton Federation)
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CEA	Consumer Electronics Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CRRC	Cool Roof Rating Council
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association

CRI	Carpet and Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association (Electrostatic Discharge Association)
ETL SEMCO	Intertek ETL SEMCO (Formerly: ITS - Intertek Testing Service NA)
FIBA	Federation Internationale de Basketball (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FM Approvals	FM Approvals LLC
FM Global	FM Global (Formerly: FMG - FM Global)
FMRC	Factory Mutual Research (Now FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association

FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Part of GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation (Now BWF)
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization Available from ANSI

ISSFA	International Solid Surface Fabricators Association
ITS	Intertek Testing Service NA (Now ETL SEMCO)
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association

NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)
NOMMA	National Ornamental & Miscellaneous Metals Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Now ITS)
PCI	Precast/Prestressed Concrete Institute

PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry

SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc. (Now TCNA)
TCNA	Tile Council of North America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California

(Now WI)

WMMPA Wood Moulding & Millwork Producers Association

WSRCA Western States Roofing Contractors Association

WWPA Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Use Charges: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated.

B. Water and Electric Power: Available from Owner's existing system without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Erosion- and Sedimentation-Control Plan: Submit plan showing compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent. **For additional requirements see NSP Green Building Practices Hand Book, Section 1.1 – Erosion Control Measures.**

D. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

E. Accessible Temporary Egress: Comply with construction standard practice and emergency access requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 11 gauge 0.120-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts and top and bottom rails.

B. Wood Enclosure Fence: Plywood, 6 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.

2.2 TEMPORARY FACILITIES

A. If necessary provide storage and fabrication sheds, and other support facilities as necessary for construction operations. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Developer authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
3. Permanent HVAC System: If Developer authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Developer, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sanitary Facilities: Provide temporary toilets and wash facilities. Comply with local building regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

C. Heating and Cooling: Provide temporary heating and cooling required for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

D. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

3.2 SUPPORT FACILITIES INSTALLATION

A. Install project identification and other signs in locations approved by the Developer to inform the public and persons seeking entrance to Project.

B. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations, from approved venders on the NSP list. Comply with requirements of authorities having jurisdiction.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways.

C. IF NECESSARY, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.

F. Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration.

3.4 MOISTURE AND MOLD CONTROL

A. Before installation of weather barriers, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

B. After installation of weather barriers but before full enclosure and conditioning of building, protect as follows:

1. Do not load or install drywall or porous materials into partially enclosed building.
2. Discard water-damaged and wet material and material that begins to grow mold.
3. Allow installed wet materials adequate time to dry before being enclosed.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Comparable Product Requests:

1. Submit request for consideration of each comparable product. Do not submit unapproved products on Shop Drawings or other submittals.
2. Identify product to be replaced and show compliance with requirements for comparable product requests. Include a detailed comparison of significant qualities of proposed substitution with those of the Work specified.
3. Developer and NSP Construction Manager will review the proposed product and notify Contractor of its acceptance or rejection.
4. **See GENERAL CONDITIONS for further requirements**

C. Basis-of-Design Product Specification Submittal: Show compliance with requirements.

D. Compatibility of Options: If Developer/Contractor is given option of selecting between two or more products, select product compatible with products previously selected in this Technical Specification Manual.

E. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Deliver products to Project site in manufacturer's original sealed container or packaging, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
3. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
4. Store materials in a manner that will not endanger Project structure.
5. Store materials in a manner that will not create a nuisance to neighbors.
6. Store products that are subject to damage by the elements, under cover in a weather-tight enclosure above ground, with ventilation adequate to prevent condensation.

F. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.

1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
2. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Where Specifications name a single manufacturer and product, provide the named product that complies with requirements.
2. Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
4. Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements for "comparable product requests" for consideration of an unnamed product.
5. Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
6. Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements for "comparable product requests" for consideration of an unnamed manufacturer's product.
7. Where Specifications name a single product, or refer to a product indicated on Drawings, as the "basis-of-design," provide the named product. Comply with provisions for "comparable product requests" for consideration of an unnamed product by another manufacturer.

C. Where Specifications require "match specified sample," provide a product that complies with requirements and matches specified sample. NSP Construction Manager’s decision will be final on whether a proposed product matches.

D. Unless otherwise indicated, Developer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 CLOSEOUT SUBMITTALS

A. Record Drawings: Maintain a set of prints of the Contract Drawings as Record Drawings. Mark to show actual installation where installation varies from that shown originally, referred to as AS-BUILTS.

1. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

B. Operation and Maintenance Data: Submit one copy of manual. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:

1. Manufacturer's operation and maintenance documentation.
2. Maintenance and service schedules.
3. Maintenance service contracts.
4. Emergency instructions.
5. Spare parts list.
6. Wiring diagrams.
7. Copies of warranties.

1.2 CLOSEOUT PROCEDURES

A. Substantial Completion: Before requesting Substantial Completion inspection, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, maintenance service agreements, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Submit record Drawings, operation and maintenance manuals, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items.
7. Make final changeover of permanent locks and deliver keys to Developer.
8. Complete startup testing of systems.
9. Remove temporary facilities and controls.
10. Submit changeover information related to occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit a written request for inspection for Substantial Completion. On receipt of request, Developer and NSP Construction Manager will proceed with inspection or advise Contractor of unfulfilled requirements. NSP Construction Manager will prepare the Certificate of Substantial Completion after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

C. Request inspection for Final Completion, once the following are complete:

1. Submit a copy of Substantial Completion inspection punch list stating that each item has been completed or otherwise resolved for acceptance.
2. Instruct Developer's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

D. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

E. Submit a written request for final inspection for acceptance. On receipt of request, Developer and NSP Construction Manager will proceed with inspection or advise Contractor of unfulfilled requirements. NSP Construction Manager will prepare final Certificate for Payment after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

PART 2 - EXECUTION

2.1 EXAMINATION AND PREPARATION

A. Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates.
2. Examine roughing-in for mechanical and electrical systems.
3. Examine walls, floors, and roofs for suitable conditions.

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

C. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.

D. Verify space requirements and dimensions of items shown diagrammatically on Drawings.

2.2 CONSTRUCTION LAYOUT AND FIELD ENGINEERING

A. Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks.

B. Engage a land surveyor to lay out the Work using accepted surveying practices.

C. Engage a land surveyor or professional engineer to prepare a final property survey showing significant features (real property) for Project.

1. At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

2.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level.

1. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections to form hairline joints.
2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
3. Maintain minimum headroom clearance of **96 inches** in occupied spaces and **90 inches** in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations.

C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

D. Use products, cleaners, and installation materials that are not considered hazardous.

E. Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.

2.4 CUTTING AND PATCHING

A. Provide temporary support of work to be cut. Do not cut structural members without prior written approval of a licensed structural engineer.

B. Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

C. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing.
2. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

2.5 CLEANING

A. Clean Project site and work areas daily, including common areas. Dispose of materials lawfully.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
3. Remove debris from concealed spaces before enclosing the space.

B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent.
2. Clean transparent materials, including mirrors. Remove excess glazing compounds. Replace chipped or broken glass.
3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.
4. Vacuum carpeted surfaces and wax resilient flooring.
5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.
6. Clean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

2.6 DEMONSTRATION AND TRAINING

A. Engage qualified instructors to instruct Developer's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Include a detailed review of the following:

1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

END OF SECTION 017000

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Performance Requirements: Achieve end-of-Project rates for salvage/recycling of **five** (**5**) **percent** by weight of total nonhazardous solid waste generated by the Work.

1.2 SUBMITTALS

A. Waste Management Plan: Submit plan within **ten** (**10**) **days** of date established for commencement of the Work.

B. Records of Donations and Sales: Receipts for salvageable waste donated or sold to individuals and organizations. Indicate whether organization is tax exempt.

C. Recycling and Processing Facility Records: Manifests, weight tickets, receipts, and invoices.

D. Landfill and Incinerator Disposal Records: Manifests, weight tickets, receipts, and invoices.

E. Waste Management Plan: Develop a waste management plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

1. Salvaged Materials for Reuse: Identify materials that will be salvaged and reused.
2. Salvaged Materials for Sale: Identify materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: Identify materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

C. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work: Clean salvaged items and install salvaged items to comply with installation requirements for new materials and equipment.

B. Salvaged Items for Sale or Donation: Not permitted on Project site.

C. Salvaged Items for Owner's Use: Clean salvaged items and store in a secure area until delivery to Owner.

D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

E. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs.

F. Plumbing Fixtures: Separate by type and size.

G. Lighting Fixtures: Separate lamps by type and protect from breakage.

3.3 RECYCLING WASTE

A. General: Recycle paper and beverage containers used by on-site workers.

B. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

C. Site-Clearing Wastes: Chip brush, branches, and trees at landfill facility.

D. Asphaltic Concrete Paving: Grind asphalt to maximum **1-1/2-inch** size.

E. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

F. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum **4-inch** size.

G. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Pulverize masonry to maximum **1-1/2-inch** size.
2. Clean and stack undamaged, whole masonry units on wood pallets.

H. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

I. Metals: Separate metals by type.

J. Asphalt Shingle Roofing: Remove and dispose of nails, staples, and accessories.

K. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

L. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

M. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.

N. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

O. Conduit: Reduce conduit to straight lengths and store by type and size.

3.4 DISPOSAL OF WASTE

A. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

B. Do not burn waste materials.

END OF SECTION 017419

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Items indicated to be removed and salvaged remain Developer's property. Carefully detach from existing construction, in a manner to prevent damage, and deliver to Developer ready for reuse if requested. Include fasteners or brackets needed for reattachment elsewhere.

B. Contractor shall provide the required equipment and labor for the demolition and removal of the following items: Damaged roofing, drywall, flooring, framing, heating/cooling equipment, plumbing, cabinets, electrical and site work.

C. Comply with EPA regulations and hauling and disposal regulations of authorities having jurisdiction. Comply with ANSI A10.6 and NFPA 241.

D. Debris and rubbish will not be allowed to accumulate on the site and will be disposed of in a legal dump site. Site appearance, prior to occupancy, will be conducive to good living conditions.

E. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces. Submit before Work begins.

F. It is not expected that hazardous materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify NSP Construction Manager and Developer. Hazardous materials will be removed by Developer under a separate contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 DEMOLITION

A. Requirements for Building Reuse:

1. Maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
2. Maintain existing interior non-structural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.

B. Maintain services/systems indicated to remain and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building.

C. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

D. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

E. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

F. Provide temporary weather protection to prevent water leakage and damage to structure and interior areas.

G. Protect walls, ceilings, floors, and other existing finish work that are to remain. Erect and maintain dustproof partitions. Cover and protect furniture, furnishings, and equipment that have not been removed.

H. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.

I. Promptly remove demolition waste materials from Project site and legally dispose of them. Do not burn demolished materials.

J. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before demolition operations began.

END OF SECTION 024119

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. See Division 05 Section "Metal Fabrications" for furnishing steel lintels and shelf angles for unit masonry.

B. Comply with ACI 530.1/ASCE 6/TMS 602.

C. If required, point up existing brick walls, piers or underpinning and caulk cracks, expansion joints and where masonry abuts other material. If the mortar has hardened, defects shall be chiseled out, wetted and re-filled solidly with fresh mortar and tooled as specified. Joints shall be struck to match existing joint finish. All adjacent masonry units shall be cleaned of mortar.

D. Remove and replace foundation piers as determined by a licensed structural engineer. Piers shall be plumb, level, and properly spaced according to the local and state building codes. If a permit has been obtained, a City of Jacksonville inspection is required.

E. Foundation Pier Repair – All loose mortar and broken brick shall be removed from the pier. Broken pieces of the pier shall be replaced and mortared into place. All open joints shall be tuck-pointed with mortar mix to an even surface. All excess mortar shall be cleared from the face of the pier. Work is to be accomplished in accordance with standard trade practices and the local building codes.

PART 2 - PRODUCTS

2.1 MASONRY UNITS

A. Concrete Masonry Units: ASTM C 90; Density Classification, Lightweight Weight or Normal Weight.

1. Integral Water Repellent: ACM Chemistries; RainBloc, BASF Aktiengesellschaft; Rheopel Plus or Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block.
2. Special shapes for lintels, corners, jambs, sash, control joints, and other special conditions.
3. Square-edged units for outside corners unless otherwise indicated.

B. Decorative Concrete Masonry Units: ASTM C 90; Density Classification, Lightweight Normal Weight.

1. Decorative Concrete Masonry Units shall not be utilized on the exterior face of the home.
2. Finish: Exposed faces with ground, split-face, or split-ribbed finish.
3. Integral Water Repellent: ACM Chemistries; RainBloc [BASF Aktiengesellschaft; Rheopel Plus or Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block.

4. Special shapes for lintels, corners, jambs, sash, control joints, and other special conditions.

C. Concrete Facing Brick: ASTM C 1634; Density Classification, Lightweight or Normal Weight.

1. Finish: Exposed faces with ground or split-face finish.
2. Integral Water Repellent: ACM Chemistries; RainBloc BASF Aktiengesellschaft; Rheopel Plus or Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block.

D. Concrete Lintels: Precast units matching concrete masonry units and with reinforcing bars indicated or required to support loads indicated.

E. Face Brick: ASTM C 216 or ASTM C 652, Class H40V, Grade MW, Type FBX or Type FBA.

1. Solid brick with exposed surfaces finished for ends of sills and caps.
2. Special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

F. Building (Common) Brick: ASTM C 62, Grade MW and\or to match existing.

G. Hollow Brick: ASTM C 652, Grade MW and\or to match existing, Class H40V, Type HBS or Type HBA.

1. Special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
2. Solid brick with exposed surfaces finished for ends of sills and caps.

H. Firebox Brick: ASTM C 1261, size required to produce lining thickness indicated.

I. Clay Flue Lining Units: ASTM C 315.

2.2 MORTAR AND GROUT

A. Mortar: ASTM C 270, proportion specification.

1. Use Portland cement-lime or masonry cement mortar.
2. Do not use calcium chloride in mortar.
3. For masonry below grade or in contact with earth, use Type M..
4. For reinforced masonry, use Type S.
5. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions, and for other applications where another type is not indicated, use Type N.
6. Water-Repellent Additive: For mortar used with concrete masonry units made with integral water repellent, use product recommended by manufacturer of units.

B. Grout: ASTM C 476 with a slump of 8 to 11 inches.

C. Refractory Mortar: Ground fireclay mortar or other refractory mortar that passes ASTM C 199 test and is acceptable to authorities having jurisdiction.

2.3 REINFORCEMENT, TIES, AND ANCHORS

A. Steel Reinforcing Bars: ASTM A 615/A 615M, Grade 60.

B. Joint Reinforcement: ASTM A 951.

1. Coating: Hot-dip galvanized at exterior walls.
2. Wire Size for Side Rods: 0.148-inch diameter.
3. Wire Size for Cross Rods: 0.148-inch diameter.
4. Wire Size for Veneer Ties: 0.148-inch diameter.
5. For single-wythe masonry, provide either ladder design or truss design.

C. Corrugated-Metal Veneer Anchors: 7/8 inch wide and made from 0.030-inch or 0.060-inch thick steel sheet, galvanized after fabrication.

D. Veneer Anchors: Hot-dip galvanized steel, two-piece adjustable masonry veneer anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to studs, and acceptable to authorities having jurisdiction.

2.4 EMBEDDED FLASHING MATERIALS

A. Sheet Metal Flashing: Stainless steel, minimum 0.0156 inch thick or Copper, 10-oz./sq. ft. weight or 0.0135 inch thick for fully concealed flashing.

B. Laminated Flashing: Copper sheet 3 oz./sq. ft. minimum, bonded with asphalt between two layers of glass-fiber cloth. Use only where flashing is fully concealed.

C. Rubberized Asphalt Sheet Flashing: Pliable, adhesive rubberized-asphalt compound, bonded to a polyethylene film to produce an overall thickness of 0.030 inch. Use only where flashing is fully concealed.

D. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy, minimum 0.025 inch thick, with a 0.015-inch thick coating of adhesive. Use only where flashing is fully concealed.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded strips complying with ASTM D 1056, Grade 2A1.

B. Preformed Control-Joint Gaskets: Designed to fit standard sash block and to maintain lateral stability in masonry wall; made from styrene-butadiene rubber or PVC.

C. Weep Holes: Cellular-plastic extrusion, full height and width of head joint or Round polyethylene tubing, 3/8-inch OD in diameter, 24 inches long. Free-draining polyethylene mesh, full height and width of head joint.

D. Cavity Drainage Material: Free-draining polymer mesh, full depth of cavity with dovetail shaped notches that prevent mortar clogging.

E. Loose-Granular Perlite Insulation: ASTM C 549, Type II or IV.

F. Molded-Polystyrene Insulation Units: ASTM C 578, Type I; specially shaped units designed for installing in cores of masonry units.

G. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV or X.

H. Polyisocyanurate Board Insulation: ASTM C 1289, Type I, Class 2; aluminum-foil faced.

I. Proprietary Acidic Masonry Cleaner: Product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cut masonry units with saw. Install with cut surfaces and, where possible, cut edges concealed.

B. Mix units for exposed unit masonry from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

C. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

D. Stopping and Resuming Work: Rack back units; do not tooth.

E. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

F. Build non-load-bearing interior partitions full height and install compressible filler in joint between top of partition and underside of structure above.

G. Tool exposed joints slightly concave when thumbprint hard unless otherwise indicated.

H. Keep cavities clean of mortar droppings and other materials during construction.

I. Set firebox brick in full bed of refractory mortar with full head joints. Make joints approximately 1/8 inch wide and tool smooth.

J. Set clay flue liners in full beds of refractory mortar to comply with ASTM C 1283.

3.2 LINTELS

A. Install lintels where indicated.

B. Minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.3 FLASHING AND WEEP HOLES

A. Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.

B. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing before covering with mortar.

1. Extend flashing 4 inches into masonry at each end and turn up 2 inches to form a pan.

C. Trim wicking material used in weep holes flush with outside face of wall after mortar has set.

3.4 PARGING

A. Parge masonry walls, where indicated, in two uniform coats with a steel-trowel finish. Form a wash at top of parging and a cove at bottom. Damp cure parging for at least 24 hours.

3.5 CLEANING

A. Clean masonry as work progresses. Remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly cured, clean exposed masonry.

1. Wet wall surfaces with water before applying acidic cleaner, then remove cleaner promptly by rinsing thoroughly with clear water.
2. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION 042000

SECTION 042300 - GLASS UNIT MASONRY

PART 1 - PRODUCTS

1.1 GLASS BLOCK

A. Hollow Glass Block: Units made from transparent glass, with manufacturer's standard edge coating.

1. Glass Color: Clear
2. Pattern: Smooth, undistorted faces, Wavy design on inner faces, and smooth outer faces, Fluted design, horizontal on one inner face, vertical on other; and smooth outer faces, Linear prismatic design, horizontal on one inner face, vertical on other; and smooth outer faces, Prismatic pyramid design on inner faces, and smooth outer faces or as selected.
3. Edge-Coating Color: As selected.
4. Unit Sizes: Manufacturer's standard sizes corresponding to nominal sizes indicated on Drawings.
5. Unit Thickness: 3-1/8 inches or 3-7/8 inches as needed for opening.

1.2 GLASS-BLOCK GRID SYSTEMS

A. Aluminum Grid System and Frame: ASTM B 221, Alloy 6063-T6 or 6463-T6.

1. Finish: Baked enamel, Powder-coated, Dark bronze anodized, or Clear anodized.

B. Window and Wall System: T-bar grid with tubular frame and vinyl glass-block boots.

C. Skylight System: T-bar grid with tubular frame; vinyl thermal break; extruded-aluminum, curb-mounting frame and counter flashing; and vinyl glass-block boots.

D. Sealant: Product recommended by glass-block grid system manufacturer.

1.3 GLASS UNIT MASONRY ACCESSORIES

A. Panel Reinforcement: Ladder-type units, butt welded, made from hot-dip galvanized wire or made from stainless-steel wire.

B. Panel Anchors: Glass-block manufacturer's standard perforated steel strips, hot-dip galvanized after fabrication.

C. Asphalt Emulsion: ASTM D 1187 or ASTM D 1227.

D. Expansion Strips: Glass-fiber or Polyethylene-foam type complying with requirements of glass-block manufacturer.

E. Sealants: Comply with Division 07 Section "Joint Sealants."

1.4 MORTAR

A. Mortar for Glass Unit Masonry: ASTM C 270, Type S.

1. Use Portland cement-lime or masonry cement mortar.

B. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required.

PART 2 - EXECUTION

2.1 INSTALLING GLASS BLOCK WITH MORTAR

A. Apply a heavy coat of asphalt emulsion to sill and adhere expansion strips to jambs and heads with asphalt emulsion. Allow asphalt emulsion to dry before placing mortar.

B. Completely fill bed and head joints.

C. Install panel reinforcement in horizontal joints of every other course, continuously from end to end of panels.

D. Install panel anchors in same horizontal joints where panel reinforcement occurs.

E. Rake out and point joints with sealant at both faces of exterior panels.

2.2 GLASS-BLOCK GRID SYSTEM INSTALLATION

A. Installing Window and Wall Systems: Assemble grid system, apply continuous sealant bead to back of window Z-bar, and fasten in position, level and plumb.

B. Installing Skylight Systems: Assemble grid system, apply continuous sealant bead to top of supporting curb, and fasten in position.

C. Insert glass blocks into vinyl glass-block boots and carefully insert into grid from exterior side. Install blocks firmly against T-bars without deforming boots.

D. Fill channels around glass blocks with sealant and tool flush.

END OF SECTION 042300

SECTION 055200 - METAL RAILINGS

PART 1 - PRODUCTS

1.1 RESIDENTIAL RAILING SYSTEMS

A. Provide railings capable of withstanding a uniform load of **50 lbf/ ft.** and a concentrated load of **200 lbf** applied to handrails and top rails of guards in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

B. Provide railing infill capable of withstanding a concentrated load of **50 lbf** applied horizontally on an area of **1 sq. ft**. Infill load and other railing loads need not be assumed to act concurrently.

C. The height of guardrails shall be forty-two (42”) inches from the floor and comply with the Florida Building Code.

D. All porches and landings that are thirty (30”) inches from the ground level and higher are to have handrails – or as required by the Florida Building Code.

E. Install a handrail at all steps. Metal or wood can be used so longs as it meets the Florida Building Code.

F. The handrail on steps shall not be less than thirty (30”) inches or more than thirty-six (36”) inches above the surface of the ramp or steps; or as required in the Florida Building Code.

G. Balusters shall be spaced as required in the Florida Building code.

1.2 METALS

A. Aluminum Extruded Bars and Tubing: ASTM B 221 (ASTM B 221M), Alloy 6063-T5/T52.

B. Aluminum Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Steel Pipe: ASTM A 53, Schedule 40.

E. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513.

F. Iron Castings: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.

G. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

1.3 OTHER MATERIALS

A. Wood Rails: Hardwood or Softwood rails in a profile approved by the Developer and NSP Construction Manager with manufacturer's standard transparent finish or opaque finish, and secured to recessed or exposed metal sub-rail.

1.4 FABRICATION

A. Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.

B. Form changes in direction of railing members by mitering at elbow bends or use of prefabricated fittings.

C. Fabricate railing systems and handrails for connecting members by welding, brazing, or with concealed mechanical fasteners and fittings.

D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.

E. Provide wall returns at ends of wall-mounted handrails.

1.5 FINISHES

A. Aluminum Railings: Baked enamel or Powder Coated.

B. Steel Railings: Hot-dip galvanized after fabrication, ASTM A 123; cleaned and shop primed after galvanizing.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Fit exposed connections accurately together to form tight, hairline joints.

B. Set railings accurately in location, alignment, and elevation and free of rack.

C. Coat concealed surfaces of aluminum that will be in contact with cementious materials or dissimilar metals, with a heavy coat of bituminous paint.

D. Anchor posts in concrete by forming or core-drilling holes 5 inches deep and 3/4 inch greater than OD of post. Fill annular space between post and concrete with non-shrink, nonmetallic grout.

E. Attach handrails to wall with wall brackets.

END OF SECTION 055200

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Replace all deteriorated wall framing, subject to an open wall inspection by the NSP construction Manager and/or the City of Jacksonville Inspector, including studs, sole plate, top plate, and bracing. All work shall be done in accordance with the following specifications and the local and state building codes.

B. Repair and Replace the existing woods columns as needed. Match the existing columns as closely as possible. Include the repair of the column bases and captions as well. Include all hardware and brackets necessary to complete the work. All work shall be done in accordance with the following specifications and the local and state building codes.

C. Repair and replace any missing, broken, damaged or deteriorated material pertaining to the porch and landings.

D. Repair and replace existing porch/entry steps as needed. Construct a minimum thirty-six (36") inch wide steps to the porch area to match existing materials. The bottom of the stringers will be placed on a minimum of a 4" x 8" x 16" cap block to prevent the stringers from coming into contact with the ground. All risers and treads shall be the same height and size throughout the same run. ALL MATERIAL SHALL BE EXTERIOR GRADE, TREATED LUMBER.

E. Any interior floor must not exceed a 1% slope. If an excessive slope is encountered, the Developer must take the necessary steps to correct, including but not limited to engaging a structural engineer.

F. Floor and Ceiling Joists – Replace and install all deteriorated or damaged floor/ceiling joists in accordance with the local and state building code. ALL WORK SHALL BE PERMITTED through the City of Jacksonville. The size of the joists shall be determined by a structural engineer.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA C2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPA C31 with inorganic boron (SBX).

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for all rough carpentry unless otherwise indicated.

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPA C20.

1. Use Exterior type for exterior locations.
2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant treated materials for all rough carpentry.

2.3 LUMBER

A. Dimension Lumber:

1. Maximum Moisture Content: 19 percent for 2-inch nominal thickness or less, no limit for more than 2-inch nominal thickness.
2. Non-Load-Bearing Interior Partitions: Standard, Stud, or No. 3
3. Framing Other Than Non-Load-Bearing Interior Partitions: Construction or No. 2
4. Retain subparagraph below for better appearance for exposed work.
5. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

   a. Species: As specified for framing other than non-load-bearing interior partitions.
   b. Grade: Select Structural or No. 1

B. Timbers 5-Inch Nominal Size and Thicker: Select Structural, No. 1 or Douglas fir.

1. Maximum Moisture Content: 23 percent.

C. Exposed Boards: Mixed southern pine, No. 1 with 19 percent maximum moisture content.

D. Concealed Boards: Eastern softwoods, No. 3 Common: NELMA or Mixed southern pine, No. 2: SPIB; with 19 percent maximum moisture content.

E. Miscellaneous Lumber: Standard, Stud, or No. 3 grade with 19 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 ENGINEERED WOOD PRODUCTS

A. Engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

B. Laminated-Veneer Lumber: Manufactured with exterior-type adhesive complying with ASTM D 2559. Allowable design values determined according to ASTM D 5456.

1. Extreme Fiber Stress in Bending, Edgewise: Minimum of 2600 psi for 12-inch nominal depth members.
2. Modulus of Elasticity, Edgewise: Minimum of 1,800,000 psi

C. Wood I-Joists: Prefabricated units, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Provide units complying with material requirements of and with structural capacities established and monitored according to ASTM D 5055.

1. Web Material: Either oriented strand board or plywood, Exposure 1.
2. Structural Properties: Provide units with depths and design values not less than those indicated.
3. Provide units complying with APA PRI-400, factory marked with nominal joist depth, joist class, span ratings, mill identification, and compliance with APA standard.

D. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research/evaluation report for I-joists.

1. Material: glued-laminated wood or product made from any combination solid lumber, wood strands, and veneers.
2. Thickness: Minimum of 1-1/8 inches.

2.5 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: Plywood, Exterior, AC, Exterior or C-C Plugged, fire-retardant treated, not less than 1/2-inch nominal thickness.

2.6 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or of Type 304 stainless steel.

1. Power-Driven Fasteners: CABO NER-272.

2. Bolts: Steel bolts complying with ASTM A 307, Grade A with ASTM A 563 hex nuts and, where indicated, flat washers.

B. Metal Framing Anchors: Structural capacity, type, and size indicated.

1. Use anchors made from hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 coating designation for interior locations where stainless steel is not indicated.
2. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

C. Sill Sealer: Glass-fiber insulation, 1 inch thick, compressible to 1/32 inch.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Published requirements of metal framing anchor manufacturer.
3. Table 2304.9.1, "Fastening Schedule," in the IBC or Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 061000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

1.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA U1

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Marked lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for all miscellaneous rough carpentry unless otherwise indicated.

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPA U1.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant treated materials where required.

1.3 LUMBER

A. Dimension Lumber:

1. Maximum Moisture Content: max of 19 percent.
2. Interior Partition Framing: Standard Studs or match existing and as required per City of Jacksonville and Florida Building Code.
3. Finger – Jointed studs shall not be used.
4. Other Framing: As required per City of Jacksonville and Florida Building Code.

B. Exposed: preservative-treated with max of 19 percent maximum moisture content of any species.

C. Concealed Boards: Standard with max of 19 percent maximum moisture content of any species.

D. Miscellaneous Lumber: Standard with max of 19 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

1.4 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: Plywood preferred, Exterior**,** fire-retardant treated, not less than 1/2-inch nominal thickness.

1.5 FASTENERS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or Type 304 stainless steel, or as required by type of treatment.

1. Power-Driven Fasteners: CABO NER-272.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach miscellaneous rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in the IBC, Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 061053

SECTION 061063 - EXTERIOR ROUGH CARPENTRY

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

2.2 TREATED MATERIALS

A. Preservative-Treated Boards and Dimension Lumber: AWPA U1.

1. Use treatment containing no arsenic or chromium.

B. Preservative-Treated Timber: AWPA U1, waterborne preservative.

1. Use treatment containing no arsenic or chromium.
2. Treatment with CCA shall include post-treatment fixation process.

C. Preservative-Treated Poles: AWPA U1, waterborne preservative.

1. Use treatment containing no arsenic or chromium.
2. Treatment with CCA shall include post-treatment fixation process.

D. After treatment, re-dry boards, dimension lumber, timber, and poles to 19 percent maximum moisture content.

E. Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.

F. Provide preservative-treated materials for all exterior rough carpentry unless otherwise indicated. Comply with AWPA U1 where required.

1. Framing members less than 18 inches above grade.
2. Sills and ledgers.
3. Members in contact with masonry or concrete.
4. Posts.
5. Round wood poles.
6. Decking.
7. Stair treads.

2.3 LUMBER

A. Dimension Lumber:

1. Maximum Moisture Content: 19 percent**.**
2. Deck and Stair Framing: Minimum No. 2 grade.
3. Dimension Lumber Posts: No. 2 or Construction grade
4. Dimension Lumber Railing Members and Benches: No. 2
5. Provide material hand selected for freedom from characteristics, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.

B. Boards:

1. Maximum Moisture Content 19 percent.
2. Board Decking and Stair Treads: 1-1/4-inch thick, radius-edged decking.
3. Stair Treads: 1-1/4-inch thick stepping with half-round or rounded-edge nosing.

2.4 TIMBER AND POLES

A. Timbers 5-Inch Nominal Size and Thicker: Provide dressed timber (S4S) or timber that is rough sawn (Rgh) unless otherwise indicated.

1. Maximum Moisture Content: 19 percent.
2. Timber Posts: No. 2 grade;

B. Round Wood Poles: Clean-peeled wood poles complying with ASTM D 3200; with at least 80 percent of inner bark removed and with knots and limbs cut flush with the surface.

2.5 PLASTIC DECKING

A. Plastic Lumber, General: Products acceptable to authorities having jurisdiction and for which current model code evaluation reports exist that show compliance with building code in effect for Project for indicated occupancy and type of construction.

1. Allowable loads and spans, as documented in evaluation reports or in information referenced in evaluation reports, shall not be less than design loads and spans indicated.

B. Composite Plastic Lumber: Solid or hollow shapes where applicable, made from a mixture of cellulose fiber and polyethylene.

C. All-Plastic Lumber: Solid or hollow shapes where applicable, made from high-density polyethylene (HDPE) with no cellulose fiber.

D. Decking Size: Match existing or as determined by Developer.

E. Configuration: Provide product with grooved edges designed for fastening with concealed splines or tongue-and-groove edges designed for concealed fastening.

F. Surface Texture: Manufacturer's standard for Decks and Stairs or as required for Rails.

2.6 MISCELLANEOUS PRODUCTS

A. Fasteners: Use stainless steel fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or ASTM F 2329 unless otherwise indicated.

1. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
2. Power-Driven Fasteners: CABO NER-272.
3. Carbon-Steel Bolts: ASTM A 307 with ASTM A 563 hex nuts and, where indicated, flat washers all hot-dip zinc coated.

B. Post installed Anchors: Stainless-steel, chemical or torque-controlled expansion anchors with capability to sustain, without failure, a load equal to six times the load imposed as determined by testing per ASTM E 488.

C. Metal Framing Anchors: Structural capacity, type, and size indicated, made from [hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 coating or hot-dip galvanized steel complying with ASTM A 653/A 653M, G185 coating or stainless steel complying with ASTM A 666, Type 304.

D. Deck Splines: Plastic splines designed to fit in grooves routed into the sides of decking material and be fastened to deck framing with screws. Splines are made from UV-resistant polypropylene.

E. Deck Clips: Black-oxide-coated stainless-steel clips designed to be fastened to deck framing with screws, and to secure decking material with teeth.

F. Deck Tracks: Formed metal strips designed to be fastened to deck framing and to secure decking material from underside with screws. Made from epoxy powder-coated, hot-dip galvanized or stainless steel.

G. Flexible Flashing: UV-resistant, self-adhesive, elastomeric thermoplastic flashing material with an overall thickness of not less than 0.040 inch.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction" unless otherwise indicated.

C. Securely attach rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Published requirements of metal framing anchor manufacturer.

3. Table 2304.9.1, "Fastening Schedule," in the IBC or Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

D. Secure decking to framing with concealed decking fasteners.

E. Secure stair treads and risers by gluing and screwing to carriages. Countersink fastener heads, fill flush, and sand filler. Extend treads over carriages and finish with bullnose edge.

F. Railing Installation: Countersink fastener heads, fill flush, and sand filler.

1. Fit balusters to railings, glue, and screw in place.
2. Secure newel posts to stringers and risers with through bolts or countersunk-head wood screws and glue.
3. Secure wall rails with metal brackets. Fasten freestanding railings to newel posts and to trim at walls with countersunk-head wood screws or rail bolts and glue.

END OF SECTION 061063

SECTION 061600 - SHEATHING

PART 1 - PRODUCTS

1.1 WOOD PANEL PRODUCTS, GENERAL

A. Plywood: DOC PS 1.

B. Oriented Strand Board: DOC PS 2.

C. Replace the existing deteriorated roofing sheathing. Check for structural soundness of all material pertaining to the roof. All damaged, broken, missing, and/or deteriorated lumber, sheathing, and/or rafters must be replaced. Framing materials shall match the existing.

D. Replace the existing deteriorated wall sheathing, subject to an open wall inspection by the NSP Construction Manager or local building official. All work shall be done according to local and state building codes.

1.2 TREATED PLYWOOD

A. Preservative-Treated Plywood: AWPA U1.

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

B. Provide preservative-treated plywood when in contact with any masonry/concrete or used with roofing, flashing, vapor barriers, and waterproofing.

C. Fire-Retardant-Treated Plywood: Comply with performance requirements in AWPA U1, labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) for roof sheathing and where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant-treated plywood where required.

1.3 WALL SHEATHING

A. Plywood Wall Sheathing: Exterior sheathing.
1. Thickness: as required by code.

B. Oriented-Strand-Board Wall Sheathing: Exposure 1 sheathing.
1. Thickness: as required by code.

C. Gypsum Wall Sheathing: Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.
   1. Thickness: as required by code.

D. Insulating Foam Wall Sheathing

   1. Extruded-Polystyrene-Foam Wall Sheathing: ASTM C 578, Type IV.
   2. Foil-Faced, Polyisocyanurate-Foam Wall Sheathing: ASTM C 1289, Type I, Class 2. Foam-plastic core and facings shall have flame spread of 25 or less, when tested individually.
   3. Thickness: as required by code.

E. Exterior Fiber Cement Sheathing: Fiber cement board complying with ASTM C 1186, Type A, not less than 5/16-inch thick.

1.4 ROOF SHEATHING

A. Plywood Roof Sheathing: Minimum of Exposure 1 sheathing.
   1. Thickness: as required by code.

B. Oriented-Strand-Board Roof Sheathing: Exposure 1 sheathing.
   1. Thickness: as required by code.

1.5 SUBFLOORING AND UNDERLAYMENT

A. Combination Subfloor-Underlayment:

   1. Plywood Combination Subfloor-Underlayment: DOC PS 1, Exterior, C-C Plugged single-floor panels.
   2. Oriented-Stand-Board Combination Subfloor-Underlayment: Exposure 1 single-floor panels.

B. Subflooring:

   1. Plywood Subflooring: Exposure 1 single-floor panels or sheathing.
      a. Thickness: as required by code.
   2. Oriented-Strand-Board Subflooring: Exposure 1
      a. Thickness: as required by code.

C. Underlayment:

   1. Plywood Underlayment for Resilient Flooring: DOC PS 1, **Exposure 1 Underlayment** with fully sanded face.
   2. Plywood Underlayment for Ceramic Tile: DOC PS 1, Exterior, C-C Plugged, not less than **5/8-inch** nominal thickness, for ceramic tile set in organic adhesive.
   3. Plywood Underlayment for Carpet: DOC PS 1, Exterior, C-C Plugged.
   4. Particleboard Underlayment: ANSI A208.1, Grade PBU.
   5. Hardboard Underlayment: AHA A135.4, Class 4 (Service), Surface S1S; with back side sanded.

1.6 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated.

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.
2. Power-Driven Fasteners: CABO NER-272.

B. Sheathing Joint-and-Penetration Treatment Materials:

1. Sealant for Fiber Cement Sheathing: Joint sealant recommended by sheathing manufacturer for application indicated.
2. Sheathing Tape for Fiber Cement Sheathing: Self-adhering, glass-fiber tape recommended by sheathing and tape manufacturers for application indicated.
3. Sheathing Tape for Foam-Plastic Sheathing: Pressure-sensitive plastic tape recommended by sheathing manufacturer for sealing joints and penetrations in sheathing.

C. Adhesives for Field Gluing Panels to Framing: APA AFG-01.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Securely attach to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. For sub-flooring provide ring shanked fastener.
3. Table 2304.9.1, "Fastening Schedule," in the IBC or Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

B. Fastening Methods:

1. Combination Subfloor-Underlayment:
   a. Glue and nail to wood framing.
   b. Screw to cold-formed metal framing.

2. Subflooring:
   a. Glue and nail to wood framing using ring shanked nails.
   b. Screw to cold-formed metal framing.

3. Wall and Roof Sheathing:
   a. Nail to wood framing.
   b. Screw to cold-formed metal framing.

4. Underlayment:
   a. Nail to subflooring.

C. Fiber Cement Sheathing Joint-and-Penetration Treatment: Seal sheathing joints and penetrations according to sheathing manufacturer's written instructions.

END OF SECTION 061600

SECTION 062000 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All trim that has been damages, broken, or missing shall be repaired or replaced with material of the same size, shape, and type.

B. <u>ALL TRIM THROUGHOUT THE HOME MUST MATCH.</u>

C. All existing trim shall be scraped, sanded, and filled to present a smooth surface free of defects ready to receive paint or a natural finish in like new condition.

D. Baseboards: All homes shall have a minimum of 3-1/4 inch decorative profile baseboard throughout *(see Attached)*. In areas containing tile, vinyl, and wood flooring 1/2-by-3/4 inch quarter-round shoe is required in addition to baseboard *(see Attached)*.

E. Door Casing: All doors shall be cased with a minimum 2-1/2 inch wide decorative profile casing *(see Attached)*.

F. Window Sills: All windows shall be trimmed with a minimum 5-1/2 inch wide routed edge sill, with a 2-1/2 inch wide trim piece underneath.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. Hardwood Plywood: HPVA HP-1.

D. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

E. Particleboard: ANSI A208.1, M-2, made with binder containing no urea-formaldehyde resin.

F. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

2.2 EXTERIOR FINISH CARPENTRY

A. Exterior Lumber Trim: As required.

1. Maximum Moisture Content: 19 percent.

B. Cellular PVC Exterior Trim: Extruded, expanded PVC with a small-cell microstructure, made from UV- and heat-stabilized, rigid material.

C. Foam-Plastic Moldings: Molded product of shapes indicated, with a tough outer skin on exposed surfaces; factory primed. Product is recommended by manufacturer for exterior use.

D. Lumber Siding: Kiln-dried, as required.

E. Plywood Siding: APA-rated siding, minimum 1/2-inch thick,

F. Plywood Soffits: minimum 3/8-inch thick, Exterior-type, Grade C-C plugged and touch sanded.

1. Soffits may be constructed with one of the following three details:

a. Exposed rafter tails and roof decking with holes cut in the soffit blocking to provide ventilation. (use exterior grade treated lumber and paint in accordance with Section 099100)

b. Exposed fascia w/ 1 x 2 drip edge and plywood box soffit with holes cut to provide ventilation. (use exterior grade treated lumber and paint in accordance with Section 099100)

c. Ventilated vinyl soffit and aluminum fascia.

2.3 INTERIOR STANDING AND RUNNING TRIM

A. Interior Softwood Lumber Trim: Kiln-dried, as required.

1. Maximum Moisture Content: 15 percent.

B. Interior Hardwood Lumber Trim: Clear, kiln-dried, as required.

C. Wood Moldings: WMMPA WM 4 made to patterns in WMMPA WM 12 from kiln-dried stock.

1. Softwood Moldings for Transparent
2. Moldings for Painted Finish: P-Grade
3. Base: WM 623, Ogee Base, minimum or match existing ***(see Attached).***
4. Shoe Mold: WM 126, 1/2-by-3/4-inch quarter-round shoe ***(see Attached).***
5. Casing: WM 356, Colonial Casing or match existing ***(see Attached).***
6. Stop: WM 941, stop minimum or match existing ***(see Attached).***
7. Chair Rail: WM 390 if desired ***(see Attached).***

D. PVC-Wrapped Moldings: WMMPA WM 2 and made to patterns included in WMMPA WM 12.

1. Base: WM 623, Ogee Base, minimum or match existing ***(see Attached).***
2. Shoe Mold: WM 126, 1/2-by-3/4-inch quarter-round shoe ***(see Attached).***
3. Casing: WM 356, Colonial Casing minimum or match existing ***(see Attached).***
4. Stop: WM 941, stop minimum or match existing ***(see Attached).***
5. Chair Rail: WM 390 if desired ***(see Attached).***

E. Foam-Plastic Moldings: Molded product of shapes indicated, with a tough outer skin on exposed surfaces; factory primed. Exposed surfaces shall not be shaped after molding.

2.4 FIRE-RATED INTERIOR DOOR FRAMES

A. Frames, complete with casings, fabricated from fire-retardant particleboard or fire-retardant MDF with veneered exposed surfaces, or from solid fire-retardant-treated wood. Frames shall be labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing per NFPA 252**.**

1. Fire Rating: 20 minutes minimum

2.5 PANELING

1. Hardwood Veneer Plywood Paneling: Manufacturer's stock panels complying with HPVA HP-1Face.

2. Veneer Species: As selected.
3. Veneer Matching: Selected for similar color and grain.
4. Thickness: 1/8 inch.
5. Face Pattern: Manufacturer's standard V or channel-grooved pattern, with grooves at edges, center, and third points of panels, and at other locations to provide pattern resembling random width boards.

B. Hardboard Paneling: Factory finished, 1/8 inch thick, complying with AHA 135.5, Class **II** finish minimum.

1. Surface-Burning Characteristics: Flame-spread index of 25 or less and smoke-developed index of 450 or less, per ASTM E 84.

C. Board Paneling: WMMPA WM 9, kiln dried.

1. Species: As selected.
2. Grade: Clear No. 2
3. Pattern: V-joint, tongue-and-groove, PT 82 or Beveled-edge channel, shiplapped, PT 82.
4. Net Coverage Width: Not less than 5-1/16 inches.

2.6 WOOD SHELVING AND CLOTHES RODS

A. Shelving: 3/4-inch finish boards as specified for interior softwood lumber trim.

B. Clothes Rods: 1-1/2-inch diameter, clear, kiln-dried hardwood.

C. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.

2.7 STAIRS AND RAILINGS

A. Interior Treads: minimum 1-1/16-inch, clear, kiln-dried, edge-glued, hard wood stepping with half-round nosing.

B. Interior Risers: minimum 13/16-inch, clear, kiln-dried, edge-glued stock matching treads.

C. Exterior Treads: minimum 1-1/4-inch, kiln-dried, pressure-preservative-treated (Southern pine, B & B finish boards minimum) stepping with half-round nosing.

D. Exterior Risers: minimum 3/4-inch kiln-dried, pressure-preservative-treated Southern pine, B & B finish boards minimum.

E. Interior Railings: Clear, kiln-dried, hard wood railing stock.

F. Exterior Railings: Clear, kiln-dried, pressure-preservative-treated southern pine minimum.

2.8 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Stainless-steel, hot-dip galvanized steel or aluminum or as required by the chemical treatment present.

B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer.

1. Use waterproof resorcinol glue for exterior applications.
   a. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

C. Adhesive for Cellular PVC Trim: Product recommended by trim manufacturer.
   a. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

D. Installation Adhesive for Foam Plastic Moldings: Product recommended for indicated use by foam plastic molding manufacturer.
   a. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

E. Insect Screening for Soffit Vents: Aluminum, PVC-coated glass-fiber fabric or Stainless steel.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Condition finish carpentry in installation areas for 24 hours before installing.

B. Prime and back prime lumber for painted finish exposed on the exterior.

C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.

D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.

E. Nail siding at each stud. Do not allow nails to penetrate more than one thickness of siding, unless otherwise recommended by siding manufacturer. Seal joints at inside and outside corners and at trim locations.

F. Select and arrange paneling for best match of adjacent units. Install with uniform tight joints.

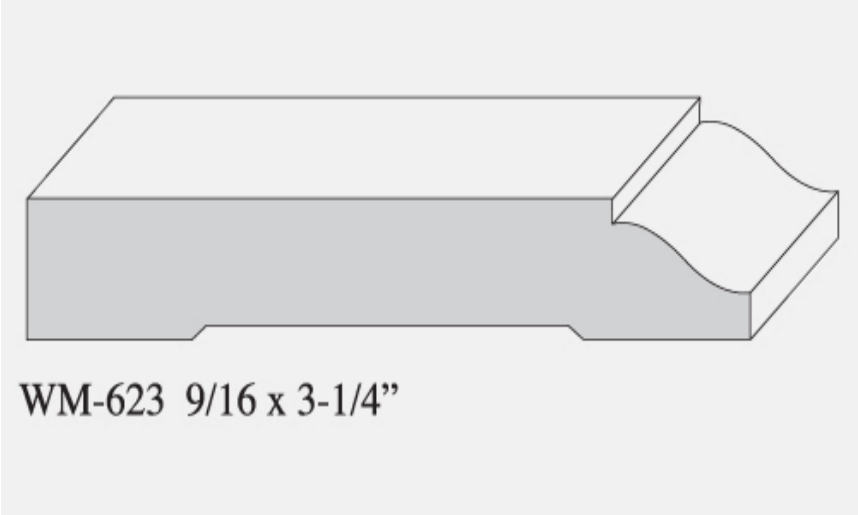
G. Exterior Stairs: Secure treads and risers by gluing and nailing to carriages. Countersink nail heads, fill flush, and sand filler. Extend treads over carriages and finish with bull-nose edge.

H. Interior Stairs: Secure treads and risers by gluing and nailing to rough carriages.

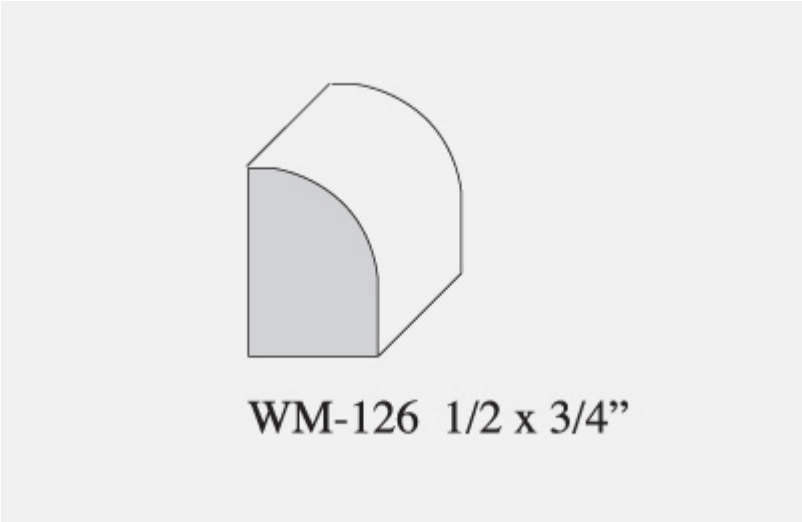
1. Closed Stringers: House treads and risers into wall stringers, glue, and wedge into place. Cope wall stringers to fit tightly over treads and risers.
2. Open Stringers: Miter risers and stringer at open stringers. Extend tread over open stringers and finish with bull-nose edge.

END OF SECTION 062000

NEIGHBORHOOD STABILIZATION PROGRAM

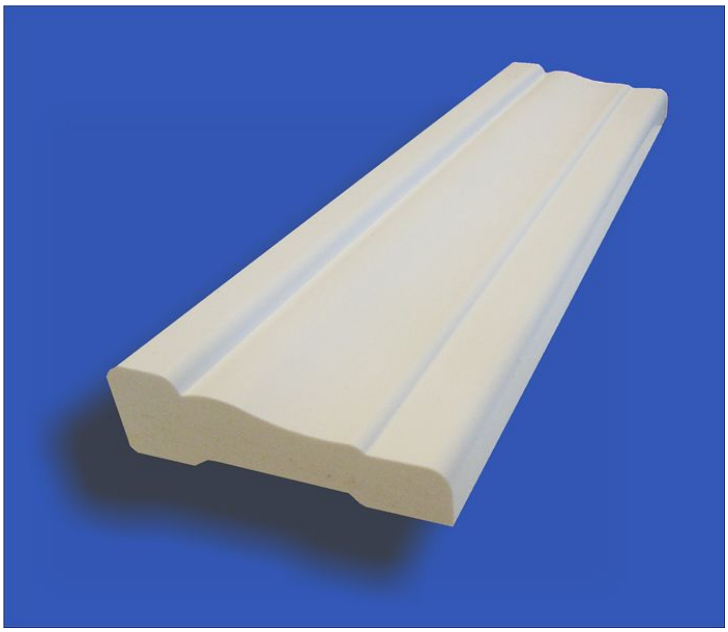


BASEBOARD

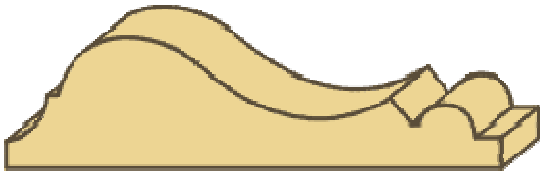


SHOE

NEIGHBORHOOD STABILIZATION PROGRAM



CASING: WM-356 9/16 X 2-1/4”



CHAIR: WM-390 2-9/16” X 11/16”

NEIGHBORHOOD STABILIZATION PROGRAM

STOP: WM-941 7/16” X 3/4"

SECTION 064013 - EXTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Quality Standard: Architectural Woodwork Institute's "Architectural Woodwork Quality Standards." or Woodwork Institute's "Manual of Millwork."

B. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardboard: AHA A135.4.

B. Softwood Plywood: DOC PS 1.

C. Preservative Treatment: Comply with WDMA I.S.4 for items indicated to receive water-repellent preservative treatment.

D. Fasteners for Exterior Woodwork:

1. Nails: Aluminum, hot-dip galvanized or stainless steel.
2. Screws: Aluminum, bronze, hot-dip galvanized or stainless steel.

2.2 EXTERIOR WOODWORK

A. Wood Moisture Content: 10 to 15 percent.

B. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

D. Exterior Standing and Running Trim: Custom grade, as chosen by Developer.

E. Exterior Frames and Jambs: Custom grade, as chosen by Developer.

F. Exterior Shutters: Custom grade, as chosen by Developer.

G. Exterior Ornamental Work: Custom grade, as chosen by Developer.

H. Shop prime woodwork for opaque finish with one coat of specified wood primer.

I. Shop seal woodwork for transparent finish with stain (if required), other required pretreatments, and first coat of specified finish.

J. Back-prime with one coat of sealer or primer, compatible with finish coats. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install woodwork to comply with referenced quality standard for grade specified.

B. Install woodwork true and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork.

E. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

END OF SECTION 064013

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Quality Standard: Architectural Woodwork Institute's "Architectural Woodwork Quality Standards." or Woodwork Institute's "Manual of Millwork."

B. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is completed, and HVAC system is operating.

C. Architectural paints, coatings and primers applied to interior walls and ceilings: volatile organic compound (voc) content ≤ 50 g/L for flat & 150 g/L for nonflats.

D. Anticorrosive and antitrust paints applied to interior ferrous metal substrates: voc content ≤ 250 g/L.

E. Clear wood finishes: voc ≤ 350f/L for varnish & 550 f/L for lacquer.

F. Floor coatings: voc ≤ 100 g/L.

G. Shellacs: voc ≤ 730 g/L for clear & 550 g/L for pigmented.

H. Stains: voc ≤ 250 g/L.

I. Multi purpose Construction Adhesives: voc ≤ 70 g/L.

J. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardboard: AHA A135.4.

B. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.

C. Particleboard: ANSI A208.1, Grade M-2 or Straw-based particleboard complying with requirements of ANSI A208.1, Grade M-2, except for density.

D. Softwood Plywood: DOC PS 1.

E. Hardwood Plywood and Face Veneers: HPVA HP-1, made with adhesive containing no urea formaldehyde.

F. Thermoset Decorative Panels: Comply with LMA SAT - 1.

G. High-Pressure Decorative Laminate: NEMA LD 3.

H. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

I. Hardwood, such as Oak and Maple.

2.2 INTERIOR WOODWORK

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

C. Interior Standing and Running Trim for Transparent Finish: Custom grade, as chosen by Developer.

D. Interior Standing and Running Trim for Opaque Finish: Custom grade, as chosen by Developer.

E. Stair work and Rails: Custom grade.

1. Wood Species for Transparent Finish: As chosen by Developer.
2. Wood Species for Opaque Finish: Any closed-grain hardwood as chosen by Developer.
3. Finishes for Stair Parts: Treads, as chosen by Developer.
4. Glue treads to risers, and glue and nail treads and risers to carriages.
5. House wall and face stringers and glue and wedge treads and risers.
6. Fabricate stairs with treads and risers no more than 1/8 inch from indicated position and no more than 1/16 inch out of position for adjacent treads and risers.

F. Flush Wood Paneling for Transparent Finish:

1. Wood Species: as chosen by Developer.
2. Matching of Adjacent Veneer Leaves: Slip or random match.
3. Veneer Matching within Panel Face: Balance match.
4. Panel Matching: No matching between panels is required. Select and arrange panels for similarity of grain pattern and color between adjacent panels.

G. Interior Ornamental Work for Transparent Finish: Custom grade.

H. Interior Ornamental Work for Opaque Finish: Custom grade.

2.3 SHOP FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

A. Finish architectural woodwork at the fabrication shop; defer only final touch up until after installation.

1. Apply one coat of sealer or primer to concealed surfaces of woodwork.
2. Apply a vinyl wash coat to woodwork made from closed-grain wood before staining and finishing.
3. After staining, if any, apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.

B. Transparent Finish: AWI finish system synthetic penetrating oil, conversion varnish or catalyzed polyurethane.

C. Transparent Finish: WI finish System 4, conversion varnish or 5, catalyzed polyurethane or 6, penetrating oil.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Install woodwork to comply with referenced quality standard for grade specified.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed nailing, countersunk and filled flush with woodwork.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

G. Anchor paneling to supports with concealed panel-hanger clips and by blind nailing on back-up strips, splined-connection strips, and similar associated trim and framing.

H. Stairs: Securely anchor carriages to supporting substrates. Install stairs with treads and risers no more than 1/8 inch from indicated position.

I. Railings:

1. Stair Rails: Glue and dowel or pin balusters to treads and railings, and railings to newel posts.
2. Wall Rails: Support rails on indicated metal brackets securely fastened to wall framing.

END OF SECTION 064023

SECTION 065000 – CABINETS AND COUNTERTOPS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Quality Standard: Architectural Woodwork Institute's "Architectural Woodwork Quality Standards." or Woodwork Institute's "Manual of Millwork."

B. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, and HVAC system is operating.

C. Comply with KCMS A161.1 Provide cabinets with KCMA's "B\Certified Cabinet" seal affixed in a semi-exposed location of each unit.

D. Comply with KCMA A161.2 for plastic-laminate countertops.

E. All kitchens shall be designed in manner to allow space for a 30" oven/range, microwave/hood combo, 24" built-in under cabinet dishwasher, and 22 cubic foot refrigerator.

F. There shall be minimum 30" tall upper cabinets over all base cabinets in the kitchen.

G. All full baths shall have minimum 2-door cabinet base with drop in sink.

H. All countertops shall be at minimum plastic-laminate as described below.

I. Clear wood finishes: voc ≤ 350f/L for varnish & 550 f/L for lacquer.

J. Shellacs: voc ≤ 730 g/L for clear & 550 g/L for pigmented.

K. Stains: voc ≤ 250 g/L.

L. Multi purpose Construction Adhesives: voc ≤ 70 g/L.

M. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

1.2 BASIS FOR REPLACEMENT

1. **If all upper cabinets and base cabinets are not consistent in style and/or color the Contractor shall remove and replace in accordance with the specifications outlined below.**
2. **If all upper cabinets and base cabinets are matching and it is determined to be in reasonable condition fro rehabilitation, but does not function as intended, the Contractor shall repair/replace all components in accordance with the specifications outlined below.**

3. If the upper cabinets and base cabinets are damaged greater than 20% (i.e. cracking, splintering, warped, gouges, etc..) the Contractor shall remove and replace in accordance with the specifications outlined below.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cabinet frames shall be made of all solid hardwood. The doors are to be no less than 3/4" thick hardwood frames with oak plywood panels. All tops, bottoms, side panels, shelves and drawers shall be a minimum of 3/8" thick cabinet grade plywood.

B. Hardboard: AHA A135.4.

C. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.

D. Particleboard: ANSI A208.1, Grade M-2 or Straw-based particleboard complying with requirements of ANSI A208.1, Grade M-2, except for density.

E. Softwood Plywood: DOC PS 1.

F. Hardwood Plywood and Face Veneers: HPVA HP-1, made with adhesive containing no urea formaldehyde.

G. Thermoset Decorative Panels: Comply with LMA SAT - 1.

H. High-Pressure Decorative Laminate: NEMA LD 3.

I. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

2.2 CABINETS AND COUNTERTOPS

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Wood Cabinets for Transparent Finish:

1. Face Style: Raised Panel.
2. Cabinet Style: Face Frame.
3. Door and Drawer Fronts: Wood stiles and rails, with raised center panels.
4. Door and Drawer Fronts: Veneer-faced plywood
5. Face Frame Finish: Wood.
6. Exposed Cabinet End Finish: Wood or Plastic Laminate
7. Exposed Wood: Clear solid wood or hardwood plywood with Grade A faces per HPVA HP-1, selected for compatible color and grain as chosen by Developer.
8. Door and Drawer Pulls: Surface mounted decorative pulls as chosen by Developer.

9. Hinges: Concealed butt hinges.
10. Drawer Guides: Epoxy-coated-metal, self-closing drawer guides with nylon-tired, ball-bearing rollers.
11. Matching of Veneer Leaves: Slip or Random match.
12. Veneer Matching within Panel Face: Balance match.
13. Semi-exposed Surfaces Other Than Drawer Bodies: as chosen by Developer.
14. Drawer Sides and Backs: Solid-hardwood lumber, as chosen by Developer.
15. Drawer Bottoms: Hardwood plywood as chosen by Developer.

C. Plastic-Laminate Cabinets:
1. Exposed Plastic Laminate: NEMA LD 3, Grade VGS , through-color plastic laminate.
2. Thermoformed-Vinyl-Faced Panels: Medium-density fiberboard, ANSI A208.2, with thermoformed vinyl overlay
3. Construction Style: Face Frame.
4. Door and Drawer Front Style: Raised center panels
5. Door and Drawer Pulls: Surface mounted decorative pulls as chosen by Developer.
6. Hinges: Concealed butt hinges.
7. Drawer Guides: Epoxy-coated-metal, self-closing drawer guides with nylon-tired, ball-bearing rollers.
8. Laminate Cladding: Horizontal surfaces other than tops, HGS; post-formed surfaces, HGP; vertical surfaces, as chosen by Developer.
9. Drawer Sides and Backs: Solid hardwood as chosen by Developer. Drawer Bottoms: Hardwood plywood as chosen by Developer.

D. Plastic-Laminate Countertops and Splashes:

1. Laminate Grade: NEMA LD 3 HGS for flat countertops, HGP for post-formed countertops.
2. Substrate: Particleboard, ANSI A208.1, Grade M-2 or exterior plywood, PS 1, Grade C
3. Backing: Plastic-laminate backer sheet, MENA LD3, Grade BKL
4. Grain Direction: Parallel to cabinet fronts.
5. Edge Treatment: Same as laminate cladding on horizontal surfaces.
6. Splash Height: 4 inches
7. Splash Thickness: 3/4-inch nominal thickness
8. Splash Top-Edge Detail: Straight, slightly eased at corner
9. Seams: Fabricate countertops without seams.

E. Solid-Surfacing Material Countertops:

1. Solid-Surfacing Material Thickness: minimum 1/2 inch.
2. Fabricate tops in one piece with shop-applied backsplashes and edges.
3. Install integral sink bowls in countertops in shop.
4. Comply with ISSFA-2 and ANSI Z124.3, Type 5 or Type 6, without a pre-coated finish.

F. Countertop Configuration:

1. Front Style: No drip (raised marine edge with rolled front), Rolled, or Beveled 3/4-inch bullnose.
2. Cove Type: Post formed laminate supported at junction of top and backsplash by wood-cove molding.
3. Backsplash: Straight, slightly eased at corner

4. End Splash: Matching backsplash.

2.3 SHOP FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

A. Finishes: Same grades as items to be finished.

B. Finish architectural woodwork at the fabrication shop; defer only final touch up until after installation.

1. Apply one coat of sealer or primer to concealed surfaces of woodwork.
2. Apply a vinyl wash coat to woodwork made from closed-grain wood before staining and finishing.
3. After staining, if any, apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.

C. Transparent Finish: AWI finish system synthetic penetrating oil, conversion varnish or catalyzed polyurethane.

D. Transparent Finish: WI finish System 4, conversion varnish or 5, catalyzed polyurethane or 6, penetrating oil.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All cabinets shall be anchored with screws to wall framing (NAILING IS NOT ACCEPTABLE). If wall framing is not available the Contractor shall install the necessary blocking and repair the drywall as needed.

B. Install cabinets with no variations in flushness of adjoining surfaces by using concealed shims. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match casework face.

C. Install cabinets without distortion so doors and drawers fit openings properly and are aligned.

D. Install level and plumb to a tolerance of 1/8 inch in 8 feet.

E. Fasten each cabinet to adjacent unit and to structural members of wall construction. Fasten wall cabinets through back, near top and bottom, at ends and not less than 24 inches o.c.

1. Use No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips.
2. Use toggle bolts through metal backing behind gypsum board.

F. Fasten plastic-laminate countertops by screwing through corner blocks in base units into underside of countertop. Spline and glue joints in countertops and use concealed mechanical clamps.

1. Provide cutouts for sinks and lavatories, including holes for faucets and accessories.

2. Seal edges of cutouts by saturating with varnish.

G. Fasten solid-surface countertops by screwing through corner blocks in base units into underside of countertop. Align adjacent surfaces. Form seams 1/8 inch wide and adhere with manufacturer's recommended joint adhesive in color to match countertop. Dress joints smooth, remove surface scratches, and clean entire surface.

1. Seal edges of cutouts by saturating with varnish.

H. Cabinets: Install so doors and drawers are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips.

I. Anchor countertops securely to base units. Seal space between backsplash and wall.

END OF SECTION 065000

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All ceilings in conditioned spaces shall contain blown insulation with a minimum value of R-30.

B. All wood framed exterior walls shall contain batt insulation with a minimum value of R-11 for 4" walls.

C. See NSP Green Building Practices Handbook, Section 3.1 – Insulation for further requirements.

1. Improve the insulation properties of the home to minimize heat transfer and thermal bridging.
2. Exterior doors ≥ R-5; Ceiling/Attic ≥ R-30; Interior Wall ≥ R-11; Ducts ≥ R-8.

PART 2 - PRODUCTS

2.1 INSULATION PRODUCTS

A. Surface-Burning Characteristics: ASTM E 84, and as follows:

1. Flame-Spread Index: 25 or less where exposed; otherwise, as indicated in Part 2 "Insulation Products" Article.
2. Smoked-Developed Index: 450 or less.

B. Extruded-Polystyrene Board Insulation: ASTM C 578, Type V, with flame-spread index of 75 or less.

C. Molded-Polystyrene Board Insulation: ASTM C 578, Type II, with flame-spread index of 75 or less.

D. Foil-Faced Polyisocyanurate Board Insulation: ASTM C 1289, Type I, Class 1 or 2, faced on both sides with aluminum foil, with flame-spread index of 75 or less for unfaced core material.

E. Flexible Glass-Fiber-Board Insulation: ASTM C 612, Type IA or ASTM C 553, Types I, II, and III; unfaced or foil faced; nominal density of 1.5 lb/cu. ft., with flame-spread index of 25 or less.

F. Glass-Fiber-Board Insulation: ASTM C 612, Type IA or Types IA and IB; unfaced nominal density of 4.25 lb/cu. ft. with flame-spread index of 25 or less.

G. Slag-Wool-Fiber/Rock-Wool-Fiber Board Insulation: ASTM C 612, unfaced nominal density of 4 lb/cu. ft. or greater with flame-spread index of 25 or less.

H. Mineral-Fiber-Blanket Insulation: ASTM C 665, Type I, unfaced with fibers manufactured from glass, slag wool, or rock wool, with flame-spread index of 25 or less.

I. Cellulosic-Fiber Loose-Fill Insulation: ASTM C 739; chemically treated for flame-resistance, processing, and handling characteristics.

J. Glass-Fiber Loose-Fill Insulation: ASTM C 764, Type 1, pneumatic or Type 2, poured application, with flame-spread index of 25 or less.

2.2 ACCESSORIES

A. Sheet Radiant Barrier: ASTM C 1313, foil on one side or foil on both sides flame-spread index of 25 or less, and water-vapor transmission of 1 perm, maximum.

B. Vapor Retarder: Polyethylene, Reinforced polyethylene, or Fire-retardant, reinforced polyethylene, minimum of 6 mils thick.

C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed to fit between roof framing members and to provide cross-ventilation between attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install insulation in areas and in thicknesses indicated or required to produce R-values indicated. Cut and fit tightly around obstructions and fill voids with insulation.

B. Except for loose-fill insulation and insulation that is friction fitted in stud cavities, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

C. Place loose-fill insulation to comply with ASTM C 1015.

1. Comply with the CIMA's Special Report #3, "Standard Practice for Installing Cellulose Insulation."

D. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape.

END OF SECTION 072100

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Replace the existing deteriorated roofing. Check the structural soundness of all material pertaining to the roof. All damaged, broken, missing and/or deteriorated lumber, sheathing, and/or rafters must be replaced.

1. The existing roof deck may be constructed of 1 x 6 or 1 x 8 boards. It is up to the Developer to determine the means and methods of repairing or replacing the existing material. However, in all cases when the repairs are completed, there shall be no visual evidence of an uneven roof decking system. <u>NOTE: All work shall be done in accordance with all local and state building codes and a permit shall be obtained through the City of Jacksonville.</u>

B. All framing materials shall matching existing to the extent possible.

C. Replace all <u>Metal Roofing</u> with ne SM-RIB, SV or Standing Seam metal roofing and all accessories per manufacturer's specifications and local building codes.

D. Replace all <u>Shingle Roofing</u> with FHA approved shingle, felt, and metals. Manufacturer's specifications and local building codes shall be adhered to. All areas of new flashings shall be sealed.

E. All valleys, chimneys, flashing and eave drips or gravel stops shall be replaced with galvanized metal.

F. All vent pipes and other roof penetrations shall be properly flashed with approved rubber, plastic, or lead sleeve type flashing, pitch pans or other approved methods.

G. WARRANTY: CONTRACTOR SHALL GIVE A FIVE (5) YEAR LABOR WARRANTY AND A TWENTY-FIVE (25) YEAR MANUFACTURER'S WARRANTY IN WRITING TO DEVELOPER.

PART 2 - PRODUCTS

2.1 ASPHALT SHINGLES

A. Fire-Resistance Characteristics: ASTM E 108 or UL 790, Class A, B or C. Identify products with appropriate markings of testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fiberglass Shingles: ASTM D 3462.

1. Laminated-Strip Asphalt Shingles: Laminated, multi-ply overlay construction, mineral-granule surfaced, and self-sealing. Straight or Notched cut butt edge.

2. Laminated-Strip, SBS-Modified Asphalt Shingles: Laminated, multi-ply overlay construction, mineral-granule surfaced, and self-sealing, complying with UL 2218, Class IV Straight and Notched cut butt edge.
3. Multitab-Strip Asphalt Shingles: Mineral-granule surfaced and self-sealing. Three tabs, regularly spaced, with stagger or straight cut butt edge.
4. Three-Tab-Strip, SBS-Modified Asphalt Shingles: Mineral-granule surfaced and self-sealing; complying with UL 2218, Class IV.
5. No-Cutout-Strip Asphalt Shingles: Mineral-granule surfaced, self-sealing, square, and single tab. Stagger or Straight cut butt edge.

C. Organic-Felt Shingles: ASTM D 225, passing ASTM D 3161 for wind resistance, and as follows:

1. Laminated-Strip Asphalt Shingles: Laminated, multi-ply overlay construction, mineral-granule surfaced, and self-sealing. Straight or Notched cut butt edge.
2. Multi-tab Strip Asphalt Shingles: Mineral-granule surfaced and self-sealing. Three tabs, regularly spaced. No-Cutout-Strip Asphalt Shingles: Mineral-granule surfaced, self-sealing, square, and single tab. Stagger or Straight cut butt edge.

2.2 ACCESSORIES

A. Felts: ASTM D 226 or ASTM D 4869, Type I or Type II, asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment: ASTM D 1970, SBS-modified asphalt; mineral-granule or slip-resisting-polyethylene surfaced; with release paper backing; cold applied.

C. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970.

D. Ridge Vent: Rigid UV-stabilized metal ridge vent with non-woven geo-textile filter strips and with external deflector baffles; for use under ridge shingles.

E. Flexible Ridge Vent: Compression-resisting, three-dimensional, open-nylon or polyester-mat filter bonded to a nonwoven, non-wicking, geo-textile fabric cover.

F. Off Ridge Vent: Install pre-finished aluminum off ridge vents per standard trade practices and local building codes.

G. Gable Vent: Install an aluminum gable vent for proper attic ventilation. Vent is to be pre-finished. Vent shall be installed plumb and level and fitted properly in the opening.

H. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

I. Roofing Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel shingle nails, minimum 0.120-inch diameter, of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.

J. Sheet Metal Flashing and Trim: Comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."

1. Sheet Metal: Copper, Stainless steel, Zinc-tin alloy-coated stainless steel, Zinc-tin alloy-coated steel, or Aluminum having a minimum twenty-six (26) gauge.
2. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual."
3. Drip Edge: Formed sheet metal with at least a 2-inch roof deck flange and a 1-1/2-inch fascia flange with a 3/4-inch drip at lower edge.
4. Open-Valley Flashing: Fabricate with 1-inch high, inverted-V profile at center of valley and equal flange widths of 10 inches to 12 inches.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in ARMA's "Residential Asphalt Roofing Manual" and with asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual" or as recommended by the manufacturer.

B. Apply self-adhering sheet under-layment at eaves and rakes from edges of roof to at least 24 inches inside exterior wall line.

C. Apply self-adhering sheet under-layment at valleys extending 18 inches on each side.

D. Install felt under-layment on roof deck not covered by self-adhering sheet under-layment.

E. Install valleys complying with NRCA instructions. Construct woven or closed-cut sheet metal open valleys.

F. Install metal flashings to comply with requirements according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

G. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

H. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

END OF SECTION 073113

SECTION 074600 - SIDING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Warranties: Manufacturer's standard from in which siding manufacturer agrees to repair or replace siding that fails in materials or workmanship within 30 to 50 years. Failures include, but are not limited to, cracking, deforming, fading (chalking), or otherwise deteriorating beyond normal weathering.

B. If the existing exterior siding is not consistent in type or style, the Developer is to match the greater of the existing siding <u>OR</u> replace all with a minimum of vinyl siding.

C. Remove all deteriorated siding and install new siding and trim as specified. All materials to be installed according to manufacturer's specifications and all local building codes. In addition, repair or replace all deteriorated or damaged trim with lumber of the same size, style, and shape to the extent possible. In all cases, ALL OF THE SIDING AND TRIM SHALL MATCH EACH OTHER THROUGHOUT.

D. Replace all rotted/damaged soffit using exterior grade plywood and screening for ventilation. Include all required trim. New soffit shall match existing soffit. All work shall be done as per standard trade practices.

PART 2 - PRODUCTS

2.1 SIDING

A. Aluminum Siding: AAMA 1402.

1. Horizontal Pattern: 8-inch exposure in plain, single or beaded-edge, single or plain, double 4-inch board style.
2. Horizontal Pattern: 10-inch exposure in plain, Dutch-lap, double 5-inch board style.
3. Vertical Pattern: 12-inch exposure in board-and-batten style or16-inch exposure in V-grooved, triple 5-1/3-inch style.
4. Texture: Plain or Wood grain, to match existing.
5. Finish: Three-coat PVDF or Primer and baked-on acrylic.

B. Fiber-Cement Siding: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84. Factory primed.

1. Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186.
2. Horizontal Pattern: Boards 5-1/4 inches to 6-1/4 inches wide in plain, beaded-edge style with smooth, rough sawn or wood-grain texture.

3. Vertical Pattern: 48-inch wide sheets with wood-grain texture and grooves 8 inches - 12 inches o.c.
4. Panel Pattern: 48-inch wide sheets with smooth, stucco, or wood-grain texture.

C. Vinyl Siding: ASTM D 3679, integrally colored.

1. Horizontal Pattern: 6-1/2- or 7-inch exposure in beaded-edge style.
2. Horizontal Pattern: 8-inch exposure in plain, single or double, 4-inch board style.
3. Horizontal Pattern: 8-inch exposure in Dutch-lap, double 4-inch style.
4. Horizontal Pattern: 9-inch exposure in plain, or double, 4-1/2-inch board style.
5. Horizontal Pattern: 9-inch exposure in Dutch-lap, double, 4-1/2-inch board style.
6. Horizontal Pattern: 10-inch exposure in plain, Dutch-lap, double, 5-inch board style.
7. Vertical Pattern: 6-inch exposure in V-grooved, single-board style.
8. Vertical Pattern: 8-inch exposure in beaded-edge, double, 4-inch board style.
9. Vertical Pattern: 10-inch exposure in V-grooved, double, 5-inch board style.
10. Vertical Pattern: 12-inch exposure in V-grooved, double, 6-inch triple, 4-inch board style.
11. Texture: Plain or Wood grain.
12. Minimum Profile Depth (Butt Thickness): 1/2 inch to 5/8 inch.

2.2 SOFFIT

A. Aluminum Soffit: AAMA 1402.

1. Pattern: V-grooved, 6-inch exposure, 10-inch exposure in double 5-inch style, 12-inch exposure in double 6-inch style, 16-inch exposure in triple 5-1/3-inch style, [16-inch exposure in quadruple 4-inch style.
2. Ventilation: Provide perforated soffit.
3. Finish: Three-coat PVDF, Primer and baked-on acrylic or Primer and baked-on polyester.

B. Fiber-Cement Soffit: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84. Factory primed**.**

1. Pattern: 12-inch, 16-inch, or 24-inch wide sheets with smooth or wood-grain texture.
2. Ventilation: Provide perforated soffit.

C. Vinyl Soffit: ASTM D 4477, integrally colored.

1. Pattern: 6-inch exposure in V-grooved, single- beaded-edge, triple, 2-inch board style.
2. Pattern: 8-inch exposure in V-grooved, double, 4-inch board style.
3. Pattern: 10-inch exposure in V-grooved, double, 5-inch board style.
4. Pattern: 12-inch exposure in V-grooved, double, 6-inch triple, or 4-inch board style.
5. Ventilation: Provide perforated soffit.
6. Minimum Profile Depth: 1/2 inch to 5/8 inch.

D. Wood Soffit:
1. Pattern: Full width sheet of exterior grade plywood.
2. Ventilation: Provide adequately space holes and screens.

3. Replace all damaged soffit screening, including all trim as required.

2.3 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

1. Provide accessories made from same material as or matching color and texture of adjacent siding unless otherwise indicated.

B. Decorative Accessories: Provide the following aluminum, fiber-cement or vinyl decorative accessories as indicated:

1. Corner posts.
2. Door and window casings.
3. Entrance and window head pediments.
4. Pilasters.
5. Shutters with paneled or louvered faces.
6. Louvers.
7. Lattice.
8. Fascia.
9. Moldings and trim.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install aluminum siding and soffit and related accessories according to AAMA 1402.

1. Install fasteners no more than 24 inches o.c. and/or per manufacturer's recommendations and local building code.

B. Install fiber-cement siding and soffit and related accessories.

1. Install fasteners no more than 24 inches o.c. and/or per manufacturer's recommendations and local building code.

C. Install vinyl siding and soffit and related accessories according to ASTM D 4756.

1. Install fasteners for horizontal vinyl siding no more than 16 inches o.c. and/or per manufacturer's recommendations and local building code.
2. Install fasteners for vertical vinyl siding no more than 12 inches o.c. and/or per manufacturer's recommendations and local building code.

END OF SECTION 074600

SECTION 075113 - BUILT-UP ASPHALT ROOFING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Built-Up Asphalt Roofing is not permitted within the Neighborhood Stabilization Program. If encountered, install a <u>Modified Bitumen Roof</u> according to manufacturer's specifications and all local and state building codes (hot-mopped installation preferred).

B. WARRANTY: Contractor shall maintain a full five (5) year labor warranty in addition to all manufacturers' warranties. This warranty shall be in writing to the Developer.

C. Supply Construction Manager Submittals for approval prior to procurement and installation.

1. Product data: Submit specifications, installation instructions and general recommendations from manufacturers of roofing system materials, for type of roofing required.

a. Include data substantiating that materials comply with requirements, including list of materials proposed for use and manufacturer's product data sheets for other products.

b. Provide sample copies of specified warranties, including evidence of application for warranty from Manufacturer.

c. Include sample copy of maintenance instructions for use during construction and complete Manufacturer's instructions for periodic inspection and maintenance of roofing system.

2. Shop Drawings: Submit complete installation details showing roof configuration, sheet layout, seam locations, flashing, roof slopes, details at each different perimeter condition and special conditions.

a. Provide fastening pattern layout in compliance with the Current ASCE Minimum Design Standards.

b. Copy of product approval for the system, per FBC requirements.

3. Certificates:

a. Submit Manufacturer's certification that materials and components furnished conform to specified requirements and that materials furnished are compatible for decks indicated.

b. At completion of work, submit Manufacturer's certification that roofing system was installed in accordance with Manufacturer's warranty requirements.

END OF SECTION 075113

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Warranties: Provide manufacturer's standard written warranty, signed by manufacturer agreeing to promptly repair or replace roof specialties that show evidence of deterioration of factory-applied finishes within years from date of Substantial Completion.

B. Gutter, Downspouts: Repair and replace as described below.

C. Rain Diverter: Provide rain diverter at entryways, a/c units, and patios to effective divert rainwater from the area.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Copper Sheet: ASTM B 370, Temper H00 or H01, cold rolled, mill finish.

B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required.

C. Aluminum Extrusions: ASTM B 221, alloy and temper as recommended by manufacturer for use and finish indicated.

D. Aluminum Finish: Minimum Class II, clear anodic finish; AA-M12C22A31; complying with AAMA 611 or Class II, color anodic finish; AA-M12C22A32/A34.

E. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304,No. 2B (bright, reflective) or No. 3 (directional satin) finish.

F. Prepainted, Zinc-Coated Steel Sheet: ASTM A 653/A 653M, G90 coating designation, structural quality, and coil coated prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

G. Felt Underlayment: ASTM D 226, Type II (No. 30) or Type I (No. 15), asphalt-saturated organic felts as required by local building codes.

H. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970.

I. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements.

1. Exposed Penetrating Fasteners: Gasketed screws with heads matching color of metal.

2. Fasteners for Copper Sheet: Copper, hardware bronze, or Series 300 stainless steel.
3. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
5. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel.

J. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

K. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.2 ROOF SPECIALTIES

A. SPRI Wind Design Standard: Provide roof-edge flashings tested according to SPRI ES-1 and approved by the City of Jacksonville building codes.

B. Canted Roof-Edge Fascia and Gravel Stop: Manufactured, two-piece, roof-edge fascia consisting of snap-on or compression-clamped metal fascia cover and a continuous formed galvanized-steel sheet cant, 0.028 inch thick, minimum, with extended vertical leg terminating in a drip-edge cleat.

C. One-Piece Gravel Stops: Manufactured, one-piece, metal gravel stop with a horizontal flange and vertical leg, drain-through fascia terminating in a drip edge, and concealed splice plates of same material, finish, and shape as gravel stop.

1. Stainless Steel: Minimum 0.025.
2. Prepainted, Zinc-Coated Steel: Minimum 0.028 inch thick.

D. Gutters and Downspouts:

1. Gutters: Manufactured in uniform section lengths **at least ten (10) feet in length**, with matching corner units, ends, outlet tubes, and other accessories. **Section lengths shall be joined by one (1”) inch lapped and soldered joints or by watertight slip joints. Elevate back edge at least 1 inch above front edge. Furnish expansion joints, and expansion-joint covers**.

   a. Gutter Style: Rectangular
   b. Pitch: Shall be installed with a pitch of not less than 1/16” per foot to the downspout.
   c. Aluminum: Minimum 0.040 inch thick.
   d. Prepainted, Zinc-Coated Steel: Minimum 0.30 inch thick.
   e. Gutter Supports: **Gutter brackets, Straps, Spikes and ferrules with finish and material type matching the gutters. Strap hanger shall not be spaced more than thirty-six (36”) inches apart and shall be secured to the roofing.**

2. Downspouts: Plain rectangular or Corrugated rectangular with mitered elbows. Furnish wall brackets of same material and finish as downspouts, with anchors.

   a. Formed Aluminum: Minimum 0.040 inch thick.
   b. Extruded Aluminum: 0.125 inch thick.
   c. Prepainted, Zinc-Coated Steel: Minimum 0.30 inch thick.

d. Basket strainers shall be installed at the head of the downspout when downspout is connected to an underground drain.

e. Provide splash blocks made of concrete and/or fiberglass twelve (12”) inches wide by twenty-four (24”) inches long.

E. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counter flashing pieces. Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.

1. Formed Aluminum: Minimum 0.040 inch thick.
2. Stainless Steel: Minimum 0.025 inch thick.
3. Zinc-Coated Steel: Nominal 0.022-inch to 0.028-inch thickness.

F. Counter flashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches designed to snap into reglets or through-wall-flashing receiver and compress against base flashings with joints lapped.

1. Formed Aluminum: Minimum 0.040 inch thick**.**
2. Stainless Steel: 0.025 inch thick.
3. Zinc-Coated Steel: Nominal 0.022-inch to 0.028-inch thickness.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement.

B. Coat back side of aluminum or stainless-steel] roof specialties with bituminous coating where they will contact wood, ferrous metal, or cementitious construction.

C. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

D. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

E. Space movement joints at a maximum of 10 feet with no joints within 18 inches of corners or intersections unless indicated.

1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion joint caps.

F. Fastener Sizes: Use fasteners of sizes that will penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws (substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance).

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished Work.

H. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 36 inches apart. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.

I. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and one (1”) inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.

J. Reglets: Install reglets to receive flashings where flashing without embedded reglets are required. Install at height so that inserted counter flashings overlap 4 inches over top edge of base flashings.

END OF SECTION 077100

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

B. Interior and Exterior Caulking – Prepare surface and then seal all cracks between plaster and wood door trim, window trim, and cabinets or wood items attached to the wall. Seal at joints of plaster and ceramic tile. Remove old caulking and caulk all joints between brick and window frames. Seal any and all cracks in interiors and exterior wood that may provide insect harborage after prime coat of paint, but prior to finish coat. Cracks 1/4 inch wide or more shall be first packed solid with insulation or other inorganic, vermin proof, non-deteriorating material. All caulking beads shall be smooth, neat and clean.

C. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

D. If conflicting specifications are encountered in this section, the NSP Green Building Practices Handbook shall supersede.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

B. Sealant for General Exterior Use Where Another Type Is Not Specified**,** One of the Following:

1. Single-component, non-sag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
2. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
3. Single-component, non-sag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

C. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:

1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.

D. Sealant for Interior Use at Perimeters of Door and Window Frames:

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

E. Acoustical Sealant:

1. Non-sag, paintable, non-staining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

2.2 MISCELLANEOUS MATERIALS

A. Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

END OF SECTION 079200

SECTION 081410 - INTERIOR WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Manufacturer and style of door submittals.

B. All bedrooms, bathrooms, closets, pantries, and laundry rooms shall have operable doors per the specifications outlined below. Only closets, pantries, and laundry rooms may contain bi-fold doors as dictated by space requirements.

C. If all interior door styles do not match the Contractor shall remove and replace with matching styles per the specifications outlined below.

D. If an interior door does not function as intended, or is damaged by puncture, dent, excessive scratching, or warp the Contractor shall remove and replace per the specifications outlined below.

E. Where required by local building code provide Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing according to UL 10B and/or UL 10C.

F. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

G. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

PART 2 - PRODUCTS

2.1 FLUSH HOLLOW CORE

A. Quality Standard: **WDMA I.S.1-A.**

B. WDMA I.S.1-A Performance Grade: **Standard Duty**

C. All flush interior doors shall be hollow or particleboard core with lock blocks on both sides.

D. The nominal thickness of interior flush doors shall be 1-3/8” with a minimum1-1/8” MDF top and bottom rails and 1-5/32” MDF stiles.

E. All interior flush doors shall have a minimum 1/8” GRADE A premium hardwood veneer or a pre-primed, or prefinished hardboard.

2.2 MOLDED HOLLOW CORE

A. Quality Standard: **WDMA I.S.1-A.**

B. WDMA I.S.1-A Performance Grade: **Standard Duty**

C. All molded interior doors shall be three-ply hollow core or particleboard core with two lock blocks and blocking behind panels for support.

D. The standard panel configuration shall be: **6-panel Colonial or Arlington**

E. The nominal thickness of interior molded doors shall be 1-3/8", with a minimum1-1/8" MDF top and bottom rails and 1-5/32" MDF stiles.

F. All interior molded doors shall have a minimum 1/8" thick HDF facing with smooth or wood-grained pattern finish.

G. Factory finish door with manufacturer's standard primer and opaque finish.

2.3 BI-FOLD DOORS

A. Bi-fold doors and assembly shall include minimum 1-3/8 inch hollow-core wood doors with aluminum track, trim and all hardware. Opening shall be trimmed with casing as specified in Section 062000 – Finish Carpentry. Match existing style, size and design.

2.4 FABRICATION AND FINISHING

A. Factory fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as indicated.

1. Install fire-rated doors to comply with NFPA 80.

B. Align and fit doors in frames with uniform clearances and bevels. Machine doors for hardware, if pre-hung doors are not supplied. Seal cut surfaces with prime paint after fitting and machining.

C. Clearances: As follows unless otherwise indicated:

1. **No less than 1/8 inch, no greater than 1/4 inch** at heads, jambs, and between pairs of doors.
2. **No less than 1/8 inch, no greater than 3/8 inch** from bottom of door to top of decorative floor finish or covering.
3. **No less than 1/8 inch, no greater than 1/4 inch** from bottom of door to top of threshold.
4. Comply with NFPA 80 for fire-rated doors.

D. Repair, refinish, or replace factory-finished doors damaged during installation, as directed by Construction Manager.

END OF SECTION 081416

SECTION 081420 - EXTERIOR DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Design Basis: JELD-WEN's Builders Fiberglass Doors; Smooth-Pro SP-60 6-Panel Door, SP-659 CL 4-Panel with sunburst lite, or equivalent.

C. AAMA 1304; Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems

D. NFRC 100; Procedure for Determining Fenestration Thermal Properties

E. NFRC 200; Solar Heat Gain Coefficient and Visible Transmittance

F. FBC Section 1626: High Velocity Hurricane Zones – Impact Tests for Windborne Debris

G. Prior to installation of new doors, all deteriorated or damaged lumber in the frames, casings, door stops, sill, header, jambs, etc. shall be removed and replaced with new lumber.

H. All exterior lumber shall be pressure treated.

I. All homes shall have minimum 6'-8" tall solid-core exterior doors with fiberglass or wood veneer finish.

J. Install or replace the door bell, including wiring, button, and bell unit.

K. Front entry doors shall be 6-Panel with peep hole or 4-Panel with sunburst lite, and door knocker/viewer.

L. Side and rear doors shall be solid-core with fiberglass or wood veneer, but may be smooth with no paneling.

M. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

N. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products and Section 3.1 – Insulation.

PART 2 - PRODUCTS

2.1 FIBERGLASS EXTERIOR DOORS

A. Provide doors capable of complying with the designs pressures as required by local building code.

B. Provide doors capable of resisting impact from windborne debris, when tested in accordance with ASTM E1886 and ASTM E1996. In addition, doors must have been tested in accordance with FBC Section 1626.

C. Provide doors capable of complying with a **U factor ≤ or equal to 0.65** in accordance with NFRC 100 and a SHGC **≤ or equal to 0.40** in accordance with NFRC 200.

D. Materials

1. Fiberglass Skins incorporating multiple layers of resins, tinted resins, base colors and reinforcing materials.
2. Stiles and Rails: Engineered wood (laminated veneer lumber)
3. Core: Custom-fitted polystyrene core for stable insulation.

E. Product Description

1. Thickness: minimum 1-3/4" with a 20 minute fire rating
2. Door Style: Entry – Panel or paneled with glass; Side and Rear – Solid
3. Door Shape: Entry – Square Top 6-Panel or 4-Panel with lite; Side and Rear – Solid
4. Finish: Woodgrain pattern or smooth paintable surface.
5. Hardware: Manufactured to accept handle set and dead-bolt, with recessed hinges.

F. Pre-hung Hardwood Systems

1. Jambs shall be solid pine wood or Auralast at a width determined by the framed opening.
2. All pre-hung doors shall contain a "brickmold" trim and weather stripping.
3. A minimum of three (3) hinges shall be solid brass concealed-bearing with a satin nickel or oil-rubbed bronze finish.
4. Sills shall be aluminum with a polished aluminum finish.
5. All pre-hung doors shall suit frame-opening sizes indicated and to comply with clearances specified by the manufacturer.

2.2 SECURITY DOORS

A. Furnish and install security door (burglar bar) where required.

1. The burglar bar door will be constructed of 1" x 2" x 16 gauge galvanized milled steel square tube.
2. All vertical bars, pickets will be constructed with ½" x ½" hot rolled steel square solid bars.
3. Hinges are 3-1/2" x 2-1/4" with tight pins welded to inner and outer framing.
4. Locks are to be Kwikset Deadbolt, or equal, fastened to 1/8" x 4" steel center plate with receiver cut into outer framing.

5. Screens are to be made from 5/16" x ¾" aluminum framing with fiberglass screening.
6. All doors are primed (black oxide) finished coated and installed to fit present door opening.

2.3 SCREEN DOORS

A. Furnish and install new wood or metal screen doors where required.
1. Screen doors shall be complete with wire, closer, latch, and strike plate.
2. Bottom panel shall be provided with screen guard on exterior side of door. New screening shall not have any sags, bulges, or rips.
3. Replace screening gaskets as required.

2.4 FURTHER EXTERIOR DOOR REQUIREMENTS

A. All exterior doors shall be solid-core and include a method to protect the door's susceptibility to door edge splitting.

B. All exterior doors shall be 1 – ¾" inches thick. (If steel door is permitted, it shall be a minimum of 24 gauge).

C. The door edges shall be protected to prevent splitting at the deadbolt by way of installing an escutcheon plate. This escutcheon plate significantly increases the rigidity of the door edge and reduces the chance of the door splitting around the deadbolt area.

D. All exterior door frames shall be fitted with high-security strike plates. These strike plates shall be constructed of heavy-gauge brass or steel and contain a minimum if four three inch offset screws. A hardwood filler shall be inserted between the door jamb and wall structure. This filler shall extend a minimum of twelve inches above and below the strike plate.

E. All door hinges shall be anchored with at least three inch long screws and shimmed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Caulk outside perimeter of door unit between brickmold and wall face, along front side of threshold, and between jamb sides and threshold.

B. Align and fit doors in frames with uniform clearances and bevels to prevent air-infiltration and to be completely weather-tight. Machine doors for hardware, if pre-hung doors are not supplied. Seal cut surfaces with prime paint after fitting and machining.

C. Install doors in accordance with manufacturer's installation guidelines and recommendations.

END OF SECTION 081420

NEIGHBORHOOD STABILIZATION PROGRAM

MANUFACTURER: JELD-WEN
FIBERGLASS – SMOOTH PRO

JELD-WEN WINDOWS & DOORS

STEEL AND FIBERGLASS DOORS

Installation and Finishing Instructions

Prehung Installation Instructions for Non-Structural Performance

Read complete instructions before beginning.

Tools needed:

- Level
- Tape measure
- Hammer
- Safety glasses
- Phillips screwdriver
- Nail set
- Caulking gun
- Square
- Rubber gloves
- Power drill and 1/8" drill bit

Materials needed:

- Lockset
- shims
- caulking
- sandpaper
- 10d galvanized casing or finish nails or #8 x 3" and #8 x 2-1/4" drywall screws
- Paint or stain

To determine door swing (left or right), face the closed door from the outside (the side where hinges cannot be seen). Open the door. If the door swings away from you to your left, it is a left hand swing door. If the door swings away from you to your right, it is a right hand swing door.

PARTS OF A DOOR SYSTEM

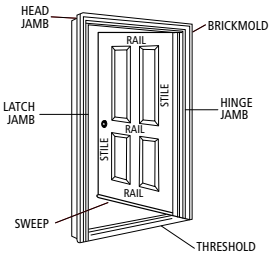


Fig. 1

1. For most installations, the rough framed opening (the distance between studs on the right and left and the distance between the header and the sub-floor) should be 2-1/4" wider and 3" taller than the door itself (not including the door jamb Fig. 1).
2. Steel and Fiberglass doors are generally 1" shorter than wood, so the rough framed opening may be somewhat shorter. Also, most door units use a 1-1/4" high threshold which provides adequate clearance for both carpet and pad. If your threshold is higher or lower than 1-1/4", the rough framed opening may need to be adjusted.

   Check the rough framed opening to be sure it is level and square and not twisted (Fig. 2). Minor out of level conditions can be corrected with shims during installation. If the opening is badly twisted (not plumb), you may need to repair this condition before proceeding.

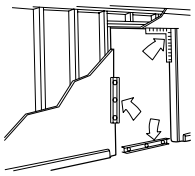


Fig. 2

3. If your prehung door is fastened in the closed position with a duplex nail or removable plastic plug, remove these along with the packaging and crating. NOTE: If your door unit has pre-hanging clips (Fig. 3), do not remove them until instructed to do so. These clips hold the door system aligned and closed during installation.

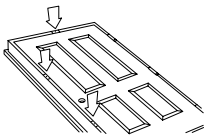


Fig. 3

4. Put a generous bead of caulk along the outside edge of the sub-floor and another generous bead of caulk 1/2" in from the first (Fig. 4). Be sure caulking beads seal the threshold and sub-floor to prevent the infiltration of moisture.

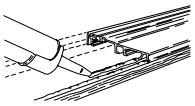


Fig. 4

5. From the outside, tilt the entire prehung door unit into the center of the opening (Fig. 5). Make sure the sill is in contact with the caulking and that the hinge jamb is level. Temporarily fasten the jamb in place with two 10d finish nails (or two #8 x 3" drywall screws if the jamb is to be painted instead of stained).


Fig. 5

   Do not set nails. Place one nail or screw (centered in the jamb) approximately 2" above the bottom hinge and one 2" below the top hinge (Fig. 6). Loosely fasten through the jamb and into the stud.

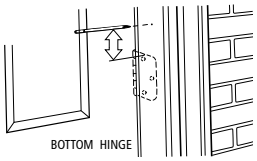


Fig. 6

6. From the inside, level and shim the hinge jamb. Place shims behind each hinge (Fig. 7). Be sure the hinge jamb is level in both directions and is square in the opening.

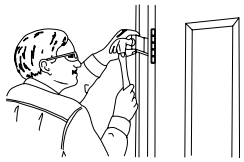


Fig. 7

7. Level, square and shim the latch jamb. Place shims in at least three locations between the jamb and the stud. Temporarily fasten the latch jamb approximately 2" from the bottom and 2" below the top of the jamb with two 10d finish nails (or two #8 x 3" drywall screws if the jamb is to be painted). Do not set the nails. Do not shim or fasten the top of the jamb to the header on a single door unit. If a sidelight is to be used, shim and fasten the top of the unit where the sidelight joins the door jamb.

   After rechecking the hinge jamb to be sure it is still level and square, securely fasten the hinge jamb in place by setting the two nails or screws installed earlier. Add an additional nail or screw centered between the first two. Remove any pre-hanging clips (Fig. 8). Be sure the door opens freely and that the space between the door and the jamb is even on all sides. Be sure the weatherstrip meets the door evenly and seals on all sides. Adjust if necessary. If adjusting is necessary, loosen or remove the latch jamb fasteners and adjust the latch jamb until there is even contact with the weatherstrip.

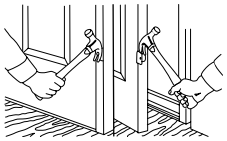


Fig. 8

8. Make sure the door sweep contacts the threshold evenly. You can adjust the threshold contact by adjusting the squareness of the door unit or, if an adjustable threshold is used, by turning the adjustment screws on the threshold (Fig. 9).

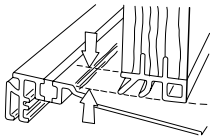


Fig. 9

9. Re-check for smooth door operation and even spacing between the door and jamb. Secure the latch jamb in place with two more 10d finish nails or #8 x 3" drywall screws. Place the nails or screws evenly between the first two already in place and fasten through the shims and into the studs.
10. Install four #10 x 2-1/4" wood screws through the hinge jamb and into the studs; two into the top hinge in the holes closest to the weatherstrip; and one each into the other hinges in the top hole closest to the weatherstrip (Fig. 10). You may need to remove the screws supplied with the hinges to insert these longer #10 x 2-1/4" screws.

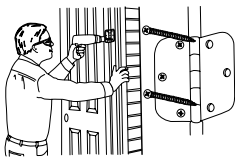


Fig. 10

11. If you have a double door unit to install or a door unit with sidelights, some additional fastening is required. Double doors should be fastened through the top of the door jamb into the door header with two 10d finish nails or two #8 x 3" drywall screws (Fig. 11).

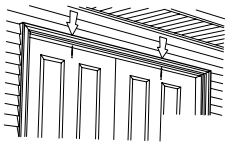


Fig. 11

On doors with sidelights installed on a wood floor, the door unit should be screwed to the floor with two #8 x 3" drywall screws in each sidelight as shown in (Fig. 12).

On concrete slab floors, doors, sidelights and thresholds should be glued to the concrete with construction adhesive instead of caulk. Be sure to complete installation before adhesive cures.

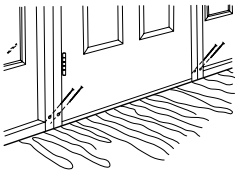


Fig. 12

12. Caulk around the outside of the door unit between the siding and brickmold, along the front side of the threshold and between the jamb sides and the threshold (Fig. 13).
13. Fire rated doors have additional installation requirements. Obtain these requirements from JELD-WEN if not supplied with the door.

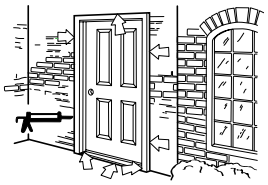


Fig. 13

14. **IMPORTANT: Storm doors should not be used with JELD-WEN Steel or Fiberglass door systems as heat buildup can damage the door.**
15. **Failure to follow proper installation and finishing instructions will void the warranty.**

Finishing Instructions

Helpful Hints Before Starting

- Place door in a flat level position off the floor and allow it to acclimate to room temperature for at least 24 hours before finishing.
- Remove the hinge pins and carefully place the door on a padded or protected surface.
- Finish in a dust-free area. Do not finish in direct sunlight.
- Remove hardware and mask off any glass.
- Follow paint or stain manufacturer's instructions.
- Wear safety glasses for eye protection, and wear rubber gloves to prevent soiling the door with oil from your hands.
- Be sure to use quality paint and primer or stain and wood sealer. Be sure the paint or stain is compatible with the primer or wood sealer.
- Finish all six sides of door to maintain warranty.
- When applying more than one coat of finish, follow paint manufacturer's instructions for time between coats.

Primed Insulated Steel Doors

Painting:

1. Remove the door from the jamb. Do not stand the door on the sweep (the flexible door bottom) as damage may result.
2. Brush the door lightly to remove any loose dirt or particles.
3. Clean the door with paint thinner (mineral spirits or turpentine), making sure all residue is removed and the door is dry.
4. Lightly scuff sand the door face and back (to improve paint adhesion) and wipe the door clean.
5. Your JELD-WEN Insulated Steel Door is primed and ready to paint. Note: JELD-WEN steel doors (not including the Stainable Steel Door) must be painted within 45 days of installation.
6. Paint all sides of the door with a quality exterior alkyd paint, an exterior acrylic enamel, or an exterior water based direct-to-metal. For best results, apply two light coats of paint following manufacturers recommendations for dry time between coats.
   Be sure to paint the top and sides of the door, as failure to do so will void the warranty.
7. If your door jamb and molding are primed, clean with a damp cloth and allow to dry. Lightly sand any rough areas and re-clean.
8. Paint the jamb and molding with a quality exterior alkyd paint. For best results, two light coats are better than one heavy coat.
9. Do not paint over the weatherstrip or the door sweep.

Our Steel doors are backed by a 10-year warranty.

10 YEAR WARRANTY
Slab only

Fiberglass doors are so durable we support them with a 25-year warranty.

25 YEAR WARRANTY
Slab only

For complete warranty information visit **www.jeld-wen.com**

FiniShield Insulated Steel and Fiberglass Doors

Preparation before staining:

1. Remove the door from the jamb. Do not stand the door on the sweep (flexible door bottom) as damage may result.
2. Brush the door lightly to remove any loose dirt or particles.
3. Clean the door with soap and water for tough dirt removal or paint thinner (spirits – DO NOT USE LACQUER THINNER), making sure all the residue is removed and the door is dry. DO NOT USE SANDPAPER ON THE DOOR.

Staining:

Note: All fiberglass doors (excluding IWP® Aurora®) and FiniShield insulated steel doors must be finished within 30 days of installation.

1. Use linseed based stain or artist oils for a deeper, richer finish. However, a heavy body stain also may be used. We suggest ZAR finishes. For more information on ZAR, please contact 1-800-845-5227.
2. Apply stain to a cheesecloth dampened with paint thinner or a sponge brush. Apply the cloth to a small area of the door to determine if the color is acceptable. A wide range of color tones can be achieved by varying the amount of stain used.
3. Apply the stain to all door edges and wipe lengthwise. Then, using a circular motion, apply the stain to the surface of the door starting with the embossed panels first and proceeding to the flat sections.
4. After completely staining one side of the door, gently wipe the door with a cheesecloth in the direction of the wood grain to blend the finish and highlight the rich wood grain appearance. The amount of pressure applied will affect the depth of the color. If you are not satisfied with the color or appearance, the door can be brought back to its original condition by cleaning with paint thinner.
5. Allow stain to dry per manufacturers recommendations, then spray on a quality clear polyurethane varnish topcoat. (THE FIRST COAT MUST BE SPRAYED ON).
6. Additional coats may be brushed on. Allow to dry for 24 hours (longer in humid areas).
7. Repeat process on the other side of the door.

Painting:

1. Remove the door from the frame. Do not stand the door on the sweep (flexible door bottom) as damage may result. If attached, carefully remove the sweep.
2. Brush the door lightly to remove any loose dirt or particles.
3. Clean the door with paint thinner (mineral spirits or turpentine) making sure all residue is removed and the door is dry. DO NOT USE SANDPAPER OR LACQUER THINNER ON THE DOOR.
4. Priming is not necessary.
5. Paint all sides of the door with a quality exterior acrylic latex paint. Apply the paint with a brush in the direction of the wood grain, making sure all surfaces are coated evenly. For best results, apply two light coats of paint, allowing the first to dry per manufacturers instructions before applying the second. Spray application of paint also may be used. Note: Excessive re-painting will diminish the wood grain texture.
6. If your door jamb and molding are primed, clean with a damp cloth and allow to dry. Lightly sand any rough areas and re-clean.
7. Paint the jamb and molding with a quality exterior acrylic latex paint. For best results, use two light coats.
8. Do not paint over the weatherstrip or the door sweep.

SECTION 083213 - SLIDING ALUMINUM-FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Provide AAMA- or WDMA-certified, sliding aluminum-framed glass doors with an attached label.

B. See NSP Green Building Practices Handbook, Section 3.2 - Windows

PART 2 - PRODUCTS

2.1 SLIDING ALUMINUM-FRAMED GLASS DOORS

1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440.
2. Performance Class: Minimum C.
3. Performance Grade: 25 - 30.
4. Condensation Resistance: CRF when tested according to AAMA 1503 or CR determined according to NFRC 500 minimum of 45.
5. AAMA/WDMA/CSA 101/I.S.2/A440 does not require testing for thermal transmittance. Whole fenestration product U-factors are greater than center of glass U-factors. U-factors vary with glazing selection; size, number, arrangement, and operation of door panels; construction; and other factors. First three options in first subparagraph below are recommended by the DOE and the EPA for the northern, north- and south-central, and southern zones of the U.S., respectively, and should be coordinated with SHGCs.
6. Thermal Transmittance: Maximum whole fenestration product **U-factor ≤ 0.55**, when tested according to AAMA 1503 or determined according to NFRC 100.
7. Solar Heat-Gain Coefficient (SHGC): Whole-fenestration product **SHGC ≤ .30** determined according to NFRC 200.
8. Forced-Entry Resistance: Performance Grade per ASTM F 842.

B. Roller Assemblies: Comply with AAMA 906.

C. Floor Track: Exterior type, low profile, ADA-ABA compliant.

D. Lock: Install manufacturer's keyed cylinder lock and multipoint locking device on each movable panel, lockable from the inside only and outside.

E. Screens: Equip units with PVC-coated, glass-fiber or charcoal-gray, coated-aluminum or aluminum mesh insect screens for each operable sliding door panel.

F. Glaze units with clear, tinted, low-e coated, argon-filled, sealed insulating, safety glass complying with Division 08 Section "Glazing" and with testing requirements in 16 CFR 1201 for Category II materials.

G. Finish: Baked Enamel

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set doors level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

C. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather tight construction.

D. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

E. Clean aluminum surfaces and glass immediately after installing sliding aluminum-framed glass doors. Remove nonpermanent labels from glass surfaces.

END OF SECTION 083213

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All homes that have a garage shall have an overhead door with automatic opener controlled by remote and keypad.

PART 2 - PRODUCTS

2.1 SECTIONAL OVERHEAD DOORS

A. Standard for Sectional Doors: Comply with DASMA 102 unless otherwise indicated.

B. Structural Performance, Exterior Doors: Provide doors capable of withstanding a minimum of 20 lbf/sq. ft. wind-load pressure or as required by local and/or state building code.

C. Panels: Galvanized steel with flat, grooved, ribbed, or fluted face sheets with minimum of 0.028 inch thickness.

1. If desired provide insulated panels with galvanized-steel inside faces.
2. Insulation: Polystyrene or polyurethane board insulation, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84; or glass-fiber board insulation or Polyurethane insulation, foamed in place, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84.
3. Finish: Baked enamel or powder coat.

D. Panels: Aluminum-framed aluminum, translucent, ribbed, glass-fiber-reinforced plastic panels.

1. Provide extruded framing, not less than 0.065 inch thick, joined by welding or through bolting with concealed aluminum or stainless-steel bolts.
2. Reinforce sections with continuous horizontal and diagonal reinforcement, as required to stiffen door and for wind loading.
3. Finish: Class II, clear anodic finish; AA-M10C22A31; complying with AAMA 611 or Baked-enamel or powder-coat finish.

E. Glazed Panel Inserts: Minimum 3-mm clear float glass.

F. Glazed Panel Inserts: 3-mm clear, UV-resistant acrylic or polycarbonate plastic.

G. Operation: Electrical.

H. Tracks and Supports: Galvanized steel, sized for door size and weight.

I. Hardware: Provide heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.

J. Locks: Slide bolt, operable from inside only, with provision for padlocking or Spring-loaded dead bolt operable from inside only.

K. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.

L. Obstruction Detection Device: Equip motorized door with external automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.

M. Radio Control: Opens, closes, and stops door; one per operator.

2.2 AUTOMATIC DOOR OPERATORS

A. Recommend: Craftsman ½ hp Garage Door opener, Chain Drive. Model # 53930
1. **Security and Anti Burglary Coding**
2. **Infrared safety reversing sensors**
3. **Posi-Lock system locks door when it is down**
4. **Light included**
5. **Provide 2 remotes and keypad**
6. **Limited 4-year warranty**
7. **Special pricing :Call Brad Becker at Sears for information. Cell – 904-233-7983, Fax – 904-485-8687**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports.

B. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

C. Fasten vertical track assembly to framing at not less than 24 inches o.c. Hang horizontal track from structural overhead framing with angle or channel hangers. Provide bracing and reinforcement as required for rigid installation of track and door.

D. Lubricate bearings and sliding parts; adjust doors to operate easily, free of warp, twist, or distortion and fitting weather-tight for entire perimeter.

E. Test and adjust controls and safeties.

END OF SECTION 083613

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Craftsman
Model # 9-53930
Description: ½ hp Garage Door Opener, chain Drive.

SECTION 085113 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data

B. Provide AAMA- or WDMA-certified aluminum windows with an attached label.

C. Design and install windows and glass doors that have NFRC ratings that meet or exceed ENERGY STAR U-factor • .55 and SHGC • .30.

D. See NSP Green Building Practices Handbook, Section 3.2 Windows, for further requirements.

E. Remove all deteriorated lumber pertaining to the window sill, frame and casing. Replace with materials of the same style, shape and design as closely as possible.

F. Replace all broken, cracked, scratched, or clouded glass.

G. Install or replace all broken or missing window locks, bar lifts, slides and springs.

H. Repair any area affected by window repair to match the surrounding finish.

I. All windows shall have screens.

J. WINDOW GUARDS – Replace existing – Install security guards (burglar bars) on the interior of all windows. The security guards are to be the full size of the window and installed with proper accessories. At least one window in every bedroom needs to have a fire release installed.

1.2 BASIS FOR REPLACEMENT

A. If all windows are not consistent in style the Contractor shall remove and replace the windows necessary to match the greater existing window style, with the requirements set forth in this section.

B. If a window does not create an air tight seal, or is cloudy the Contractor shall remove and replace to match the other existing windows, with the requirements set forth in this section.

PART 2 - PRODUCTS

2.1 ALUMINUM WINDOWS

A. Window Types: The following types, as encountered in the field.

1. Awning.
2. Casement.
3. Single or Double hung.
4. Dual action.
5. Horizontal sliding
6. Projected.
7. Fixed.

B. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440.

1. Performance Class: **R**
2. Performance Grade: **20**
3. Condensation-Resistance Factor: **45** per AAMA 1503.
4. **Thermal Transmittance: Whole-window U-factor not more than 0.55 Btu/sq. ft. x h x deg F at 15-mph wind velocity and winter temperatures per NFRC 100.**
5. **Solar Heat-Gain Coefficient: Whole-window SHGC not more than 0.30 per NFRC.**

C. Construction: Provide units with a concealed, thermal break.

D. Provide push-bar operators for casement and projected windows.

E. Provide steel ball-bearing sash rollers with nylon tires for sliding windows.

F. Equip units with charcoal-gray, coated-aluminum mesh insect screens at operable sashes.

G. Glaze units with clear, low-e coated, sealed insulating glass, complying with Division 08 Section "Glazing."

H. Finish: Baked-enamel finish, AA-C12C42R1x, complying with AAMA 2603

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather tight construction.

C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

D. Clean aluminum surfaces and glass immediately after installing windows. Remove nonpermanent labels from glass surfaces.

E. Install screens.

3.2 ALTERNATIVE

A. ARCHITECTURAL WINDOW FILM

1. If the NSP Construction Manager determines that the existing windows are in good working condition and have years of useful life remaining, then he/she may recommend that the Developer/Contractor install an architectural window film on the inside of the window in lieu of installing new windows that meet the specifications outlined in section 2.1,B above.

2. The film shall be equivalent to the following minimum specifications:

a.	**Total Solar Transmittance**	**34%**
b.	**Total Solar Reflectance**	**23%**
c.	**Total Solar Absorbance**	**43%**
d.	**Winter U-Value**	**1.06**
e.	**UV Rejection**	**99%**
f.	**Total Solar Energy Rejected**	**50%**

3. Recommended Manufacturer: SunTek Window Films, 345 Beaver Creek Drive, Martinsville, VA 24112. www.suntekfilms.com

a. Recommended Product: SymphonyDS – SYDS50 Dual-Reflective

END OF SECTION 085113

SECTION 085200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data

B. Provide AAMA- or WDMA-certified wood windows with an attached label.

C. Design and install windows and glass doors that have NFRC ratings that meet or exceed ENERGY STAR U-factor • .55 and SHGC • .30.

D. See NSP Green Building Practices Handbook, Section 3.2 Windows, for further requirements.

E. Remove all deteriorated lumber pertaining to the window sill, frame and casing. Replace with materials of the same style, shape and design as closely as possible.

F. Replace all broken, cracked, scratched, or clouded glass.

G. Install or replace all broken or missing window locks, bar lifts, slides and springs.

H. Repair any area affected by window repair to match the surrounding finish.

I. All windows shall have screens.

J. WINDOW GUARDS – Replace existing – Install security guards (burglar bars) on the interior of all windows. The security guards are to be the full size of the window and installed with proper accessories. At least one window in every bedroom needs to have a fire release installed.

1.2 BASIS FOR REPLACEMENT

A. If all windows are not consistent in style the Contractor shall remove and replace the windows necessary to match the greater existing window style, with the requirements set forth in this section.

B. If a window does not create an air tight seal, or is cloudy the Contractor shall remove and replace to match the other existing windows, with the requirements set forth in this section.

PART 2 - PRODUCTS

2.1 WOOD WINDOWS

A. Provide prime-painted, aluminum-clad, or vinyl-clad wood windows to match existing.

B. Window Types: The following types, as encountered in the field.

1. Awning.
2. Casement.
3. Single or Double hung.
4. Horizontal sliding.
5. Fixed.

C. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440.

1. Performance Class: **R**
2. Performance Grade: **20**
3. **Thermal Transmittance: Whole-window U-factor not more than 0.55 Btu/sq. ft. x h x deg F at 15-mph wind velocity and winter temperatures per NFRC 100.**
4. **Solar Heat-Gain Coefficient: Whole-window SHGC not more than 0.30 per NFRC.**

D. Trim: Provide indicated trim, matching material and finish of frame members.

E. Provide prefabricated bay window units as indicated.

F. Provide push-bar operators or gear-type rotary operators with folding handles for casement windows.

G. Equip units with charcoal-gray, coated-aluminum mesh insect screens on operable sashes.

H. Equip units with removable grilles as indicated, attach to inside face of each lite.

I. Exterior Color: White, Bronze, Beige, Brown, Gray and/or to match existing

J. Glaze units with clear, low-e coated, sealed insulating glass, complying with Division 08 Section "Glazing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather tight construction.

C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

D. Clean glass and aluminum or vinyl surfaces immediately after installing windows. Remove nonpermanent labels from glass surfaces.

E. Install screens

3.2 ALTERNATIVE

A. ARCHITECTURAL WINDOW FILM

1. If the NSP Construction Manager determines that the existing windows are in good working condition and have years of useful life remaining, then he/she may recommend that the Developer/Contractor install an architectural window film on the inside of the window in lieu of installing new windows that meet the specifications outlined in section 2.1,C above.

2. The film shall be equivalent to the following minimum specifications:

a.	**Total Solar Transmittance**	**34%**
b.	**Total Solar Reflectance**	**23%**
c.	**Total Solar Absorbance**	**43%**
d.	**Winter U-Value**	**1.06**
e.	**UV Rejection**	**99%**
f.	**Total Solar Energy Rejected**	**50%**

3. Recommended Manufacturer: SunTek Window Films, 345 Beaver Creek Drive, Martinsville, VA 24112. www.suntekfilms.com

a. Recommended Product: SymphonyDS – SYDS50 Dual-Reflective

END OF SECTION 085200

SECTION 085313 - VINYL WINDOWS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data

B. Provide AAMA- or WDMA-certified vinyl windows with an attached label.

C. Design and install windows and glass doors that have NFRC ratings that meet or exceed ENERGY STAR U-factor • .55 and SHGC • .30.

D. See NSP Green Building Practices Handbook, Section 3.2 – Windows, for further requirements.

E. Remove all deteriorated lumber pertaining to the window sill, frame and casing. Replace with materials of the same style, shape and design as closely as possible.

F. Replace all broken, cracked, scratched, or clouded glass.

G. Install or replace all broken or missing window locks, bar lifts, slides and springs.

H. Repair any area affected by window repair to match the surrounding finish.

I. All windows shall have screens.

J. WINDOW GUARDS – Replace existing – Install security guards (burglar bars) on the interior of all windows. The security guards are to be the full size of the window and installed with proper accessories. At least one window in every bedroom needs to have a fire release installed.

1.2 BASIS FOR REPLACEMENT

A. If all windows are not consistent in style the Contractor shall remove and replace the windows necessary to match the greater existing window style, with the requirements set forth in this section.

B. If a window does not create an air tight seal, or is cloudy the Contractor shall remove and replace to match the other existing windows, with the requirements set forth in this section.

PART 2 - PRODUCTS

2.1 VINYL WINDOWS

A. Window Types: The following types, as encountered in the field.

1. Casement.
2. Single or Double hung.
3. Horizontal sliding
4. Fixed.

B. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440.

1. Performance Class: **R**
2. Performance Grade: **20**
3. Condensation-Resistance Factor: **45** per AAMA 1503.
4. **Thermal Transmittance: Whole-window U-factor not more than 0.55 Btu/sq. ft. x h x deg F at 15-mph wind velocity and winter temperatures per NFRC 100.**
5. **Solar Heat-Gain Coefficient: Whole-window SHGC not more than 0.30 per NFRC.**

C. Trim: Provide indicated trim, matching material and finish of frame members.

D. Provide prefabricated bay window units as indicated.

E. Provide push-bar operators or gear-type rotary operators with folding handles for casement windows.

F. Equip units with charcoal-gray, coated-aluminum mesh insect screens at operable sashes.

G. Equip units with removable grilles as indicated, attach to inside face of each lite.

H. Window Color: White, Bronze, Beige, Brown, Gray, and/or to match existing.

I. Glaze units with clear, low-e coated, sealed insulating glass, complying with Division 08 Section "Glazing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather tight construction.

C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

D. Clean glass and vinyl surfaces immediately after installing windows. Remove nonpermanent labels from glass surfaces.

E. Install Screens

3.2 ALTERNATIVE

A. ARCHITECTURAL WINDOW FILM

1. If the NSP Construction Manager determines that the existing windows are in good working condition and have years of useful life remaining, then he/she may recommend that the Developer/Contractor install an architectural window film on the inside of the window in lieu of installing new windows that meet the specifications outlined in section 2.1,B above.

2. The film shall be equivalent to the following minimum specifications:

a.	**Total Solar Transmittance**	**34%**
b.	**Total Solar Reflectance**	**23%**
c.	**Total Solar Absorbance**	**43%**
d.	**Winter U-Value**	**1.06**
e.	**UV Rejection**	**99%**
f.	**Total Solar Energy Rejected**	**50%**

3. Recommended Manufacturer: SunTek Window Films, 345 Beaver Creek Drive, Martinsville, VA 24112. www.suntekfilms.com

a. Recommended Product: SymphonyDS – SYDS50 Dual-Reflective

END OF SECTION 085313

SECTION 086200 - UNIT SKYLIGHTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Provide AAMA-certified unit skylights with an attached label.

PART 2 - PRODUCTS

2.1 SKYLIGHTS

A. Type: Self-flashing with integral curb.

B. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440.

1. Performance Class and Grade: Minimum R-20.
2. Performance Class and Grade: Minimum C-35.
3. Performance Class and Grade: Minimum HC-40.

2.2 MATERIALS

A. Aluminum: ASTM B 209 sheet; ASTM B 221 extrusions.

B. Surface-Burning Characteristics of Plastic Glazing: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing indicated below:

1. Self-Ignition Temperature: 650 deg F or more when tested per ASTM D 1929.
2. Smoke-Developed Index or Smoke Density: 450 or less when tested per ASTM E 84 or 75 or less when tested per ASTM D 2843.
3. Relative-Burning Characteristics: Minimum Class CC2 according to the IBC.

C. Acrylic Glazing: ASTM D 4802, Finish 1 (smooth or polished), Type UVF (UV absorbing).

1. Single-Glazing Profile: Developer’s decision.

2. Double-Glazing Profile: Developer’s decision.
   a. Outer Glazing Color: Developer’s decision.

D. Polycarbonate Glazing: Extruded sheets, UV resistant, and burglar resistant per UL 972.

1. Single-Glazing Profile: Developers decision.

   a. Single-Glazing Color: Developers decision.

2. Double-Glazing Profile Developers decision.

a. Inner Glazing Color: Developers decision.
b. Outer Glazing Color: Developers decision.

2.3 FABRICATION

A. Factory assembled units with extruded-aluminum glazing retainers, gaskets, self-contained flashing, and integral gutters with weeps for condensation control.

B. Integral Curb: Extruded-aluminum or Vinyl, self-flashing type.

1. Height: Minimum 8 inches**.**
2. Construction: Single or Double wall.

C. Prefabricated Curb: As specified in Division 07 Section "Roof Accessories."

D. Thermal Break: Fabricate unit skylights with thermal barrier separating interior metal framing from materials exposed to outside temperature.

E. Aluminum Finish: Developers choice.

1. Color: Developers choice.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in AAMA 1607 and with manufacturer's written instructions for installing unit skylights.

B. Isolate metal surfaces in contact with incompatible metal or corrosive substrates, including wood, with bituminous coating on concealed metal surfaces.

C. Set unit skylight flanges in thick bed of roofing cement to form a seal unless otherwise indicated.

D. Where cap flashing is indicated, install to produce waterproof overlap with roofing or roof flashing. Seal with thick bead of mastic sealant except where overlap is indicated to be left open for ventilation.

END OF SECTION 086200

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated.

B. All bedrooms and bathrooms shall have privacy locks; all other doors shall have passage locks.

C. All front entry doors shall have a decorative handle set and dead-bolt. All other exterior doors shall have a keyed entry lock and single cylinder dead-bolt.

D. Front entry door shall have a door viewer and knocker.

1.2 BASIS FOR REPLACEMENT

A. If any door hardware does not function as intended nor does not all match the Contractor shall remove and replace in accordance with the specifications outlined below.

PART 2 - PRODUCTS

2.1 HARDWARE

A. Hinges:

1. Stainless-steel (preferred) hinges with stainless-steel pins for exterior.
2. Non-removable hinge pins for exterior exposure.
3. A minimum of 3 hinges for all doors regardless of thickness. However, 4 hinges required for doors more than 90 inches in height.
4. Hinges must match finish of Door knob and/or Lock sets.

B. Locksets and Latch-sets:

1. ANSI/BHMA A156.2, Grade 2 for bored locks and latches.
2. ANSI/BHMA A156.5, Grade 2 or 3 for auxiliary locks.
3. Knobs and Lever handles on locksets and latch sets.

C. Key locks to Owner's new master-key system.

1. Cylinders with SIX-pin tumblers minimum.

D. Provide wall stops or floor stops.

E. Provide hardware finishes as follows:

1. Hinges: Match finish of lock/latch set.
2. Locksets: Stainless\Nickel brushed finish prefered.
3. Other Hardware: Match finish of lockset/latch set.

F. NSP – RECOMMENDATIONS

1. KWIKSET in a Satin Chrome Finish

a. Handleset – Chelsea
b. Deadbolt – 780 Series Single Cylinder
c. Keyed Entry – Lido Lever
d. Privacy – Lido Lever
e. Passage – Lido Lever
f. SEE ATTACHED SHEET

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

END OF SECTION 087100

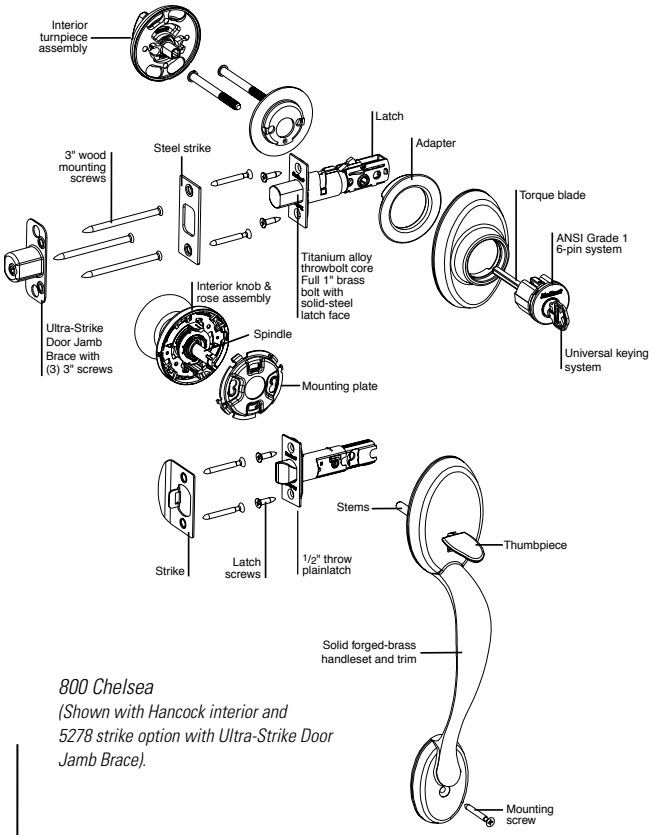
NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kwikset
Model # 800 Chelsea
Description: Handset with Single Cylinder Deadbolt, 6 pin and Reversible

HANDLESET
Specifications

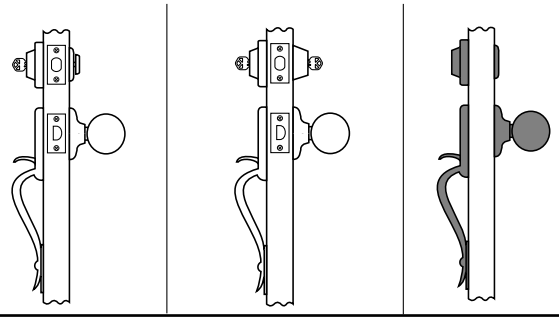
ULTRAMAX HANDLESET

Door Prep	Deadbolt Cross Bore: 2-1/8" or 1-1/2" Handleset Cross Bore: 2-1/8" Edge Bore: 1" Latch Face: 1" x 2-1/4"	
Backset	Deadbolt:	Adjustable to 2-3/8" or 2-3/4".
	Handle:	Adjustable to 2-3/8" or 2-3/4".
Door Thickness	1-3/4" doors standard. 2-1/4" doors optional. Not designed for use on 1-3/8" doors.	
Cylinder	6-pin. 5-pin optional.	
Faceplate	1" x 2-1/4". Specify round corner, square corner or drive-in.	
Strikes	Deadbolt:	1-1/4" x 3-5/8". Specify round corner or square corner.
	Handle:	2-1/4" full lip. Specify round corner or square corner. Other options available.
Bolt	Deadbolt:	Brass bolt, Full 1" throw, Titanium alloy roller pin.
	Handle:	1/2" throw. Nickel plated.
Door Handing	Reversible for right- or left-hand doors. Specify handing when ordering all levers as interior trim for exterior doors.	
ADA	N/A	
UL	N/A	



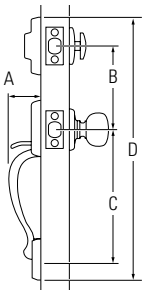
800 Chelsea
(Shown with Hancock interior and 5278 strike option with Ultra-Strike Door Jamb Brace).

FUNCTIONS



Model	800	801	802
Function	Handleset with Single Cylinder Deadbolt	Handleset with Double Cylinder Deadbolt	Dummy Handleset with Dummy Deadbolt
Description	Latchbolt operated by thumbpiece outside and grip inside. Deadbolt operated by key outside and thumbturn inside.	Latchbolt operated by thumbpiece outside and grip inside. Deadbolt operated by key both sides.	Handle and grip act as a pull only. For inactive leaf of double doors. No operation.

DIMENSIONS



Design	A	B	C	D
Amherst®	3"	5-1/2"	8-13/32"	18-23/32"
Arlington®	2-17/32"	5-1/2"	11"	19-1/16"
Chelsea®	2-5/32"	5-1/2"	9-11/16"	18-1/2"
Hawthorne®	2-7/8"	5-1/2"	8-13/32"	17-9/16"
Shelburne®	2-7/8"	5-1/2"	8-13/32"	18-1/4"
Sheridan®	2-3/4"	5-1/2"	11"	18-9/16"
Wellington®	2-7/8"	5-1/2"	8-13/32"	18-15/16"

OPTIONS

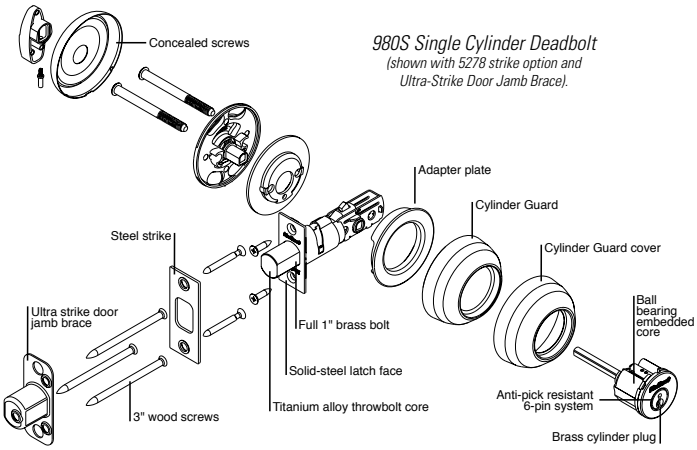
Description	See Page	Note
Split Finishes		Price is higher of two finishes.
Keying	58	Keyed Alike (KA) is standard.
2 1/4" thick door screw pack	60-61	
Faceplates		Included. Specify round corner, square corner or drive-in.
Strikes	51-52	Included. Specify round corner, square corner or full round.
Latches	47-50	Adjustable to 2 3/8" or 2 3/4". Specify round corner, square corner or drive-in.
Cylinder core & housing	54-55	

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kwikset
Model # 780 Single Cylinder Deadbolt
Description: Single Cylinder operated by key outside and thumb-turn inside. 6 pin
ANSI / BHMA – A156.2, Grade 2

980S-985S DEADBOLT

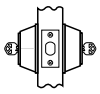
Door Prep	980S, 985S: Crossbore 2-1/8" or 1-1/2". Edge Bore 1". Latch Face 1" x 2-1/4". 982S, 984S: Crossbore 2-1/8". Edge Bore 1". Latch Face 1" x 2-1/4".
Backset	Adjustable to 2-3/8" or 2-3/4" standard.
Door Thickness	1-3/4" standard.
Cylinder	6-pin. Includes 3 anti-pick top pins.
Faceplate	1" x 2-1/4". Specify round corner, square corner or drive-in.
Strikes	1 x 3-5/8" Specify round corner or square corner. Other options available.
Bolt	Brass bolt, full 1" throw. Titanium alloy throwbolt core.
Door Handing	Reversible for right- or left-hand doors.
ANSI/BHMA	A156.5 Grade 1.
ADA	Interior turn piece meets 4.13.9 ADA requirements.
UL	Meets 3 hour fire rating for all UL functions.



980S Single Cylinder Deadbolt
(shown with 5278 strike option and Ultra-Strike Door Jamb Brace).

FUNCTIONS

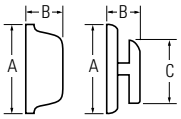
Single Cylinder: Deadbolt operated by key outside and thumbturn inside. UL listing standard on 982. – **980S, 982S** *E0151*



Double Cylinder: Deadbolt operated by key both sides. UL listing stanadard on 984. – **984S, 985S** *E0141*

Note: ANSI/BHMA functions are listed in italics.

DIMENSIONS

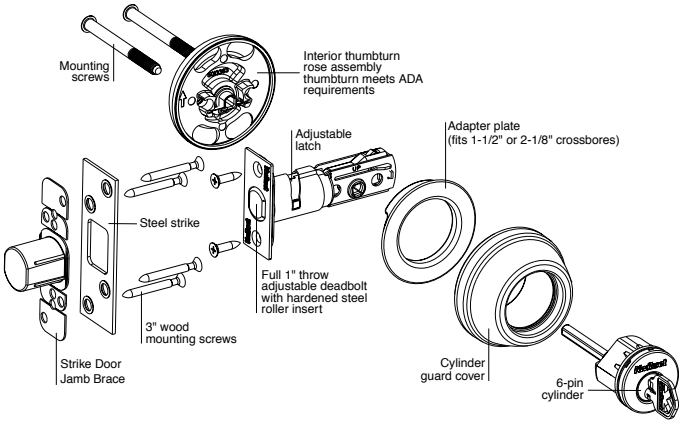


Design	A	B	C
980S Interior	2-9/16"	1-5/32"	1-13/16"
980S Exterior	2-5/8"	1-1/16"	
985S Interior	2-5/8"	1-1/16"	
985S Exterior	2-5/8"	1-1/16"	

780-785 DEADBOLT

Door Prep	780, 785: Crossbore 2-1/8" or 1-1/2". Edge Bore 1". Latch Face 1" x 2-1/4" 782, 784: Crossbore 2-1/8". Edge Bore 1". Latch Face 1" x 2-1/4"
Backset	Adjustable to 2-3/8" or 2-3/4" standard.
Door Thickness	1-3/8" – 1-3/4" standard. 1-7/8" – 2-1/4" optional.
Cylinder	6-pin removable core. 5-pin optional.
Faceplate	1" x 2-1/4". Specify round corner, square corner, or drive-in.
Strikes	1-1/4" x 3-5/8". Specify round corner or square corner. Other options available.
Bolt	1" throw. Stainless steel.
Door Handing	Reversible for right- or left-hand doors.
ANSI/BHMA	A156.5 Grade 2.
ADA	Interior turn piece meets 4.13.9 ADA requirements.
UL	Meets 3 hour fire rating for all UL functions.

780 Single Cylinder Deadbolt



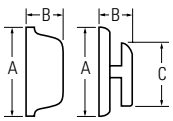
FUNCTIONS

Single Cylinder: Deadbolt operated by key outside and thumbturn inside. UL listing stanadard on 782. – **780, 782** *E0152*

Double Cylinder: Deadbolt operated by key both sides. UL listing standard on 784. – **784-785** *E0142*

Note: ANSI/BHMA functions are listed in italics.

DIMENSIONS



Design	A	B	C
780, 782 Interior	2-5/8"	1-1/16"	1-15/16"
780, 782 Exterior	2-5/8"	1-5/32"	
784, 785 Interior	2-5/8"	1-5/32"	
784, 785 Exterior	2-5/8"	1-5/32"	

NEIGHBORHOOD STABILIZATION PROGRAM

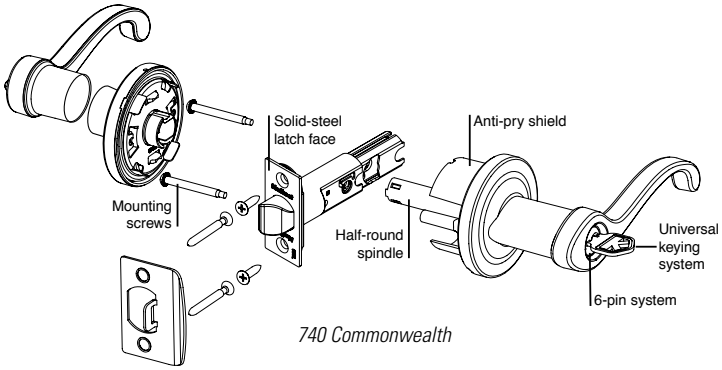
Brand: Kwikset
Model: Lido - Lever Style
Description: Keyed Entry, 6 pin

Brand: Kwikset
Model: Lido - Lever Style
Description: Passage/Hall/Closet

Brand: Kwikset
Model: Lido - Lever Style
Description: Privacy Bed/Bath

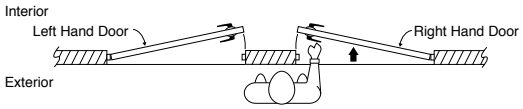
ULTRAMAX LEVERS

Door Prep	Cross Bore 2-1/8" Edge Bore 1" Latch Face 1" x 2-1/4".
Backset	Adjustable to 2-3/8" or 2-3/4".
Door Thickness	1-3/8" – 1-3/4" doors standard. 2-1/4" doors optional on 720 and 740 models.
Cylinder	6-pin removable core.
Faceplate	1" x 2-1/4". Specify round corner, square corner or drive-in.
Strikes	2-1/4" full lip. Specificy round corner or square corner. Other options available.
Bolt	1/2" throw. Nickel plated.
Door Handing	Specify handing when ordering entry and dummy functions.
ANSI/BHMA	A156.2 Grade 2.
ADA	Functions 720, 788 satisfy section 4.13.9. ADA requirement.
UL	N/A



740 Commonwealth

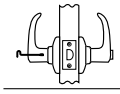
Door Handing



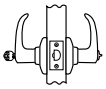
Right hand shown

FUNCTIONS

Passage/Hall/Closet: Both levers always free.
– **720** *F75*



Privacy/Bed/Bath: Both levers locked or unlocked by turnbutton inside. Outside lever unlocked by emergency key.
– **730** *F76*

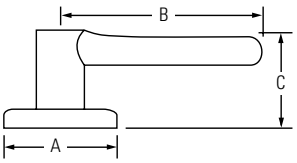


Keyed Entry Lever: Outside locked or unlocked by key outside or turnbutton inside.
– **740** *F82*

Half Dummy Trim, Surface Mounted: For doors where only a pull is required. No operation.
– **788**

Note: ANSI/BHMA functions are listed in italics.

DIMENSIONS



Design	A	B	C	C (Keyed)
Brooklane®	2-5/8"	4-3/16"	2-3/16"	2-7/8"
Commonwealth®	2-5/8"	3-5/8"	1-15/16"	2-11/16"
Pembroke™	2-5/8"	4-7/32"	2-7/16"	2-7/8"

OPTIONS

Description	See Page	Note
Split Finishes		Price is higher of two finishes.
Keying	58	Keyed Alike (KA) is standard.
2 1/4" thick door screw pack	60-61	
Faceplates		Included. Specify round corner, square corner or drive-in.
Strikes	51-52	Included. Specify round corner, square corner or full round.
Latches	47-50	Adjustable to 2 3/8" or 2 3/4". Specify round corner, square corner or drive-in.
Cylinder core & housing	54-55	

SECTION 092300 - GYPSUM PLASTERING

PART 1 - PRODUCTS

1.1 SECTION REQUIREMENTS

A. Repair all damaged wall areas through out the structure. Call for inspection prior to painting or covering wall surfaces.

B. On wood lath, remove all loose or dead non-keyed plaster. Remove all rotten wood laths. Nail all loose wood laths. Cut and install 1/8 inch flat rib "special mesh" metal lath securely. Apply base coat plaster leaving surface not less than 1/16 inch below adjacent surfaces. Allow base coat to dry at least 24 hours. Apply not less than 1/16 inch finish coat plaster. Apply in the same manner as on masonry walls. All plaster that is not true, smooth and flush with adjacent wall surfaces will be rejected and replaced at Contractors expense.

C. Point-up plaster and drywall around trim and other works. Cut out and patch defective and damaged plaster or drywall. Patching shall match existing work in texture and finish and at joints where plaster was previously applied. It should be blended without visual difference.

1.2 PERFORMANCE REQUIREMENTS

A. STC-Rated Assemblies: Where indicated, provide gypsum plaster assemblies tested for STC ratings per ASTM E 90 and classified according to ASTM E 413 by a qualified testing agency.

B. Fire-Resistance-Rated Assemblies: Where indicated, provide gypsum plaster assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.3 LATH

A. Expanded-Metal Lath: ASTM C 847, with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.

1. Diamond-Mesh Lath: Flat or Self-furring.

   a. Weight: 2.5 lb/sq. yd. for 16" centers (3.4 lbs/sq. yd. on ceilings).

2. Flat Rib Lath: Rib depth of not more than 1/8 inch.

   a. Weight: 2.75 lb/sq. yd. for 16" centers.

1.4 ACCESSORIES

A. Comply with material provisions in ASTM C 841 and with requirements indicated below; coordinate depth of accessories with thicknesses and number of plaster coats required:

1. Corner-rite: Fabricated from expanded-metal lath with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
2. Striplath: Expanded-metal lath with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
3. Cornerbeads: Small-nose style, fabricated from zinc or zinc-coated (galvanized) steel.
4. Casing Beads: Fabricated from zinc or zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
5. Control Joints: Fabricated from zinc or zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
6. Plastic Cornerbeads: Fabricated from high-impact PVC with perforated flanges.
7. Plastic Casing Beads: Fabricated from high-impact PVC with perforated flanges.
8. Plastic Control Joints: Fabricated from high-impact PVC, one-piece-type with perforated flanges and removable protective tape on plaster face.
9. Aluminum Trim: Extruded accessories of profiles and dimensions indicated on Drawings.

B. Bonding Compound: ASTM C 631.

C. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 841.

D. Sound Attenuation Blankets: ASTM C 665, Type I (unfaced mineral fiber).

E. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

1.5 GYPSUM PLASTER

A. Base-Coat Plasters: ASTM C 28/C 28M.

1. Lightweight Gypsum Ready-Mixed Plaster: With mill-mixed perlite aggregate.
2. Gypsum Neat Plaster: For use with job-mixed aggregates.
3. High-Strength Gypsum Neat Plaster: With a compressive strength of 2800 psi per ASTM C 472 for a mix of 100 lb of plaster and 2 cu. ft. of sand.

B. Finish-Coat Plasters:

1. Gypsum Gauging Plaster: ASTM C 28/C 28M.
2. Gypsum Ready-Mixed Finish Plaster: Manufacturer's standard, mill-mixed, gauged, interior finish.
3. High-Strength Gypsum Gauging Plaster: ASTM C 28/C 28M, with a compressive strength of 5000 psi per ASTM C 472 for a neat mix.
4. Gypsum Keene's Cement: ASTM C 61/C 61M.
5. Lime: ASTM C 206, Type S, special finishing hydrated lime.
6. Aggregates for Float Finishes: ASTM C 35, sand or perilite; graded per ASTM C 842.

C. Plaster Mixes: Comply with ASTM C 842 and manufacturer's written instructions for applications indicated.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Install lath and accessories according to ASTM C 841.

1. Partition Framing and Vertical Furring: Install flat diamond-mesh or flat rib lath.
2. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh or flat rib lath.
3. Curved-Ceiling Framing: Install flat diamond-mesh lath.
4. On Solid Surfaces, Not Otherwise Furred: Install self-furring, diamond-mesh lath.

B. STC-Rated Assemblies: Comply with ASTM C 919 for location of edge trim and closing off sound-flanking paths around or through assemblies.

C. Bonding Compound: Apply on unit masonry and concrete plaster bases.

D. Apply and cure plaster materials and finishes to comply with ASTM C 842. Apply minimum of two coats. Apply **troweled** finish coat.

END OF SECTION 092300

SECTION 092900 - GYPSUM BOARD

PART 1 - PRODUCTS

1.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

C. Repair all damaged wall areas through out the structure. Call NSP Construction Manager for inspection prior to painting or covering wall surfaces.

D. Point-up plaster and drywall around trim and other works. Cut out and patch defective and damaged plaster or drywall. Patching shall match existing work in texture and finish and at joints where plaster was previously applied. It should be blended without visual difference.

E. Repair all damaged ceiling areas throughout structure. Call NSP Construction Manager for inspection prior to painting or covering ceiling surfaces. Remove all loose and chipped paint and sand surface of semi-gloss or painted surfaces. Apply joint compound and/or tape to any subsurface cracks or nail pops and allow to dry overnight prior to painting.

F. Acceptable ceiling finish shall be double or single knockdown. Popcorn ceiling finish will not be permitted.

1.2 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints.

B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, with a minimum thickness of 1/2 inch, with manufacturer's standard edges. Regular type unless otherwise indicated**.**

C. Exterior Gypsum Soffit Board: ASTM C 931/C 931M or ASTM C 1396/C 1396M, with a minimum thickness of 1/2 inch, with manufacturer's standard edges. Regular type unless otherwise indicated.

D. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M or ASTM C 1396/C 1396M, with a minimum thickness of 1/2 inch. Regular type unless otherwise indicated.

E. Glass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, with a minimum thickness of 1/2 inch. Regular type unless otherwise indicated.

1. **Product: G-P Gypsum; Dens-Shield Tile Guard. – Shall be used at tub and shower surrounds.**

F. Cement Backer Units: ANSI A118.9.

1.3 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.

1. Provide corner-bead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges.
3. Provide control joints where indicated.

B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant primer.

C. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds. Use setting-type compounds at exterior soffits.
3. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
4. Cement Backer Unit Joint-Treatment Materials: Products recommended by cement backer unit manufacturer.

D. Acoustical Sealant for Exposed and Concealed Joints: Non-sag, paintable, non-staining latex sealant complying with ASTM C 834.

E. Sound-Attenuation Blankets: ASTM C 665, Type I (un-faced).

PART 2 - EXECUTION

2.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.

B. Install cement backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

F. Cement Backer Units: Finish according to manufacturer's written instructions.

G. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

H. Drywall of maximum practical length shall be used.

I. End joints shall be staggered.

J. All joints and internal angles shall be applied on outside corners.

K. Casing beads shall be applied at wall or ceiling openings.

END OF SECTION 092900

SECTION 093000 - TILING

PART 1 - PRODUCTS

1.1 SECTION REQUIREMENTS

A. Upon <u>NSP Program Manager Approval</u> provide and install ceramic floor tile. Lay out the floor tile as to minimize cutting of tiles. Locate cut tile where they will be least objectionable. Align joints in floor tile straight with walls to conform to patterns selected. All doorways shall have a marble thresh hold installed. The floor tile shall be grouted in accordance with proper standards. Match existing in size, color and style.

B. All showers and tub/shower combos shall be tiled with a minimum 4 inch x 4 inch tile. Additionally, the tile shall extend no less than sixty (72”) inches from the top of the tub/shower combo and no less than seventy-eight (78”) inches from the bottom of the shower unit. It shall be applied to ½ inch thick durarock or dens-shield.

C. EXISTING TILE – Clean and re-grout all ceramic tile, including around tub, on floor, and on wall wainscots. Tile shall be free of all soap build-up and all joints and cracks shall be re-grouted and free of all voids.

1.2 CERAMIC TILE

A. Ceramic tile that complies with Standard grade requirements in ANSI A137.1, "Specifications for Ceramic Tile."

B. Glazed or unglazed, vitreous or impervious natural clay tile.

1. Module Size: 6 inch by 6 inch for bath\shower\floor areas (floors must be minimum of 12 inch x 12 inch).
2. Surface: Slip resistant, with abrasive admixture for floors.
3. Finish: As selected by the Developer.
4. Color and Pattern: As selected by the Developer.
5. Grout Color: As selected by the Developer.
6. Trim Units: Coordinated with sizes and coursing of adjoining flat tile and matching characteristics of adjoining flat tile:

    a. Base: Coved.
    b. Base Cap for Thin-Set Mortar Installations: Surface bullnose.
    c. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose.
    d. External Corners for Thin-Set Mortar Installations: Surface bullnose.
    e. Internal Corners: Cove.
    f. Internal Corners: Field-butted square corners. For coved base and cap, use angle pieces designed to fit with stretcher shapes.

C. Accessories: Provide vitreous china accessories of type and size indicated, suitable for installing by same method as adjoining wall tile.

1. One soap holder with grab handle for each shower and tub indicated.
2. One towel bar with for each tub/shower indicated.
3. Color and Finish: Match adjoining glazed wall tile, bright glaze.
4. **See ATTACHED sheet**

1.3 STONE THRESHOLDS

A. Marble thresholds complying with ASTM C 503 fabricated to be not more than 1/2 inch above adjoining finished floor surfaces, with transition edges beveled on a slope of no greater than 1:2.

1. Color: White
2. Finish: Polished.

1.4 INSTALLATION MATERIALS

A. Cement Backer Units: ANSI A118.9 or ASTM C 1325, 1/2 inch thick.

B. Fiber-Cement Underlayment: ASTM C 1288, 1/2 inch thick over 15# felt.
1. **The NSP Construction Manager shall inspect the underlayment before the installation of the floor covering.**
2. **Underlayment must be properly fitted and nailed down securely prior to installation of floor covering.**
3. **Buckling or ridges in underlayment must be repaired before the flooring is installed.**

C. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For installations indicated below, follow procedures in ANSI's "Specifications for the Installation of Ceramic Tile" for providing 95 percent mortar coverage.

a. Exterior tile floors.
b. Tile floors in wet areas.
c. Tile swimming pool decks.
d. Tile floors in laundries.
e. Tile floors composed of tiles 8 by 8 inches or larger.
f. Tile floors composed of rib-backed tiles.

B. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to

electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

C. Lay tile in grid pattern unless otherwise indicated. Align joints where adjoining tiles on floor, base, walls, and trim are the same size.

D. Install cement backer units and fiber-cement underlayment and treat joints according to ANSI A108.11.

E. Where required, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.

F. Install waterproofing to comply with ANSI A108.13.

G. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

H. Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).

I. Exterior Floor Tile Installation Method(s):

1. Exterior Patios and Walkways over Concrete: TCA F102 (thin-set mortar) or TCA F102 (thin-set mortar over waterproof membrane) as required.

J. Exterior Wall Tile Installation Method(s):

1. TCA F102 (thin-set mortar) or TCA F102 (thin-set mortar over waterproof membrane) as required.

K. Interior Floor Tile Installation Method(s):

1. Over Concrete Subfloors: TCA F111 (cement mortar bed with cleavage membrane).
2. Over Waterproof Membranes on Concrete Subfloors: TCA F121 (cement mortar bed) or TCA F122 (thin-set mortar).
3. Over Wood Subfloors: TCA F141 (cement mortar bed with cleavage membrane).
4. Over Waterproof Membranes on Wood Subfloors: TCA F121 (cement mortar bed).

L. Interior Wall Tile Installation Method(s):

1. Over Concrete and Masonry: TCA W202 (thin-set mortar) or TCA W211 (cement mortar bed, bonded to concrete or masonry).
2. Over Wood Studs or Furring: TCA W221 (cement mortar bed on metal lath) or TCA W243 (thin-set mortar on gypsum board) or TCA W244 (thin-set mortar on cement backer units or fiber cement underlayment).
3. Over Metal Studs or Furring: TCA W221 (cement mortar bed on metal lath) or TCA W243 (thin-set mortar on gypsum board) or TCA W244 (thin-set mortar on cement backer units or fiber cement underlayment).
4. Bathtub Wall Installations, Wood or Metal Studs or Furring: TCA B413 with thin-set mortar (thin-set mortar on water-resistant gypsum board).

5. Bathtub/Shower Wall Installations, Wood or Metal Studs or Furring: TCA B412 (thin-set mortar on cement backer units or fiber cement underlayment).
6. Shower Receptor and Wall Installations, Concrete or Masonry: TCA B414 (cement mortar bed).] or .[TCA B421 (thin-set mortar over waterproof membrane).
7. Shower Receptor and Wall Installations, Wood or Metal Studs or Furring: TCA B415 (thin-set mortar on cement backer units or fiber cement underlayment).

END OF SECTION 093000

SECTION 096400 - WOOD FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Hardwood Flooring: Comply with NOFMA grading rules for species, grade, and cut.

1. Certification: Provide flooring that carries NOFMA grade stamp on each bundle or piece.

B. Maple Flooring: Comply with MFMA grading rules for species, grade, and cut.

1. Certification: Provide flooring that carries MFMA mark on each bundle or piece.

C. Softwood Flooring: Comply with WCLIB grading rules for species, grade, and cut.

D. Forest Certification: Provide wood flooring produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

E. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products for further requirements.

PART 2 - PRODUCTS

2.1 FIELD-FINISHED WOOD FLOORING

A. Solid-Wood Strip and Plank Flooring: Kiln dried and as follows:

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edge Style: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.
7. Finish: Sand and re-finish.

B. Solid-Wood Parquet Flooring: As follows:

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edge Style: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.

C. Engineered-Wood Strip and Plank Flooring: HPVA EF.

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edge Style: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.
7. Finish: Sand and re-finish.

2.2 FACTORY-FINISHED WOOD FLOORING

A. Solid-Wood Strip and Plank Flooring: Kiln dried and as follows:

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edge Style: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.
7. Finish: Sand and re-finish.

B. Solid-Wood Parquet Flooring: As follows:

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edge Style: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.
7. Finish: Sand and re-finish.

C. Engineered-Wood Strip and Plank Flooring: HPVA EF.

1. Species: Match existing Grade: Match existing
2. Thickness: Match existing
3. Construction: Match existing
4. Width: Match existing
5. Length: Match existing
6. Edges: Match existing
7. Finish: Sand and re-finish.

D. Engineered-Wood Parquet Flooring: HPVA EF.

1. Species: Match existing.
2. Grade: Match existing.
3. Thickness: Match existing.
4. Edges: Match existing.
5. Pattern: Match existing.
6. Size: Match existing.

7. Finish: Sand and re-finish.

2.3 FINISHING MATERIALS

A. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products for further requirements for pertaining to finishes.

B. Urethane Finish System: Complete solvent-based, oil-modified or water-based system of compatible components that is recommended by finish manufacturer for application indicated.

1. Stain: Penetrating and nonfading type.

2. Floor Sealer: Pliable, penetrating type.
3. Finish Coats: Formulated for multicoat application on wood flooring.

C. Wood Filler: Formulated to fill and repair seams, defects, and open-grain hardwood floors; compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved samples, provide pigmented filler.

2.4 ACCESSORY MATERIALS

A. Vapor Retarder: ASTM D 4397, polyethylene sheet not less than 6.0 mils thick.

B. Asphalt-Saturated Felt: ASTM D 4869, Type II.

C. Wood Flooring Adhesive: Mastic recommended by flooring and adhesive manufacturers for application indicated.

D. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

B. Provide expansion space at walls and other obstructions and terminations of flooring of not less than 3/4 inch .

C. Felt Underlayment: Where strip or plank flooring is nailed to solid-wood subfloor, install flooring over a layer of asphalt-saturated felt.

D. Vapor Retarder: Where wood flooring is nailed to sleepers over concrete, install flooring over a layer of polyethylene sheet with edges overlapped over sleepers and turned up behind baseboards or installed on concrete slabs, install a layer of polyethylene sheet according to flooring manufacturer's written instructions.

E. Solid-Wood, Strip and Plank Flooring: Blind nail or staple flooring to substrate.

1. Plank Flooring: For flooring of face width more than 3 inches, install countersunk screws at each end of each piece in addition to blind nailing. Cover screw heads with wood plugs glued flush with flooring and [install not less than 2 countersunk nails at each end of each piece, spaced not more than 16 inches along length of each piece, in addition to blind nailing. Fill holes with matching wood filler.

F. Solid-Wood Parquet Flooring: Set in adhesive.

G. Engineered-Wood Flooring: Set in adhesive, Nail or Install floating floor.

3.2 SANDING AND FINISHING

A. Machine-sand flooring to remove offsets, ridges, cups, and sanding-machine marks that would be noticeable after finishing. Vacuum and tack with a clean cloth immediately before applying finish.

B. Fill open-grained hardwood.

C. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and two finish coats.

1. Apply stains to achieve an even color distribution matching approved Samples.

END OF SECTION 096400

SECTION 096516 - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Provide and install new vinyl floor covering in kitchen, bath, and foyer areas. Only <u>Armstrong Vinyl flooring - "Strata Max Better Life"</u> shall be used. Seams shall be held to a minimum.

B. The underlayment must be inspected by the NSP Construction Manager before the installation of the floor covering.

C. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products for further requirements.

PART 2 - PRODUCTS

2.1 RESILIENT SHEET VINYL FLOOR COVERING

A. Armstrong Vinyl flooring, "StrataMax Better Life."

B. Product #: X2526

C. Color and Pattern: Limestone Pebble Beige; Low Gloss

D. Sheet Width: 6 feet x 12 feet.

E. Minimum 70-mil gauge

F. 12 year residential warranty

G. Available at Flooring America. Contact John Runion for Special NSP pricing at 904-635-1579.

PART 3 - EXECUTION

3.1 INSTALLATION

A. See ATTACHED Manufacturers' Installation Instructions.

B. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

C. Unroll sheet floor coverings and allow them to stabilize before cutting and fitting.

D. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.

E. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in substrates.

END OF SECTION 096516

QUOTE

Flooring America, Inc.

INVOICE # [100]
DATE: JULY 20, 2009

619 Cassat Avenue, Jacksonville, FL 32205
Phone 904.635.1579 c 904.387.9715 f
jrunion@flooringamericausa.com
John Runion

EXPIRATION DATE: 9/30/09 CARPET
12/31/09 VINYL

TO

Approx. 500 homes over a 12-36 month period.

"NSP", Neighborhood Stabilization Project.
Omega Allen, Project Manager
904.255.8253
214 N. Hogan St.
Ed Ball Building 8th Floor
Jacksonville, Fl. 32202

Customer ID: NSP

SALESPERSON	JOB	PAYMENT TERMS	DUE DATE
John Runion	NSP Project	COD	COD

QTY	DESCRIPTION	UNIT PRICE	LINE TOTAL
Carpet		Rolls Only	
	Product: Manufacture Shaw Industries. Style #52N09 Full of Life. Color #100 Sahara Buff. Textured plush FHA approved with 100% BCF nylon fiber and a 25 oz face weight. R2X Soil and Stain protection, 5-year quality assurance warranty and Shaw Green Edge since carpet is recyclable.	.90 sf. or $8.10 sy.	
Padding			
	Product: Manufacture Carpenter. Viscobond Premium 8lb 7/16" Spill guard protected bonded pad. Life of the House Warranty. Recyclable padding.	.40 sf. or $3.60 sy.	
Vinyl			
	Product: Manufacturer Armstrong. 12 ft wide. Style Strata Max Better Grade. Color #X2526 Limestone Pebble Beige. 70-mil gauge with clean sweep wear layer, Tough Guard II Structure and 12-year residential warranty. 24" pattern repeat. This product can be installed with a full spread or floating installation process.	$1.25 sf. or $11.25 sy.	
Vinyl Supplies	Armstrong Adhesive S288 for full spread installation. 1 gallon covers approx. 250 to 300 sf. Cost approx. .12 sf. Must be sold by the gallon.	1 Gallon $29.99 ea.	
Vinyl Supplies	Armstrong Acrylic Double face tape for floating floor. #7202 Duct branch 2" x 50' lf.	1 Roll $15.00 ea.	
Vinyl Supplies	Armstrong Seam Sealer #SF64. Covers approx. 100 lf.	1 Unit $13.50 ea.	

General Intent and Guidelines	1. Flooring America, Shaw industries and Cain and Bultman (Armstrong Distributors) have negotiated special pricing to make available products to approved NSP contractors. NSP office shall notify Flooring America and/or NSP contractor shall notify Flooring America that they are approved. Also, the contractor shall upon purchase provided the job address. Flooring America will keep a register of jobs sold that include contractor, product sold, quality sold, date sold and job location. This information will be made available to NSP and the Manufactures. 2. Flooring America of Jacksonville will inventory one color of the carpet, one color of the vinyl and certain vinyl supplies at its 619 Cassat Ave. location. Approx. 200 yds of carpet and 200 yds of vinyl will be kept on site. The purpose is to make the inventory available to the authorized contractors involved in the NSP project. This helps reduce the price since we are stocking rolls vs. cuts. Also, it allows for quicker service. If several orders are placed at one time then we will order additional inventory, which usually takes approx. 10 days. General intent is to have inventory available at all time and especially with 10-day notice. Contractor can purchase the same day (during normal business hours) but to ensure availability a 10-day notice would be helpful. 3. Flooring America will cut want ever size is needed for the contractor. Contractor shall be responsible for their measurements. Contact John Runion or Layne Beddard. The prices established in the quote will be the selling price to all contractors approved by NSP. 4. Carpet Prices good for through 9/30/09 and vinyl through 12/31/09. There after the only price change will be subject to an industry wide price change. If a price change we will notify NSP 30 days in advance. Prices, if changed, are usually 3 – 5 % annually. Also, near the price guaranteed expiration dates Flooring America maybe able to negotiate new price guaranteed terms. 5. Flooring America cannot guarantee the product selected will be available in the future by the manufacture. If a product is dropped Flooring America will notify NSP and a similar alternative will be selected within 30 days of the drop. 6. Flooring America will require payment from the contractors upon picking up the material. COD terms unless special arrangements are negotiated with an individual contractor. Flooring America has the right to establish terms for some contracts and not others based on their credit history. 7. Flooring America and NSP are under no obligation. This is the general intent by all parties involved to help facilitate the NSP project. 8. Contractors that purchase from Flooring America are subject to the normal sale contractual terms and conditions.		

APPLIABLE SALES TAX	7 %
TOTAL	See Above

Standard Store Regular Pricing:

a. Retail carpet $1.59 sf and Contract .1.09 sf
b. Retail vinyl $2.09 sf and Contract $1.49 sf
c. Retail padding .75 sf and Contract .50 sf

StrataMax Installation System

General Information

StrataMax flooring can be installed by two installation methods. It is designed as a lay flat structure when installed by the modified loose lay installation method using acrylic double-face tape under seams. It can also be installed by the traditional full spread method using S-288 adhesive over approved substrates and underlayments. The modified loose lay method requires that the flooring be cut 1/8" to 3/16" away from all vertical surfaces such as walls, cabinets, pipes, etc. This gap must then be filled with a good quality siliconized or acrylic caulk.

- Transport and store flooring rolled face out on a cardboard tube, do not kink or distort.
- Always roll flooring face out until ready to install.
- Do not use products containing petroleum solvents or citrus oils to prepare substrates.
- Just prior to installation, lay flooring out flat to acclimate to conditions and allow the roll-up stresses to relax.
- Flooring and room temperature should be a minimum of 65 degrees F (18 degrees C) for 48 hours before installation, during installation, and 48 hours after installation. Minimum 55 degrees F (13 degrees C) thereafter.
- Plan layout for minimum number of seams.
- Accurately measure length and width of room. Included recessed areas/doorways.
- Allow an extra 1-1/2" of flooring on each end for trimming.
- If more than one piece of flooring is needed, allow for correct pattern match at seam.

Suitable Substrates

All substrates listed below must be properly prepared and meet certain requirements. There may be exceptions and special conditions for these substrates to be suitable for StrataMax flooring installation. (Refer to the Subfloors and Underlayment section of the Armstrong Guaranteed Installation Systems manual, F5061, for more details. Or visit www.floorexpert.com.)

- Concrete (on all grade levels)
- Approved suspended wood underlayments
- Single-layer, fully adhered, existing resilient floors
- Ceramic tile, terrazzo, marble
- Polymeric poured (seamless) floors

StrataMax, because of its unique structure and design, can also be installed directly over suspended single-layer wood subfloors such as plywood or oriented strand board (OSB) **when using the modified loose lay method.** The subfloor system must be designed to meet or exceed applicable building codes with a minimum of 18" well-ventilated air space below. The subfloor panels should have a smooth, sanded face and show no swelling of edges or surface due to exposure to weather conditions or construction traffic. The panels can not be contaminated by staining agents. **Otherwise, an additional 1/4" or thicker underlayment is recommended.**

Single-layer wood subfloors increase the potential for staining from the panel components, coated nails, construction adhesives, spills, overspray and show-through from texture and mechanical or water damage when resilient flooring is installed directly over them.

Armstrong cannot be responsible for:

- joint or texture show-through
- tunneling and ridging over board joints
- discoloration from stain sources in the panel, regardless of the type of panel used
- problems caused by local climate conditions, basement wall and subfloor construction, or improper installation

Do not install over:

- Particleboard, or waferboard panels
- Existing resilient tile floors that are below grade
- Existing cushion-backed vinyl flooring
- Carpet
- Hardwood flooring that has been installed directly over concrete

Job Conditions

- All substrates must be sound, dry, clean, smooth, and free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, other foreign matter and contaminates that could cause staining or interfere with a good bond.
- In renovation or remodel work, remove any existing adhesive residue***** so that 100% of the overall area of the original substrate is exposed.
- When installing over an existing resilient floor, use S-199 One-Part Embossing Leveler or S-194 Patch, Underlayment & Embossing Leveler/S-195 Underlayment Additive to fill and smooth any embossing in the old floor. This is particularly important when fully adhering StrataMax flooring.
- The area to receive resilient flooring and the flooring materials and adhesives should be maintained at a minimum of 65 degrees F (18 degrees C) for 48 hours before installation, during installation, and 48 hours after completion. Maintain a minimum temperature of 55 degrees F (13 degrees C) thereafter.
- Verification must be made that subfloor moisture levels do not exceed acceptable limits when installing flooring over concrete subfloors. Conduct a Calcium Chloride Test to measure subfloor vapor transmission levels prior to installation. Armstrong recommends a maximum acceptable moisture emission level of 3lbs/1000 sq.ft/24 hrs. for StrataMax flooring. If subfloor moisture vapor transmission levels exceed the recommended limit, the concrete must be allowed to dry out prior to installing the floor.
- Radiant heated substrates must not exceed a maximum surface temperature of 85 degrees F (29 degrees C)

*** WARNING: EXISTING IN-PLACE RESILIENT FLOOR COVERING AND ASPHALTIC ADHESIVES. DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVE, OR OTHER ADHESIVE.**

These **existing in-place** products may contain **asbestos fibers** and/or **crystalline silica.**

Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.

Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm.

Unless positively certain that the existing in-place product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern removal and disposal of material.

See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for instructions on removing all resilient floor covering structures or contact your retailer or Armstrong World Industries, Inc. 1 800 233 3823

The floor covering or adhesive in this package does NOT contain asbestos.

Room Preparation

Remove baseboard, quarter-round moldings, wall base, appliances and furniture from room. For best results, the decorative trim and jamb moldings at doorways should be undercut to allow flooring to slip underneath. After preparation work, be sure to sweep and vacuum the entire work area to remove all dust and debris. Check the substrate one last time for smoothness, cleanliness, loose boards, or squeaks. Correct as necessary. Installation on stairs is **not** recommended.

Procedure

StrataMax flooring is designed for modified loose lay installation using acrylic double-face tape only at seams and other critical areas. In bathrooms, tape should be used to secure the flooring in front of tubs and shower enclosures. Other critical areas could be a doorway where trim cannot be used to cover an exposed edge or an area in the kitchen with a heavy movable appliance. **Do not use the tape around the entire perimeter of the room.**

StrataMax flooring should be cut approximately 1/8" to 3/16" away from all vertical surfaces such as walls, cabinets, pipes, etc. This will prevent any fullness around the perimeter of the room and also provide a small gap that must be filled with a good quality siliconized or acrylic caulk, even in areas where trim moldings or vinyl wall base will be put on top. This will prevent moisture from getting beneath the new flooring. StrataMax flooring should not be cut full or snug. Make sure all areas are lying flat before applying caulk in the perimeter gap.

Seams

If a seam is required in a primary part of the room, it should be made after the product has been rough cut
and is lying flat in proper position in the room but prior to final cutting and fitting around the perimeter. Overlap the selvage edges of both pieces of flooring so that the proper pattern match is achieved. Then, carefully fold back the seam edges without shifting the sheets, so that a strip of scrap material can be placed under the product where the seam will be cut. This will save your knife blade and prevent scoring the subfloor or old flooring directly beneath the seam. Reposition the two edges, ensuring a good pattern match.

[Seams should be double-cut. Straight edge and butt method of seaming is not recommended for this product. The seams of StrataMax flooring should not be stretched or compressed to obtain pattern match as it will create buckles in the flooring adjacent to seams.]

Use a sharp utility knife with a straightedge as a guide to double-cut through both pieces of material. Most patterns will have a grout line where the seam should be cut. Hold the knife blade vertical, at a 90 degree
angle to the floor when cutting the seam, to ensure a straight, clean cut.

Fold back one side of the cut seam and remove the scrap material and selvage. Mark a pencil line on the substrate along the seam to be used as a reference for positioning the acrylic double-face tape. Install the acrylic double-face tape centering it under the seam. Use a hand roller or clean cloth to press it against the substrate. Peel the release layer off of the tape and begin to carefully reposition the two sides of the seam on top of the tape. (On long seams it may be easier to just remove a portion of the release layer at a time until you are sure the seam is falling back into position properly.) When both sides of the seam are properly positioned on top of the tape, use a hand roller to ensure a complete bond.

Use only acrylic double-faced tape intended for use with vinyl flooring. Ordinary carpet tapes may "read" through and also cause vinyl discoloration.

Seams must be coated using the S-564 Low Gloss Seam Coating Kit at the completion of the installation. Follow directions included in the kit and protect the coating from traffic until cured.

Note: *Stratamax flooring can also be installed as a traditional, fully adhered floor using S-288 Residential Flooring Adhesive.* ***Do not use fully adhered method directly over single-layer wood subfloor systems.*** *S-288 is applied with the fine notching of an Armstrong trowel having notches 1/32" deep x 1/16" wide x 5/64" apart. Over* ***nonporous surfaces*** *such as existing resilient flooring and embossing levelers, allow enough open time for the adhesive to dry until tacky with no transfer to the finger (Dry-to-Touch) before placing the flooring into it. Over* ***porous surfaces*** *such as concrete and wood, allow the adhesive enough time to thicken slightly but not to become completely dry to the touch.*

Finishing the Installation

Replace moldings and install vinyl wall base as needed. Leave a slight clearance between the flooring and the bottom of the molding. Nail molding into the wall, not into the floor.

When replacing appliances, or whenever moving heavy furniture over the flooring, place a wood panel under the object. Without moving the panel, slide or roll the object over it. Follow with additional panels as needed. This prevents scratches, tears or buckling of the flooring material.

Care and Maintenance Instructions

Proper care and maintenance will help ensure your floor always looks its best. Simply follow our maintenance and prevention steps outlined below.

Immediately After Installation

- For 8 hours after seam application, protect the sealed seams on your flooring. This will ensure proper seam bond. If your seams are disturbed before they're dry, permanent damage may result.

Proactive Protection for Your Floor

- When moving appliances or heavy furniture, it is always wise to lay a plywood panel on your floor and "walk" the item across it. This protects your floor from scuffing and tears.
- Use floor protectors, such as Armstrong Floor Protectors, on furniture to reduce indentation. As a general rule of thumb, the heavier the item, the wider the floor protector needed.
- Place a walk-off mat at outside entrances to reduce the amount of dirt brought into your home. We strongly recommend mats without a latex or rubber backing since these backings can cause permanent discoloration.
- All Armstrong floor care products have been specifically developed to care for Armstrong floors. You may purchase Armstrong floor care products at your local flooring retailer.

Caring for Your Floor

- Sweep or vacuum regularly to remove loose dirt which can scratch your floor. NOTE: We do not recommend vacuums that have a beater bar since it can visibly damage your flooring surface. Additionally, we do not recommend electric brooms with hard plastic bottoms with no padding as use may result in discoloration and deglossing.
- Wipe up spills as soon as possible. Remove dried spills with Armstrong New Beginning Deep Cleaning Floor Stripper on a clean white cloth and rinse. Never use highly abrasive scrubbing tools on any resilient floor.
- Wash your floor regularly with Armstrong Once 'n Done Resilient & Ceramic Floor Cleaner.
- For heavy duty cleaning, use Armstrong New Beginning Deep Cleaning Floor Stripper.
- Do NOT use detergents, abrasive cleaners, or "mop and shine" products. These products may leave a dull film on your floor.
- Over time, if the shine on your floor begins to dull, Armstrong Satinkeeper Resilient Low Gloss Floor Finish can be used to renew your floor's shine. Do NOT use paste wax or solvent-based polishes.
- Vinyl flooring, like other types of smooth floors, can become slippery when wet. Allow time for floor to dry after washing. Immediately wipe up wet areas from spills, foreign substances, or wet feet.

Armstrong®

Your ideas become reality®
Vos idées prennent forme®

STRATA MAX™

HI-PERFORMANCE SHEET FLOORING
COUVRE-PLANCHERS EN FEUILLE DE PERFORMANCE SUPÉRIEURE

Installation, Warranty, Care and Maintenance

Installation, garantie et entretien

Why StrataMax™?

- The most durable, stain-resistant, and buckle-resistant loose-lay floor on the market!
- The performance of a traditional glue-down felt floor with the ease of a loose-lay installation
- A revolutionary product that:
  - Resists buckling or tunneling from temperature changes when installed properly
  - Installs easily with modified loose-lay installation – easy in, easy out, saves time and money
- CleanSweep® High Performance Wear Layer
  - Provides best-in-class stain performance, including asphalt driveway sealer and rubber-backed mats
  - Offers excellent scratch resistance
  - Patented, high-performance urethane coating makes floors easy to clean; keeps the floor looking new longer
- MasterWorks Technology® provides unsurpassed realism creating the most beautiful floors
- ToughGuard® II technology
  - 70% stone composite bottom layer creates an incredibly durable loose-lay floor
  - Surprising flexibility reduces installation time and minimizes errors

Floor Care Recommendations

Floor Protectors

- Floor protectors evenly distribute furniture weight and help prevent indentations from forming on your vinyl floor.

Seam Coating Kit

- Protects seams from dirt and wear.
- Use S-564 Seam Coating Kit for semi gloss or low gloss floors.

New Beginning® Resilient Deep Cleaning Floor Stripper

- For all vinyl floors
- Solves tough cleaning problems

Once'n Done® Resilient & Ceramic Floor Cleaner

- No-rinse floor cleaner for no-wax vinyl, ceramic, and laminate floors

Satinkeeper® Resilient Low Gloss Floor Finish

- For all vinyl floors
- Restores shine to older floors

Installation Instructions

General Information

StrataMax flooring can be installed by two installation methods. It is designed as a lay flat structure when installed by the modified loose lay installation method using acrylic double-face tape under seams. It can also be installed by the traditional full spread method using S-288 adhesive over approved substrates and underlayments. The modified loose lay method requires that the flooring be cut 1/8″ to 3/16″ away from all vertical surfaces such as walls, cabinets, pipes, etc. This gap must then be filled with a good quality siliconized or acrylic caulk.

- Transport and store flooring rolled face out on a cardboard tube, do not kink or distort.
- Always roll flooring face out until ready to install.
- Do not use products containing petroleum solvents or citrus oils to prepare substrates.
- Just prior to installation, lay flooring out flat to acclimate to conditions and allow the roll-up stresses to relax.
- Flooring and room temperature should be a minimum of 65°F (18°C) for 48 hours before installation, during installation, and 48 hours after installation. Minimum 55° F (13° C) thereafter.
- Plan layout for minimum number of seams.
- Accurately measure length and width of room. Include recessed areas/doorways.
- Allow an extra 1-1/2″ of flooring on each end for trimming.
- If more than one piece of flooring is needed, allow for correct pattern match at seam.

Suitable Substrates

All substrates listed below must be properly prepared and meet certain requirements. There may be other exceptions and special conditions for these substrates to be suitable for StrataMax flooring installation. (Refer to the Subfloors and Underlayment section of the Armstrong Guaranteed Installation Systems manual, F-5061, for more details. Or visit www.floorexpert.com.)

- Concrete (on all grade levels)
- Approved suspended wood underlayments
- Single-layer, fully adhered, existing resilient floors
- Ceramic tile, terrazzo, marble
- Polymeric poured (seamless) floors

StrataMax, because of its unique structure and design, can also be installed directly over suspended single-layer wood subfloors such as plywood or oriented strand board (OSB) **when using the modified loose lay method**. The subfloor system must be designed to meet or exceed applicable building codes with a minimum of 18″ well-ventilated air space below. The subfloor panels should have a smooth, sanded face and show no swelling of edges or surface due to exposure to weather conditions or construction traffic. The panels can not be contaminated by staining agents. **Otherwise, an additional 1/4″ or thicker underlayment is recommended**.

Single-layer wood subfloors increase the potential for staining from the panel components, coated nails, construction adhesives, spills, overspray and show-through from texture and mechanical or water damage when resilient flooring is installed directly over them.

Armstrong cannot be responsible for:

- joint or texture show-through
- tunneling and ridging over board joints
- discoloration from stain sources in the panel, regardless of the type of panel used
- problems caused by local climate conditions, basement wall and subfloor construction, or improper installation

Do not install over:

- Particleboard, or waferboard panels
- Existing resilient tile floors that are below grade
- Existing cushion-backed vinyl flooring
- Carpet
- Hardwood flooring that has been installed directly over concrete

Job Conditions

- All substrates must be sound, dry, clean, smooth, and free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, other foreign matter and containments that could cause staining or interfere with a good bond.
- In renovation or remodel work, remove any existing adhesive residue* so that 100% of the overall area of the original substrate is exposed.
- When installing over an existing resilient floor, use S-199 One-Part Embossing Leveler or S-194 Patch, Underlayment & Embossing Leveler/S-195 Underlayment Additive to fill and smooth any embossing in the old floor. This is particularly important when fully adhering StrataMax flooring.
- The area to receive resilient flooring and the flooring materials and adhesives should be maintained at a minimum of 65° F (18° C) for 48 hours before installation, during installation, and 48 hours after completion. Maintain a minimum temperature of 55° F (13° C) thereafter.
- Verification must be made that subfloor moisture levels do not exceed acceptable limits when installing flooring over concrete subfloors. Conduct a Calcium Chloride Test to measure subfloor vapor transmission levels prior to installation. Armstrong recommends a maximum acceptable moisture emission level of 3 lbs./1000 sq.ft./24 hrs. for StrataMax flooring. If subfloor moisture vapor transmission levels exceed the recommended limit, the concrete must be allowed to dry out prior to installing the floor.
- Radiant heated substrates must not exceed a maximum surface temperature of 85° F (29° C)

*** WARNING: EXISTING IN-PLACE RESILIENT FLOOR COVERING AND ASPHALTIC ADHESIVES. DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVE, OR OTHER ADHESIVE.**

These **existing in-place** products may contain **asbestos fibers** and/or **crystalline silica**.

Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.

Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm.

Unless positively certain that the existing in-place product is a non-asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern removal and disposal of material.

See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for instructions on removing all resilient floor covering structures or contact your retailer or Armstrong World Industries, Inc. 1 800 233 3823.

The floor covering or adhesive in this package does NOT contain asbestos.

Room Preparation

Remove baseboard, quarter-round moldings, wall base, appliances and furniture from room. For best results, the decorative trim and jamb moldings at doorways should be undercut to allow flooring to slip underneath. After preparation work, be sure to sweep and vacuum the entire work area to remove all dust and debris. Check the substrate one last time for smoothness, cleanliness, loose boards or squeaks. Correct as necessary. Installation on stairs is **not** recommended.

Procedure

StrataMax flooring is designed for modified loose lay installation using acrylic double-face tape only at seams and other critical areas. In bathrooms, tape should be used to secure the flooring in front of tubs and shower enclosures. Other critical areas could be a doorway where trim cannot be used to cover an exposed edge or an area in the kitchen with a heavy movable appliance. **Do not use the tape around the entire perimeter of the room.**

StrataMax flooring should be cut approximately 1/8″ to 3/16″ away from all vertical surfaces such as walls, cabinets, pipes, etc. This will prevent any fullness around the perimeter of the room and also provide a small gap that must be filled with a good quality siliconized or acrylic caulk, even in areas where trim moldings or vinyl wall base will be put on top. This will prevent moisture from getting beneath the new flooring. StrataMax flooring should not be cut full or snug. Make sure all areas are lying flat before applying caulk in the perimeter gap.

Seams

If a seam is required in a primary part of the room, it should be made after the product has been rough cut and is lying flat in proper position in the room but prior to final cutting and fitting around the perimeter. Overlap the selvage edges of both pieces of flooring so that the proper pattern match is achieved. Then, carefully fold back the seam edges without shifting the sheets, so that a strip of scrap material can be placed under the product where the seam will be cut. This will save your knife blade and prevent scoring the substrate directly beneath the seam. Reposition the two edges, ensuring a good pattern match.

[Seams should be double-cut. Straight edge and butt method of seaming is not recommended for this product. The seams of StrataMax flooring should not be stretched or compressed to obtain pattern match as it will create buckles in the flooring adjacent to seams.]

Use a sharp utility knife with a straightedge as a guide to double-cut through both pieces of material. Most patterns will have a grout line where the seam should be cut. Hold the knife blade vertical, at a 90 degree angle to the floor when cutting the seam, to ensure a straight, clean cut.

Fold back one side of the cut seam and remove the scrap material and selvage. Mark a pencil line on the substrate along the seam to be used as a reference for positioning the acrylic double-face tape. Install the tape centering it under the seam. Use a hand roller or clean cloth to press it against the substrate. Peel the release layer off of the tape and begin to carefully reposition the two sides of the seam on top of the tape. (On long seams it may be easier to just remove a portion of the release layer at a time until you are sure the seam is falling back into position properly.) When both sides of the seam are properly positioned on top of the tape, use a hand roller to ensure a complete bond.

Use only acrylic double-face tape intended for use with vinyl flooring. Ordinary carpet tapes may "read" through and also cause vinyl discoloration.

Seams must be coated using the S-564 Low Gloss Seam Coating Kit at the completion of the installation. Follow directions included in the kit and protect the coating from traffic until cured.

Note: *StrataMax flooring can also be installed as a traditional, fully adhered floor using S-288 Residential Flooring Adhesive.* ***Do not use fully adhered method directly over suspended single-layer wood subfloor systems.*** *S-288 is applied with the fine notching of an Armstrong trowel having notches 1/32″ deep x 1/16″ wide x 5/64″ apart. Over* ***nonporous surfaces*** *such as existing resilient flooring and embossing levelers, allow enough open time for the adhesive to dry until tacky with no transfer to the finger (Dry-to-Touch) before placing the flooring into it. Over* ***porous surfaces*** *such as concrete and wood, allow the adhesive enough time to thicken slightly but not become completely dry to the touch.*

Finishing the Installation

Replace moldings and install vinyl wall base as needed. Leave a slight clearance between the flooring and the bottom of the molding. Nail molding into the wall, not into the floor.

When replacing appliances, or whenever moving heavy furniture over the flooring, place a wood panel under the object. Without moving the panel, slide or roll the object over it. Follow with additional panels as needed. This prevents scratches, tears or buckling of the flooring material.

Care and Maintenance Instructions

Proper care and maintenance will help ensure your floor always looks its best. Simply follow our maintenance and prevention steps outlined below.

Immediately After Installation

- For 8 hours after seam application, protect the sealed seams on your flooring. This will ensure proper seam bond. If your seams are disturbed before they're dry, permanent damage may result.

Proactive Protection for Your Floor

- When moving appliances or heavy furniture, it is always wise to lay a plywood panel on your floor and "walk" the item across it. This protects your floor from scuffing and tears.
- Use floor protectors, such as Armstrong Floor Protectors, on furniture to reduce indentation. As a general rule of thumb, the heavier the item, the wider the floor protector needed.
- Place a walk-off mat at outside entrances to reduce the amount of dirt brought into your home. We strongly recommend mats without a latex or rubber backing since these backings can cause permanent discoloration.
- All Armstrong floor care products have been specifically developed to care for Armstrong floors. You may purchase Armstrong floor care products at your local flooring retailer.

Caring for Your Floor

- Sweep or vacuum regularly to remove loose dirt which can scratch your floor. NOTE: We do not recommend vacuums that have a beater bar since it can visibly damage your flooring surface. Additionally, we do not recommend electric brooms with hard plastic bottoms with no padding as use may result in discoloration and deglossing.
- Wipe up spills as soon as possible. Remove dried spills with Armstrong™ New Beginning Deep Cleaning Floor Stripper on a clean white cloth and rinse. Never use highly abrasive scrubbing tools on any resilient floor.
- Wash your floor regularly with Armstrong Once 'n Done Resilient & Ceramic Floor Cleaner.
- For heavy duty cleaning, use Armstrong New Beginning Deep Cleaning Floor Stripper.
- Do NOT use detergents, abrasive cleaners, or "mop and shine" products. These products may leave a dull film on your floor.
- Over time, if the shine on your floor begins to dull, Armstrong Satinkeeper Resilient Low Gloss Floor Finish can be used to renew your floor's shine. Do NOT use paste wax or solvent-based polishes.
- Vinyl flooring, like other types of smooth floors, can become slippery when wet. Allow time for floor to dry after washing. Immediately wipe up wet areas from spills, foreign substances, or wet feet.

Warranty

Warranty Requirements

Proper installation plays a key role in the performance of Armstrong floors. Installation defects are not covered by our warranty and are the responsibility of your installer. Armstrong floors should be installed according to the Armstrong Guaranteed Installation System. This means that Armstrong installation products specifically designed for Armstrong floors should be used when installing Armstrong floors.

If the Armstrong Guaranteed Installation System is followed, we guarantee that, for the specified warranty period, from the date of purchase:

- The floor edges won't curl
- The floor seams won't open
- The floor will stay bonded
- The floor will not buckle or tunnel under normal temperature and climatic conditions*
- Armstrong adhesives, underlayments, and seam treatments won't stain the floor
- The floor will not crack over underlayment joints

* Normal conditions are defined as 55° F to 100° F and humidity of 20% RH to 80% RH.

What Will Armstrong Do If Any of the Above Happen?

If any of the above should occur within the specified warranty period, Armstrong will either repair the defective area or replace the floor with comparable Armstrong flooring of similar color, pattern, and quality at our option. And, if your floor was professionally installed, Armstrong will also pay reasonable labor costs for the direct repairs or replacement.

Please note that Armstrong will replace or repair a floor discolored from mold, mildew or alkali one time. If the replacement or repair fails in the same manner a second time, the flooring conditions may not be acceptable for the installation of vinyl sheet flooring.

Armstrong 12-Year Limited Residential Warranty

Better 12-YEAR RESIDENTIAL WARRANTY

What is covered and for how long?

The Armstrong 12-year limited warranty means that for 12 years from the date of purchase, your floor:

- Will not rip, tear or gouge from normal household use
- Will not permanently indent from normal household use†
- Will not wear through*
- Will not permanently stain from common household stains
- Will not permanently stain from traffic stains including asphalt driveway sealer
- Will not permanently stain from rubber-backed mats
- Will not permanently scuff from shoe soles
- Will not fade or discolor from heat or sunlight
- Will not discolor from moisture or underlayment panels
- Will not contain manufacturing defects

† We recommend using floor protectors. As a general rule of thumb, the heavier the item, the wider the floor protectors should be.

* Wear-through is defined as loss of the floor design due to normal household use.

What will Armstrong do if you are dissatisfied?

We will provide replacement Armstrong StrataMax of comparable quality, color and pattern. We exclude any liability for installation costs or other damages.

What is NOT covered by this warranty?

- Damage caused by fire, flooding or intentional abuse.
- Damage caused by vacuum cleaner beater bar, caster wheels and cutting from sharp objects.
  - When vacuuming, we recommend using the wand attachment on your vacuum.
  - Because rolling casters can damage the floor, we do not recommend them.
- Loss of gloss/scratching.
  - If some dulling occurs over time, depending on the amount of traffic, care and maintenance the floor receives, restore the floor's shine using Armstrong Satinkeeper Low Gloss Floor Finish.
- Minor color, shade or texture variations between samples or printed color photography and the actual material.
- Only floors graded "regular" are covered by this warranty.
- This warranty applies only to floors installed in owner-occupied or tenant-occupied residences. Commercial installations of residential products are not covered. Construction or installation related damage is not covered.
- Floors discolored from moisture or underlayment panels after having been repaired or replaced by Armstrong one time, or caused by excessive moisture from sources such as flooding and water leakage, are not covered by this warranty.
- Installation defects are not covered by this warranty.
- Damage caused by abuse such as moving appliances across the floor without adequate protection.
  - When moving appliances or heavy furniture, lay a plywood panel on your floor and "walk" the item across it. This protects your floor from scuffing and tears.

What should you do if you are dissatisfied?

We want you to be happy with your Armstrong floor. If you're not, call your retail store. They can answer your questions and, if necessary, start to process a claim. If you have further questions, please call us at 1 800 233 3823. PLEASE KEEP YOUR RECEIPT OR OBTAIN IT FROM THE ORIGINAL PURCHASER. Armstrong needs the receipt in order to verify date and proof of purchase to resolve any problems that may occur.

What is excluded from this warranty?

Armstrong excludes and will not pay incidental or consequential damages under this warranty. By this we mean any loss, expense, or damage other than to the flooring itself that may result from a defect in the flooring. No implied warranties extend beyond the terms of this written warranty.

Please Note: Some jurisdictions do not allow exclusion or limitations of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from jurisdiction to jurisdiction.

This warranty applies to floors purchased after August 21, 2006.

In Canada, these warranties are offered by Armstrong World Industries Canada, LTD.

Pourquoi StrataMax™?

- Le couvre-plancher à installer selon la méthode de pose libre le plus durable et résistant aux taches et au gondolement sur le marché!
- La performance d'un couvre-planchers à endos en feutre collé de la façon traditionnelle et la facilité de la pose libre.
- Un produit révolutionnaire aux caractéristiques suivantes :
  - Résiste au gondolement et à la formation de tunnels causés par à des changements de température, s'il a été installé correctement
  - Installation facile selon la méthode modifiée de pose libre – facile à poser – facile à enlever, pour épargner temps et argent
- CleanSweep® Surface d'usure haute performance
  - Assure la meilleure performance contre les taches, y compris les produits scellants pour les allées en asphalte et les tapis à endos de caoutchouc
  - Offre une excellente résistance aux égratignures
  - Le revêtement uréthane haute performance breveté facilite le nettoyage; garde au plancher son aspect neuf plus longtemps
- Technologie MasterWorks® assure un réalisme sans égal pour créer des couvre-planchers étonnamment beaux
- Technologie ToughGuard® II
  - La couche inférieure 70 % de pierre composite selon la méthode de pose libre crée un plancher flottant incroyablement durable
  - Une flexibilité étonnante réduit le temps d'installation et le risque d'erreurs

Recommandations pour l'entretien :

Coussins protecteurs

- Placer des coussins protecteurs sous les pieds des meubles pour en répartir le poids et prévenir les empreintes sur les couvre-planchers de vinyle

Trousse de revêtement des joints

- Protège les joints contre la saleté et l'usure.
- Sur les couvre-planchers semi-brillants ou peu brillants, utiliser la trousse de revêtement des joints S-564.

Le décapant et nettoyant en profondeur pour planchers New Beginning®

- Pour tous les couvre-planchers de vinyle
- Solutionne les problèmes de nettoyage difficiles

Résilient et céramique nettoyant pour planchers Once 'n Done®

- Nettoyant pour plancher ne nécessitant aucun rinçage pour les couvre-planchers sans cirage de vinyle, de céramique et laminés

Fini peu brillant pour planchers résilients Satinkeeper®

- Pour tous les couvre-planchers de vinyle
- Restaure le lustre des planchers moins neufs

Notice d'installation

Renseignements généraux

On peut installer le couvre-plancher StrataMax selon deux méthodes différentes. Il peut être déposé à plat lorsqu'on l'installe selon la méthode modifiée de pose libre à l'aide d'un ruban acrylique double face sous les joints. On peut aussi l'installer en utilisant la méthode par collage intégral traditionnelle avec l'adhésif S-288 sur un support et une sous-couche approuvés. Selon la méthode modifiée de pose libre, il faut tailler le couvre-plancher en laissant un espace de 1/8 à 3/16 de pouce au bord de toutes les surfaces verticales comme les murs, les armoires, les tuyaux etc. Cet écart devra ensuite être rempli avec un produit de calfeutrage siliconé ou acrylique de bonne qualité.

- Transporter et ranger le couvre-plancher roulé serré, motif vers l'extérieur, sur un tube en carton. Ne pas tordre ni déformer.
- Toujours garder le couvre-plancher roulé serré, motif vers l'extérieur, jusqu'au moment de l'installation.
- Ne pas utiliser de produits contenant des solvants pétroliers ou des essence d'agrumes pour préparer les supports.
- Juste avant l'installation, déposer le couvre-plancher à plat pour l'acclimater aux conditions de la pièce et relâcher les tensions d'enroulement.
- Garder la température de la pièce et du couvre-plancher à au moins 65 °F (18 °C) 48 heures avant l'installation, pendant l'installation et 48 heures après l'installation. Par la suite, il faut garder la température à au moins 55 °F (13 °C).
- Planifier la disposition de façon à obtenir un nombre minimal de joints.
- Mesurer avec précision la longueur et la largeur de la pièce. Inclure les endroits en retrait/entrées de porte.
- Ajouter 1-1/2 po à chaque extrémité du couvre-plancher aux fins d'affleurage.
- S'il faut plus d'un morceau de couvre-plancher, prévoir une quantité suffisante pour assurer l'appariement des motifs au niveau des joints.

Supports appropriés

Tous les supports énumérés ci-dessous doivent être correctement préparés et répondre à certaines exigences. Certaines exceptions et conditions spéciales peuvent s'appliquer pour que ces supports conviennent à une installation particulière. (Se reporter au manuel des Systèmes d'installation garantis Armstrong, F-5061, pour obtenir de plus amples détails ou visiter le site www.floorexpert.com).

- Béton (sur tous les niveaux de sol)
- Sous-couches suspendues en bois, approuvées
- Couvre-planchers souples à couche simple existants, adhésion totale
- Carreaux céramiques, terrazzo, marbre
- Sols en polymère coulé (sans jointure)

Grâce à sa structure et à sa conception unique, StrataMax peut également être installé directement sur des sous-planchers en bois suspendus à couche simple comme les panneaux de contreplaqué ou de copeaux orientés (OSB) **en utilisant la méthode modifiée de pose libre**. Le système de sous-plancher doit respecter ou dépasser les normes applicables du code de construction comportant un espace d'air bien aéré d'au moins 18 po au-dessous. Les panneaux de sous-plancher doivent avoir une face lisse et sablée et ne présenter aucun gonflement des bords ou de la surface causé par les conditions climatiques ou le va-et-vient des corps de métier de la construction. Les panneaux ne doivent pas être contaminés par des agents tachants. **Autrement, une sous-couche supplémentaire de 1/4 po ou plus est recommandée.**

L'installation de ce type de revêtement souple directement sur un sous-plancher en bois à couche simple, augmentera le risque de tache par les composants des panneaux, les clous enduits, les adhésifs de construction, les déversements, la survaporisation, la transparence de la texture ou causé par un dommage mécanique ou un dégât d'eau.

Armstrong n'assume aucune responsabilité pour :

- La transparence des joints ou de la texture
- La formation de tunnels ou de rides à la jointure des panneaux
- La décoloration causée par des sources de tache dans le panneau, peu importe le type de panneau utilisé
- Les problèmes causés par les conditions climatiques locales, la construction des murs du sous-sol et du sous-plancher ou une installation incorrecte

Ne pas installer sur :

- Des panneaux de particules ou agglomérés
- Un couvre-plancher existant en carreaux résilients au-dessous du niveau du sol
- Un couvre-plancher existant en vinyle à endos coussiné
- Une moquette
- Un plancher de bois franc installé directement sur du béton

Préparation/conditions de travail

- Les supports doivent être en bon état, secs, propres, lisses et exempts de tout excès d'humidité ou d'alcalis. Enlever saleté, peinture, cire, huile, solvant et autres matières étrangères qui gêneraient l'adhérence comme des produits d'étanchéité et des agents de séchage.
- Pour les travaux de transformation et de rénovation, enlever tout résidu d'adhésif existant* pour que la surface entière du support original soit exposée.
- Pour la pose sur un couvre-plancher résilient existant, utiliser l'agent égalisant One-Part Embossing Leveler S-199 ou le Patch Underlayment & Embossing Leveler S-194 avec l'additif pour sous-couche S-195 pour obtenir un ragréage lisse de l'ancien plancher. Ceci est particulièrement important pour la pose par collage intégral d'un revêtement StrataMax.
- La zone où sera faite la pose des matériaux de couvre-planchers et des couvre-planchers résilients ainsi que des adhésifs doit être maintenue à une température minimale de 65 °F (18 °C) pendant 48 heures avant l'installation, lors de l'installation et 48 heures après la fin de l'installation. Il faut ensuite maintenir une température minimale de 55 °F (13 °C).
- Vérifier que les taux d'humidité du sous-plancher ne dépassent pas les limites acceptables lors de la pose de couvre-planchers sur du béton. Effectuer un test au chlorure de calcium pour mesurer les niveaux de transmission de vapeur pour le sous-plancher avant l'installation. Armstrong propose un niveau maximal d'émission d'humidité de 5 lb/1000 pi^2/24 h pour les couvre-planchers StrataMax. Si les niveaux de transmission d'humidité au niveau du sous-plancher dépassent la limite recommandée, il faut laisser sécher le béton avant la pose du couvre-plancher.
- Les supports chauffés par rayonnement ne doivent pas avoir une température maximale à la surface de plus de 85 °F (29 °C).

*** AVERTISSEMENT : REVÊTEMENTS DE SOL SOUPLES DÉJÀ EN PLACE ET ADHÉSIF DE ASPHALTE. ÉVITER DE PONCER, DE BALAYER OU DE GRATTER À SEC, DE PERCER, DE SCIER, DE DÉCAPER PAR JET DE BILLES, DE DÉCOUPER OU DE PULVÉRISER PAR DES MOYENS MÉCANIQUES LES REVÊTEMENTS SOUPLES, LES ENDOS, LES THIBAUDES, LES ADHÉSIFS DE BITUME FLUIDIFIÉ OU TOUT AUTRE ADHÉSIF.**

Ces produits déjà **en place** peuvent contenir des **fibres d'amiante** et/ou de la **silice cristalline**.

Éviter de produire de la poussière. L'inhalation de telles poussières cancérigènes comporte un risque de lésion des voies respiratoires.

L'usage du tabac combiné à une exposition aux fibres d'amiante accroît considérablement le risque de maladie grave.

À moins d'être certain que le produit déjà en place ne contient pas d'amiante, supposer le contraire. Le règlement peut exiger, dans certains cas, de soumettre les matériaux à des essais pour en déterminer la teneur en amiante et prescrire des méthodes pour enlever et éliminer ces produits.

Consulter l'édition courante de la brochure du Resilient Floor Covering Institute (RFCI), intitulée Recommended Work Practices for Removal of Resilient Floor Coverings, pour obtenir des renseignements détaillés et des directives sur l'enlèvement de revêtements de sol souples. Il est également possible de communiquer avec le détaillant ou Armstrong World Industries, Inc. en composant le 1 800 233 3823.

Le revêtement de sol et l'adhésif fournis dans cette trousse NE contiennent AUCUN amiante.

Préparation de la pièce

Enlever les plinthes et les quarts-de-rond et sortir les appareils électroménagers et les meubles de la pièce. Pour obtenir de meilleurs résultats, on peut couper le bas des moulures décoratives et des piédroits pour permettre au couvre-plancher de passer en dessous. Une fois le travail de préparation terminé, passer le balai et l'aspirateur sur toute la surface pour enlever la poussière et les débris. Vérifier une dernière fois si le support est lisse et propre et si des planches sont décollées ou craquent. Réparer s'il y a lieu. Il n'est **pas** recommandé d'installer ce couvre-plancher dans un escalier.

Marche à suivre

Pour installer un couvre-plancher StrataMax, il faut utiliser la méthode modifiée de pose libre en plaçant du ruban adhésif double face en acrylique uniquement aux joints et à d'autres endroits cruciaux. Dans les salles de bains, il faut utiliser du ruban pour bien fixer le couvre-plancher devant la baignoire et la cabine de douche. Une entrée de porte où on ne peut utiliser une garniture pour couvrir un bord exposé ou un emplacement dans la cuisine où se trouve un appareil électroménager lourd amovible sont d'autres endroits cruciaux. **Ne pas utiliser du ruban autour de tout le périmètre de la pièce.**

Le couvre-plancher StrataMax doit être coupé à environ 1/8 po à 3/16 po de toutes les surfaces verticales comme les murs, les armoires, les tuyaux, etc. Ceci permettra d'éviter un amas autour du périmètre de la pièce et fournira un petit écart qu'il faut remplir d'un produit de calfeutrage siliconé ou acrylique de bonne qualité, même aux endroits où on posera une moulure ou une plinthe de vinyle par-dessus. Cela empêchera l'humidité de pénétrer sous le couvre-plancher neuf. Le couvre-plancher StrataMax ne doit pas être coupé au ras du mur. Il faut s'assurer que tout le couvre-plancher repose bien à plat avant d'appliquer le produit de calfeutrage dans l'écart autour du périmètre.

Joints

Si un joint est requis dans une partie primaire de la pièce, il faut le faire lorsque le produit a été ébauché et qu'il repose bien à plat dans la pièce, mais avant la coupe finale et l'ajustement autour du périmètre. Chevaucher les lisières des deux morceaux de couvre-plancher afin de bien apparier les motifs. Ensuite, replier soigneusement les bords du joint sans déplacer les feuilles, de façon à pouvoir placer une pièce de rebuts sous le produit où le joint sera coupé. Cela permettra de préserver la lame du couteau et d'éviter d'entailler le support qui se trouve directement sous le joint. Repositionner les deux bords de façon à bien apparier les motifs.

[Utiliser la méthode de coupe en double des joints. Il n'est pas recommandé d'utiliser la méthode par découpage et aboutage pour ce produit. Il ne faut pas étirer ou comprimer les joints des couvre-planchers StrataMax pour apparier les motifs car cela fera gondoler les parties du couvre-plancher qui sont adjacentes aux joints.]

Utiliser un couteau universel bien aiguisé et une règle droite comme guide pour couper en double les deux morceaux de matériau. La plupart des motifs comportent une ligne où il faut couper le joint. Couper le joint en tenant la lame du couteau en position verticale, à un angle de 90 degrés par rapport au plancher, afin d'assurer une coupe droite et nette.

Replier un côté du joint coupé et enlever la pièce de rebuts et la lisière. Tracer une ligne au crayon sur le support, le long du joint, qui servira de référence pour positionner le ruban adhésif double face en acrylique. Installer le ruban en le centrant sous le joint. Utiliser un rouleau à main ou un chiffon propre pour appuyer le ruban contre le support. Enlever le papier antiadhésif du ruban et commencer à repositionner soigneusement les deux côtés du joint au-dessus du ruban. (Pour les joints longs, il est peut-être plus facile d'enlever simplement une partie du papier antiadhésif à la fois, jusqu'à ce que l'on soit certain que le joint est bien positionné.) Lorsque les deux côtés du joint sont bien positionnés sur le dessus du ruban, utiliser un rouleau à main pour assurer une adhérence parfaite.

Utiliser uniquement du ruban adhésif double face en acrylique conçu pour les couvre-planchers en vinyle. Les rubans à tapis ordinaires peuvent « ressortir » et entraîner la décoloration du vinyle.

Lorsque l'installation est terminée, utiliser la trousse de revêtement pour joints à faible lustre S-564 pour recouvrir les joints. Il faut suivre les directives incluses dans la trousse et protéger le revêtement contre le trafic jusqu'à ce qu'il soit sec.

Remarque : *On peut également installer les couvre-planchers StrataMax de la façon traditionnelle en les collant entièrement à l'aide de l'adhésif à couvre-plancher pour application résidentielle S-288.* ***On ne doit pas les installer en suivant la méthode par collage intégral directement sur des systèmes de sous-planchers suspendus en bois à couche simple.*** *On applique l'adhésif S-288 avec le côté finement cranté d'une truelle Armstrong (crants de 1/32 po de profondeur, 1/16 po de largeur et à des intervalles de 5/64 po). Sur les* ***surfaces non poreuses****, comme les couvre-planchers résilients et les agents égalisants, il faut laisser sécher l'adhésif jusqu'à ce qu'il soit collant sans se transférer aux doigts (sec au toucher) avant de mettre le couvre-plancher. Sur les* ***surfaces poreuses****, comme le béton et le bois, il faut laisser l'adhésif épaissir légèrement, sans qu'il ne soit complètement sec au toucher.*

Dernière étape de l'installation

Replacer les moulures et installer les plinthes en vinyle. Laisser un léger dégagement entre le couvre-plancher et le bas des moulures. Clouer les moulures dans le mur, et non pas dans le couvre-plancher.

Lorsqu'on replace les appareils ménagers ou chaque fois qu'on déplace des meubles lourds sur le couvre-plancher, il faut mettre un panneau en contreplaqué sous ceux-ci. Sans bouger le panneau, faire glisser ou rouler le meuble sur celui-ci. Ajouter d'autres panneaux, le cas échéant. Ceci empêche les éraflures, les déchirures et le gondolement du couvre-plancher.

Instructions pour soins et entretien

Un entretien approprié permet de préserver toute la beauté du couvre-plancher. Il suffit de suivre les étapes d'entretien et de prévention décrites ci-dessous.

Immédiatement après l'installation

- Il faut protéger les joints scellés du couvre-plancher pendant une période de huit heures après l'application des joints. Cela permet une bonne adhérence des joints. Si les joints sont perturbés avant qu'ils ne soient secs, cela peut entraîner des dommages permanents.

Protection proactive du couvre-plancher

- Lors du déplacement d'appareils ménagers ou de meubles lourds, il est toujours sage de mettre un panneau en contreplaqué sur le sol pour faire « avancer » l'article dessus. Ceci empêche les éraflures et déchirures du couvre-plancher.
- Utiliser des coussins protecteurs, comme les protecteurs de couvre-planchers Armstrong, sous les meubles pour réduire les marques. En règle générale, plus l'article est lourd, plus le protecteur nécessaire doit être large.
- Mettre un tapis essuie-pieds aux entrées extérieures pour réduire la quantité de saleté apportée dans la maison. Nous recommandons fortement des tapis essuie-pieds sans endos en caoutchouc ou en latex car ceux-ci peuvent entraîner une décoloration permanente.
- Tous les produits d'entretien de couvre-planchers Armstrong ont été spécifiquement mis au point pour l'entretien des couvre-planchers Armstrong. On peut acheter des produits d'entretien de couvre-planchers Armstrong chez le marchand de couvre-planchers local.

Entretien du couvre-plancher

- Passer régulièrement l'aspirateur ou le balai pour enlever la poussière et les saletés qui pourraient rayer le couvre-plancher. REMARQUE : Nous ne recommandons pas l'utilisation d'un aspirateur doté d'une barre de battage car celle-ci pourrait endommager visiblement la surface du couvre-plancher. De plus, nous ne recommandons pas l'utilisation d'un balai électrique avec dessous en plastique dur sans rembourrage, ceci pouvant entraîner la décoloration et l'enlèvement du brillant.
- Essuyer les produits renversés dès que possible. Pour enlever les produits renversés qui ont séché, utiliser le décapant à plancher pour nettoyage en profondeur New Beginning d'Armstrong™ et un chiffon blanc propre. Rincer. Ne jamais utiliser d'outils de récurage hautement abrasifs sur un plancher résilient.
- Laver le couvre-plancher régulièrement avec le nettoyant pour couvre-plancher résilient et en céramique Once 'n Done d'Armstrong.
- Pour un gros nettoyage, utiliser le produit décapant à plancher pour nettoyage en profondeur New Beginning d'Armstrong.
- Ne PAS utiliser de détergents, de nettoyants abrasifs ni de produits « mop and shine ». Ces produits peuvent laisser une pellicule terne sur le couvre-plancher.
- Après un certain temps, si le brillant du couvre-plancher devient terne, appliquer le fini peu brillant pour planchers résilients Satinkeeper d'Armstrong pour redonner du brillant au couvre-plancher. Ne PAS utiliser de cire en pâte ni de poli à base de solvant.
- Les couvre-planchers en vinyle, comme d'autres types de couvre-planchers lisses, peuvent être glissants s'ils sont humides. Laisser le couvre-plancher sécher après l'avoir lavé. Essuyer immédiatement toute zone humide pour enlever les produits renversés, les substances étrangères ou les marques de pieds humides.

Garantie

Exigences en matière de la garantie

Une pose adéquate joue un rôle clé dans le rendement de vos couvre-planchers Armstrong. Les défauts de pose ne sont pas couverts par notre garantie et sont la responsabilité de votre poseur. Les couvre-planchers Armstrong devraient être posés conformément au système de pose garantie d'Armstrong. Cela veut dire que les produits de pose Armstrong spécialement conçus pour les couvre-planchers Armstrong devraient être utilisés pour la pose des couvre-planchers Armstrong.

Si le système de pose garantie d'Armstrong est respecté, nous garantissons que, à compter de la date d'achat et, pendant le temps spécifié dans la garantie :

- Les bords du couvre-plancher ne se retrousseront pas
- Les joints du couvre-plancher ne s'ouvriront pas
- Le couvre-plancher demeurera collé
- Le plancher ne gondolera pas et ne formera pas de tunnel si soumis à des conditions climatiques et des températures normales*
- Les adhésifs, les sous-couches et les traitements des joints Armstrong ne tacheront pas le couvre-plancher
- Le couvre-plancher ne se fendra pas au-dessus des joints de la sous-couche

* Par conditions normales, on entend des températures variant de 55° F à 100° F et un taux d'humidité (R.H.) entre 20 % et 80 %.

Que fera Armstrong si l'un des défauts ci-dessus apparaît?

Si l'un des défauts ci-dessus apparaît dans le temps spécifié dans la garantie Armstrong, à son gré, réparera la partie défectueuse ou remplacera le couvre-plancher par un couvre-plancher Armstrong comparable pour ce qui est de la couleur, des motifs et de la qualité. Et si votre couvre-plancher a été posé par un professionnel, Armstrong paiera également des frais de main-d'œuvre raisonnables pour les réparations directes ou le remplacement.

Veuillez noter que Armstrong remplacera ou réparera une seule fois un couvre-plancher décoloré par la moisissure, l'humidité ou les alcalis. Si le couvre-plancher de remplacement ou réparé subi le même dommage une deuxième fois, les conditions du sous-plancher ne conviennent peut-être pas à l'installation d'un couvre-plancher de vinyle.

La garantie limitée de 12 ans pour les couvre-planchers résidentiels d'Armstrong :

Meilleur GARANTIE DE 12 ANS

Que couvre la garantie et pendant combien de temps?

La garantie limitée de 12 ans d'Armstrong signifie que pendant 12 ans à compter de la date d'achat, votre couvre-plancher :

- Ne fendra pas, ne déchirera pas et ne s'enfoncera pas dans des conditions d'usage domestique normal
- Ne formera pas d'empreintes laissant une marque permanente dans des conditions d'usage domestique normal †
- Ne s'usera pas*
- Ne sera pas taché de façon permanente par des produits domestiques ordinaires
- Les napperons à endos de caoutchouc ne tacheront pas la surface en permanence
- Ne sera pas taché de façon permanente par la circulation, y compris par du bitume provenant de la voie d'accès au garage
- Ne sera pas éraflé de façon permanente par les semelles de chaussures
- Ne se décolorera pas à cause de la chaleur ou de la lumière du soleil
- Ne se décolorera pas à cause de l'humidité ou des panneaux de sous-finition
- Sera exempt de tout défaut de fabrication

† Nous recommandons l'utilisation de coussins protecteurs. En règle générale, plus l'article est lourd, plus les coussins doivent être larges.

* L'usure est définie comme étant la disparition des motifs du plancher par suite d'un usage domestique normal.

Que fera Armstrong si vous n'êtes pas satisfait?

Nous fournirons des StrataMax de remplacement Armstrong de qualité, de couleur et de motif comparables. Nous refusons toute responsabilité pour les coûts reliés à l'installation ou à tout autre dommage.

Qu'est-ce qui N'est PAS couvert par la garantie?

- Les dommages causés par un incendie, une inondation ou un usage abusif intentionnel.
- Les dommages causés par la brosse batteuse d'un aspirateur et les roulettes pivotantes, ainsi que les entailles causées par des objets pointus.
  - Lorsque vous passez l'aspirateur, nous vous recommandons d'utiliser le tuberallonge de votre aspirateur.
  - Les roulettes ne sont pas recommandées car elles peuvent endommager le covure-plancher.
- Les ternissures/égratignures
  - Si le couvre-plancher devient terne au fil du temps, selon l'intensité de la circulation et l'entretien effectué, restaurez sa brillance à l'aide de fini peu brillant pour planchers resilient Satinkeeper d'Armstrong.
- Légères variations de couleur, de ton ou de texture entre les échantillons ou les photos en couleur et le matériau réel.
- Seuls les couvre-planchers classés «réguliers» sont couverts par la présente garantie.
- La garantie s'applique uniquement aux couvre-planchers posés aux fins d'usage résidentiel. Les produits résidentiels posés à des fins commerciales ne sont pas couverts. Les dommages liés à la construction ou à la pose ne sont pas couverts.
- Les couvre-planchers décolorés à cause de l'humidité ou des panneaux de sousfinition et déjà réparés ou remplacés une fois par Armstrong, ou endommagés à cause d'une humidité excessive provenant, par example, d'une inondation ou d'une fuite d'eau, ne sont pas couverts par la garantie.
- Les défauts de pose ne sont pas couverts par la garantie.
- Les dommages causés par une mauvais usage, comme le déplacement d'électroménagers sans une protection adéquate du plancher.
  - Lorsque vous déplacez des électroménagers ou des meubles lourds, placez un panneau de contreplaqué sur le couvre-plancher et faires marcher l'article par-dessus le contreplaqué. Cette méthode vous permet de protéger votre couvre-plancher contre les éraflures et les déchirures.

Que devriez-vous faire si vous n'êtes pas satisfait?

Nous voulons que vous soyez satisfait de votre couvre-plancher Armstrong. Si vous ne l'êtes pas, communiquez avec votre détaillant. Il peut répondre à vos questions et, le cas échéant, procéder au traitement d'une demande de remboursement. Si vous avez d'autres questions, veuillez nous appeler au 1 800 233 3823. VEUILLEZ CONSERVER VOTRE REÇU OU L 'OBTENIR DE L'ACHETEUR ORIGINAL. Armstrong a besoin du reçu pour vérifier la date et la preuve d'achat, afin de résoudre tout problème éventuel.

Qu'est-ce qui est exclu de la garantie?

Armstrong exclut et ne remboursera pas les dommages accessoires ou indirects en vertu de la présente garantie. Par cela, on entend toute perte, toute dépense ou tout dommage autre qu'au couvre-plancher même pouvant découler d'un défaut dans le couvre-plancher. Aucune garantie implicite n'est offerte au-delà des conditions de la présente garantie écrite.

Remarque : Puisque certaines provinces ne permettent pas l'exclusion ou la limitation des dommages indirects ou accessoires, ou la limitation de la durée de la garantie implicite, les limitations ci-dessus ne vous concernent peut-être pas. La présente garantie vous confère des droits légaux précis et peut-être d'autres droits pouvant varier d'une province à l'autre.

La présente garantie s'appliquent aux couvre-planchers achetés après le 31 août 2006.

Au Canada, les présentes garanties sont offertes par Armstrong World Industries, Canada LTD.

F-7721-1106 Printed in the United States of America. Imprimé aux États-Unis d'Amérique.

Customer Relations and Technical Services
Services à la clientèle et services techniques
1 800 233 3823 www.armstrong.com

Armstrong®
Your ideas become reality®
Vos idées prennent forme®

SECTION 096816 - SHEET CARPETING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All bedrooms, living room, hall and dining area shall have carpet installed. Carpet pad must be inspected by the NSP Construction Manager before the installation of the floor covering.

PART 2 - PRODUCTS

2.1 CARPET FLOORING

A. Shaw Industries

B. Description: Textured plush FHA approved with 100% BCF nylon fiber and a 25oz face weight.

C. Style: #52N09 Full of Life

D. 5 year warranty

E. Available at Flooring America. Contact John Runion for Special NSP pricing at 904-635-1579.

2.2 CARPET CUSHION

A. Carpenter

B. Description: Viscobond Premium 8lb 7/16” spill guard protected bonded pad

C. Recyclable padding

D. Lifetime warranty

E. Available at Flooring America. Contact John Runion for Special NSP pricing at 904-635-1579.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with CRI 104.

B. Installation Method: As Manufacturer recommends.

C. Maintain uniformity of carpet direction and lay of pile. At doorways, center seams under door in closed position. Bind or seal cut edges as recommended by carpet manufacturer.

D. Install pattern parallel to walls and borders.

END OF SECTION 096816

QUOTE

Flooring America, Inc.

INVOICE # [100]
DATE: JULY 20, 2009

619 Cassat Avenue, Jacksonville, FL 32205
Phone 904.635.1579 c 904.387.9715 f
jrunion@flooringamericausa.com
John Runion

EXPIRATION DATE: 9/30/09 CARPET
12/31/09 VINYL

TO

Approx. 500 homes over a 12-36 month period.

"NSP", Neighborhood Stabilization Project.
Omega Allen, Project Manager
904.255.8253
214 N. Hogan St.
Ed Ball Building 8th Floor
Jacksonville, Fl. 32202

Customer ID: NSP

SALESPERSON	JOB	PAYMENT TERMS	DUE DATE
John Runion	NSP Project	COD	COD

QTY	DESCRIPTION	UNIT PRICE	LINE TOTAL
Carpet		Rolls Only	
	Product: Manufacture Shaw Industries. Style #52N09 Full of Life. Color #100 Sahara Buff. Textured plush FHA approved with 100% BCF nylon fiber and a 25 oz face weight. R2X Soil and Stain protection, 5-year quality assurance warranty and Shaw Green Edge since carpet is recyclable.	.90 sf. or $8.10 sy.	
Padding			
	Product: Manufacture Carpenter. Viscobond Premium 8lb 7/16" Spill guard protected bonded pad. Life of the House Warranty. Recyclable padding.	.40 sf. or $3.60 sy.	
Vinyl			
	Product: Manufacturer Armstrong. 12 ft wide. Style Strata Max Better Grade. Color #X2526 Limestone Pebble Beige. 70-mil gauge with clean sweep wear layer, Tough Guard II Structure and 12-year residential warranty. 24" pattern repeat. This product can be installed with a full spread or floating installation process.	$1.25 sf. or $11.25 sy.	
Vinyl Supplies	Armstrong Adhesive S288 for full spread installation. 1 gallon covers approx. 250 to 300 sf. Cost approx. .12 sf. Must be sold by the gallon.	1 Gallon $29.99 ea.	
Vinyl Supplies	Armstrong Acrylic Double face tape for floating floor. #7202 Duct branch 2" x 50' lf.	1 Roll $15.00 ea.	
Vinyl Supplies	Armstrong Seam Sealer #SF64. Covers approx. 100 lf.	1 Unit $13.50 ea.	

General Intent and Guidelines	1. Flooring America, Shaw industries and Cain and Bultman (Armstrong Distributors) have negotiated special pricing to make available products to approved NSP contractors. NSP office shall notify Flooring America and/or NSP contractor shall notify Flooring America that they are approved. Also, the contractor shall upon purchase provided the job address. Flooring America will keep a register of jobs sold that include contractor, product sold, quality sold, date sold and job location. This information will be made available to NSP and the Manufactures. 2. Flooring America of Jacksonville will inventory one color of the carpet, one color of the vinyl and certain vinyl supplies at its 619 Cassat Ave. location. Approx. 200 yds of carpet and 200 yds of vinyl will be kept on site. The purpose is to make the inventory available to the authorized contractors involved in the NSP project. This helps reduce the price since we are stocking rolls vs. cuts. Also, it allows for quicker service. If several orders are placed at one time then we will order additional inventory, which usually takes approx. 10 days. General intent is to have inventory available at all time and especially with 10-day notice. Contractor can purchase the same day (during normal business hours) but to ensure availability a 10-day notice would be helpful. 3. Flooring America will cut want ever size is needed for the contractor. Contractor shall be responsible for their measurements. Contact John Runion or Layne Beddard. The prices established in the quote will be the selling price to all contractors approved by NSP. 4. Carpet Prices good for through 9/30/09 and vinyl through 12/31/09. There after the only price change will be subject to an industry wide price change. If a price change we will notify NSP 30 days in advance. Prices, if changed, are usually 3 – 5 % annually. Also, near the price guaranteed expiration dates Flooring America maybe able to negotiate new price guaranteed terms. 5. Flooring America cannot guarantee the product selected will be available in the future by the manufacture. If a product is dropped Flooring America will notify NSP and a similar alternative will be selected within 30 days of the drop. 6. Flooring America will require payment from the contractors upon picking up the material. COD terms unless special arrangements are negotiated with an individual contractor. Flooring America has the right to establish terms for some contracts and not others based on their credit history. 7. Flooring America and NSP are under no obligation. This is the general intent by all parties involved to help facilitate the NSP project. 8. Contractors that purchase from Flooring America are subject to the normal sale contractual terms and conditions.		

APPLIABLE SALES TAX	7 %
TOTAL	See Above

Standard Store Regular Pricing:

a. Retail carpet $1.59 sf and Contract .1.09 sf
b. Retail vinyl $2.09 sf and Contract $1.49 sf
c. Retail padding .75 sf and Contract .50 sf

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. LEAD BASED PAINT - The U.S. Department of Housing and Urban Development (HUD) has issued a new regulation to protect young children and families from lead-based paint hazards in housing that is financially assisted by the federal government or sold by the federal government. Upon inspection of homes built prior to 1978, and if cracking, peeling chipping, or chalking is observed the NSP Program Manager will engage the Environmental Consultant to perform a detailed assessment of the home, which includes but is not limited to, Visual Assessment, Paint Stabilization, Safe Work Practices Plan Implementation, and Clearance.

B. All interior trim shall be scraped, sanded, and filled to present a smooth surface free of defects ready to receive paint or a natural finish in like new condition.

C. Interior and Exterior Caulking – Prepare surface and then seal all cracks between plaster and wood door trim, window trim, and cabinets or wood items attached to the wall. Seal at joints of plaster and ceramic tile. Remove old caulking and caulk all joints between brick and window frames. Seal any and all cracks in interiors and exterior wood that may provide insect harborage after prime coat of paint, but prior to finish coat. Cracks 1/4 inch wide or more shall be first packed solid with insulation or other inorganic, vermin proof, non-deteriorating material. All caulking beads shall be smooth, neat and clean.

D. EXTRA MATERIALS: Deliver to Owner 1 quart of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

E. ALL HOMES WILL RECEIVE NEW PAINT IN ACCORDANCE WITH THE SPECIFICATIONS OUTLINED BELOW, REGARDLESS OF EXISITNG CONDITION.

F. See NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

1. **Architectural paints, coatings and primers applied to interior wall and ceilings: volatile organic compound (voc) content ≤ 50 g/L for flats and 150 g/L non-flats.**
2. **Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates: voc content ≤ 250 g/L.**

PART 2 - PRODUCTS

2.1 PAINT

A. SHERWIN WILLIAMS
1. Interior - New Drywall and Previously Painted Surfaces
   a. Primer: B28WX0600 – PROGREEN 200 PRMR BB
   b. Finish: B30W00651 – PROGREEN 200 Low VOC Interior Latex Flat

2. Interior - Wood, Door Trim, Casing, Baseboard, Etc…
   a. Primer: B30W00651 - PROGREEN 200 Low VOC Interior Latex Flat
   b. Finish: B31W00651 – PROGREEN 200 Low VOC Interior Latex Semi-Gloss
3. Exterior – Masonry
   a. Finish: B02WW0551 – Dura-Craft Exterior 100% Acrylic Flat
4. Exterior – Wood
   a. Finish: B02WW0551 – Dura-Craft Exterior 100% Acrylic Flat
5. Exterior – Steel and Metal Doors, Rails, Etc…
   a. Finish: B21WW0171 – Dura-Craft Exterior 100% Acrylic Semi-Gloss

B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."

C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. Use interior and exterior paints and coatings that comply with the VOC limits as specified by Sherwin Williams and the NSP Green Building Practices Handbook, Section 4.1 – Environmentally Preferable Products.

PART 3 - EXECUTION

3.1 PREPARATION

A. See ATTACHED Sherwin Williams Specification Handbook.

3.2 APPLICATION

A. See ATTACHED Sherwin Williams Specification Handbook.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

A. See ATTACHED Sherwin Williams Specification Handbook.

3.4 INTERIOR PAINT APPLICATION SCHEDULE

A. **See ATTACHED Sherwin Williams Specification Handbook.**

END OF SECTION 099100

SHERWIN-WILLIAMS
8011 MERRILL RD STE 6
JACKSONVILLE, FL 32277 3799
(904) 743-4114

05/12/2009

COJ NEIGHBOR STABILIZATION PROGRAM

-

Re: Submittal for COJ Neighbor Stabilization Program

Dear Omega Allen:

Thank you for considering Sherwin-Williams products for the COJ Neighbor Stabilization Program project. Included in this package is the Sherwin-Williams submittal for the above referenced project.

Should you require assistance or have any questions or concerns, please contact me at 904-234-7632 or e-mail me at swrep7820@sherwin.com.

Sincerely,

NATE SWAIN
Sherwin-Williams
Sales Representative

COJ Neighbor Stabilization Program

COJ NEIGHBOR STABILIZATION PROGRAM
214 N. Hogan St. 8th Floor
Jacksonville, FL 32202

Prepared By:

NATE SWAIN
Sales Representative
swrep7820@sherwin.com

SCHEDULE

Interior Finishes

New Drywall and Previously Painted Surfaces

Primer: B28WX0600 - PROGREEN 200 PRMR BB

note: 1st coat (This material is used as the primer coat on new dry wall)

Finish: B30W00651 - ProGreen 200 Low VOC Interior Latex Flat Extra White

Apply as Finish coat on all new drywall.

Only One finish coat will be appropriate if painting over previosly painted surfaces. Dark Colors may require two finish coats to achieve a uniform opauqe finish.

Wood, Door Trim ect...

Primer: B30W00651 - ProGreen 200 Low VOC Interior Latex Flat Extra White

One coat of wall paint as primer over new doors and trim.

Finish: B31W00651 - ProGreen 200 Low VOC Interior Latex Semi-Gloss Extra White

One coat over previosly painted; 2nd coat to finish primed new wood doors and trim.

Exterior Finishes

Masonry

Finish: B02WW0551 - Dura-Craft Exterior 100% Acrylic Flat Extra White

Wood

Finish: B02WW0551 - Dura-Craft Exterior 100% Acrylic Flat Extra White

Painter may choose to use satin finish on Trim and Body of the houses.

Steel and Metal Doors, Rails ect...

Finish: B21WW0171 - Dura-Craft Exterior 100% Acrylic Semi-Gloss Extra White

Prime any new unprimed surface with appropriate primer and top coat with Duracraft Semi-gloss.

END OF SECTION

SURFACE PREPARATION

1) Block (Cinder and Concrete)

Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F.The pH of the surface should be between 6 and 9,unless the products to be used are designed to be used in high pH environments such as Loxon. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a patching compound such as ConSeal.

2) Brick

Must be free of dirt, loose and excess mortar, and foreign material. All brick should be allowed to weather for at least one year followed by wire brushing to remove efflorescence. Treat the bare brick with one coat of Loxon Exterior Acrylic Masonry Primer, or Loxon Conditioner.

3) Drywall (Interior and Exterior)

Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.

4) Galvanized Metal

Allow to weather a minimum of 6 months prior to coating. Clean per SSPC-SP1 using detergent and water or a degreasing cleaner, then prime as required. When weathering is not possible or the surface has been treated with chromate's or silicates, first Solvent Clean per SSPC-SP1 and apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.

5) Previously Coated Surfaces

Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Thorough washing with an abrasive cleanser will clean and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required.

6) Hand Tool Cleaning

Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Before hand tool cleaning, remove visible oil, grease, soluble residues, and salts by the methods outlined in SSPC-SP1. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No. 2 (SSPC-SP2)

7) Water Blasting NACE Standard RP-01-72

Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

8) Wood (Exterior)

Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

9) Wood (Interior)

All finishing lumber and flooring must be stored in dry, warm rooms to prevent absorption of moisture, shrinkage, and roughening of the wood. All surfaces must be sanded smooth, with the grain, never across it. Surface blemishes must be corrected and the area cleaned of dust before coating.

END OF SPECIFICATION

Data Pages

101.10

PROGREEN 200™

LOW VOC INTERIOR LATEX FLAT

B30-600 SERIES

SHERWIN WILLIAMS.

As of 09/22/08, Complies with:			
OTC	Yes	LEED® CIv2.0	Yes
SCAQMD	Yes	LEED® NCv2.2	Yes
CARB	Yes	LEED® CSv2.0	Yes
MPI Spec #	No	LEED® H	Yes
NAHB	Yes		

CHARACTERISTICS

ProGreen 200 Low Odor Interior Latex Flat is a durable, professional quality, interior vinyl acrylic finish for use on walls and ceilings of primed plaster, wallboard, wood, masonry, and primed metal.
You can use this product, without typical odor complaints, in occupied areas because of the very low odor during application and drying.

ProGreen 200 Low Odor Interior Latex Flat meets or exceeds the criteria set forth by the U. S. Green Building Council LEED-CI, Version 2.0 and LEED-NC Version 2.2. All results have been verified by our ISO 9001 Laboratory.

Color: Most colors
To optimize hide and color developement, always use the reccommended P-Shade primer
Coverage: 350 - 400 sq ft/gal @ 4 mils wet; 1.8 mils dry
Drying Time, @ 77°F, 50% RH:
Touch: 1 hour
Recoat: 4 hours
Drying and recoat times are temperature, humidity, and film thickness dependent
Finish: 1-3 units @ 85°
Flash Point: N/A
Tinting with Blend-A-Color:

Base	oz/gal	Strength
Extra White	0-6	125%
Deep Base	5-12	100%

Vehicle Type: Vinyl Acrylic
B30W00651
VOC (less exempt solvents): 44 g/L; 0.37 lb/gal
Volume Solids: 44 ± 2%
Water Vapor Permeance
ASTM E96 A 9.8 perms
Weight Solids: 62 ± 2%
Weight per Gallon: 12.7 lb

SPECIFICATIONS

Block
1 ct. PrepRite Block Filler
2 cts. ProGreen 200 Interior Latex Flat

Drywall
1 ct. ProGreen 200 Low VOC Interior Latex Primer
2 cts. ProGreen 200 Interior Latex Flat

Plaster
1 ct. PrepRite Masonry Primer
or PrepRite Wall and Wood Primer
2 cts. ProGreen 200 Interior Latex Flat

Masonry
1 ct. PrepRite Masonry Primer
2 cts. ProGreen 200 Interior Latex Flat

Wood
1 ct. PrepRite Wall and Wood Primer
or PrepRite Classic Primer
2 cts. ProGreen 200 Interior Latex Flat

SURFACE PREPARATION

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc. with the appropriate primer/sealer.

Drywall
Fill cracks and holes with patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block
All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with PrepRite® Masonry Primer.

continued on back

101.10

PROGREEN 200™

LOW VOC
INTERIOR LATEX FLAT
B30-600 SERIES

SURFACE PREPARATION

Plaster
Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

Wood
Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

Mildew
Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking
Gaps between walls, ceilings, crown moldings, and other interior trim can be filled with the appropriate caulk after priming the surface.

APPLICATION

Apply at temperatures above 50°F.
No reduction needed.
Brush
Use a nylon/polyester brush.
Roller
Use a 3/8" - 3/4" nap synthetic cover.
Spray—Airless
Pressure ..... 2000 psi
Tip ..... .017"-.021"

CLEANUP INFORMATION

Clean spills, spatters, hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

CAUTIONS

For interior use only
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
HOTW 09/22/2008 B30W00651 03 00

101.37

PROGREEN 200™

LOW VOC INTERIOR LATEX SEMI-GLOSS B31-600 SERIES

SHERWIN WILLIAMS.

As of 09/22/08, Complies with:			
OTC	Yes	LEED® CIv2.0	Yes
SCAQMD	Yes	LEED® NCv2.2	Yes
CARB	Yes	LEED® CSv2.0	Yes
MPI Spec#	43,52,54	LEED® H	Yes
NAHB	Yes		

CHARACTERISTICS

ProGreen 200 Low Odor Interior Latex Semi-Gloss is a durable, professional quality, interior vinyl acrylic finish, *formulated without silica*, for use on walls, ceilings, and trim of primed plaster, wallboard, wood, masonry, and primed metal.
You can use this product, without typical odor complaints, in occupied areas because of the very low odor during application and drying.

ProGreen 200 Semi-Gloss meets or exceeds the criteria set forth by the U. S. Green Building Council LEED-CI, Version 2.0 and LEED-NC Version 2.2. All results have been verified by our ISO 9001 Laboratory.

Color: most colors
Coverage: 350 - 400 sq ft/gal @ 4 mils wet; 1.6 mils dry
Drying Time, @ 77°F, 50% RH:
Drying and recoat times are temperature, humidity, and film thickness dependent.
Touch: 1 hour
Recoat: 4 hours
Finish: 25-35 units @ 60°
Flash Point: N/A
Tinting with Blend-A-Color:

Base	oz/gal	Strength
Extra White	0-5	100%
Deep Base	4-12	100%

Vehicle Type: Vinyl Acrylic
B31W00651
VOC (less exempt solvents): 46 g/L; 0.39 lb/gal
Volume Solids: 42 ± 2%
Water Vapor Permeance
ASTM E96 A 4.4 perms
Weight Solids: 53 ± 2%
Weight per Gallon: 10.3 lb

SPECIFICATIONS

Block
1 ct. Loxon Block Surfacer
2 cts. ProGreen 200 Low VOC Interior Latex Semi-Gloss

Drywall
1 ct. ProGreen 200 Low VOC Interior Latex Primer
2 cts. ProGreen 200 Low VOC Interior Latex Semi-Gloss

Plaster
1 ct. PrepRite Wall & Wood Primer
or PrepRite Masonry Primer
2 cts. ProGreen 200 Low VOC Interior Latex Semi-Gloss

Masonry
1 ct. PrepRite Masonry Primer
2 cts. ProGreen 200 Low VOC Interior Latex Semi-Gloss

Wood
1 ct. PrepRite Wall & Wood Primer
or PrepRite Classic Primer
2 cts. ProGreen 200 Low VOC Interior Latex Semi-Gloss

SURFACE PREPARATION

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc. with the appropriate primer/sealer.

Drywall
Fill cracks and holes with patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block
All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with PrepRite® Masonry Primer.

continued on back

101.37

PROGREEN 200™

LOW VOC

INTERIOR LATEX SEMI-GLOSS

B31-600 SERIES

SURFACE PREPARATION

Plaster
Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

Wood
Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

Mildew
Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking
Gaps between walls, ceilings, crown moldings, and other interior trim can be filled with the appropriate caulk after priming the surface.

APPLICATION

Apply at temperatures above 50°F.
No reduction needed.
Brush
Use a nylon/polyester brush.
Roller
Use a 1/4" - 3/4" nap synthetic cover.
Spray—Airless
Pressure ..... 2000 psi
Tip ..... .017"-.021"

CLEANUP INFORMATION

Clean spills, spatters, hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

CAUTIONS

For interior use only.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
HOTW 09/22/2008 B31W00651 04 00

Technical Data Sheet

Dura-Craft™ Exterior 100% Acrylic Flat B2 Series

Dura-Craft Exterior 100% Acrylic Flat is designed to meet the demands of the New Multi-Family and New Residential Home construction markets. This product is recommended for use on new wood, brick, stucco, metal, as well as properly prepared previously painted surfaces.

PRODUCT CHARACTERISTICS

Color	Most Colors	
Sheen:	0-5 units @ 85°	
Coverage:	350-400 sq. ft./gal 4.0 mils wet; 1.0 mils dry	
Drying Time: @ 77°F, 50% RH	To Touch: To Recoat:	1 hour 4 hours
Flash Point:	N/A	

Tinting Information:	oz/gal	Strength
Extra White	0-4	100%
Deep Base	4-8	100%

B02WV0160

Volume Solids:	31% ± 2%
Weight Solids:	48% ± 2%
Weight per Gallon:	10.9 lb
VOC: (less exempt solvents)	148 g/L; 1.24 lb/gal

APPLICATION

Brush:	No reduction necessary. Use a nylon polyester brush.
Roller:	No reduction necessary. Use a 3/8” to ¾” synthetic cover
Spray—	Airless
Reduction:	Not recommended
Pressure:	2000 psi
Tip:	.015’’ to .019’’

APPLICATION SPECIFICATIONS

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

Aluminum and Galvanized Steel:
Wash with a ProClean Professional® Prep Wash Concentrated Cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Masonry, Concrete, Cement, Block:
All new surfaces must be cured according to the supplier’s recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon® Masonry Primer. Repair cracks, voids, and other holes with ConSeal® Patches and Sealants.

Steel:
Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.

Stucco:
Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Masonry Primer.

Wood:
Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

Vinyl:
Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Mildew:
Remove before painting by washing with ProClean Professional® Mildew Eliminator or a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking:
Gaps between windows, doors, trim, and other through-wall openings can be filled with Pro Select® Premium Siliconized Acrylic Latex Caulk 1100A after priming the surface.

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. Flush spray equipment after cleaning with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

CAUTIONS

For exterior use only.
Protect from freezing.
Non-photochemically reactive.
See label for additional cautions
DO NOT TAKE INTERNALLY.
KEEP OUT OF THE REACH OF CHILDREN.
27 00 B02WV0160 4/17/2003

PRODUCTS:

Color	Rex	SMIS	Size
White	B02WV0160	6011-24746	1's
White	B02WV0160	6011-24753	5's
Extra White	B02WW0551	6011-37011	1's
Extra White	B02WW0551	6011-37029	5's
Deep Base	B02WW0553	6011-37276	1's
Deep Base	B02WW0553	6011-37284	5's

Technical Data Sheet

Dura-Craft™
Exterior 100% Acrylic Semi-Gloss
B21 Series

Dura-Craft Exterior 100% Acrylic Semi-Gloss is designed to meet the demands of the New Multi-Family and New Residential Home construction markets. This product is recommended for use on new wood, brick, stucco, metal, as well as properly prepared previously painted surfaces.

PRODUCT CHARACTERISTICS

Color	Most Colors	
Sheen:	35-45 units @ 60°	
Coverage:	350-400 sq. ft./gal 4.0 mils wet; 1.3 mils dry	
Drying Time: @ 77°F, 50% RH	To Touch: To Recoat:	1 hour 4 hours
Flash Point:	N/A	

Tinting Information:	oz/gal	Strength
Extra White	0-4	100%
Deep Base	4-8	100%

B21WW0160

Volume Solids:	39% ± 2%
Weight Solids:	48% ± 2%
Weight per Gallon:	9.7 lb
VOC: (less exempt solvents)	137 g/L; 1.14 lb/gal

APPLICATION

Brush:	No reduction necessary. Use a nylon polyester brush.
Roller:	No reduction necessary. Use a 3/8" to ¾" synthetic cover

Spray—Airless

Reduction:	Not recommended
Pressure:	2000 psi
Tip:	.019'' to .021''

APPLICATION SPECIFICATIONS

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

Aluminum and Galvanized Steel:
Wash with a ProClean Professional® Prep Wash Concentrated Cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Masonry, Concrete, Cement, Block:
All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon® Masonry Primer. Repair cracks, voids, and other holes with ConSeal® Patches and Sealants.

Steel:
Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.

Stucco:
Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Masonry Primer.

Wood:
Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

Vinyl:
Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Mildew:
Remove before painting by washing with ProClean Professional® Mildew Eliminator or a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking:
Gaps between windows, doors, trim, and other through-wall openings can be filled with Pro Select® Premium Siliconized Acrylic Latex Caulk 1100A after priming the surface.

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. Flush spray equipment after cleaning with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

CAUTIONS

For exterior use only.
Protect from freezing.
Non-photochemically reactive.
See label for additional cautions
DO NOT TAKE INTERNALLY.
KEEP OUT OF THE REACH OF CHILDREN.
32 00 B21WW0160 4/17/2003

PRODUCTS

Color	Rex	SMIS	Size
White	B21WW0160	6011-25420	1's
White	B21WW0160	6011-25438	5's
Extra White	B21WW0171	6011-36971	1's
Extra White	B21WW0171	6011-36906	5's
Deep Base	B21WW0173	6011-37235	1's
Deep Base	B21WW0173	6011-37243	5's

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All bathrooms shall have at least one towel bar, one toilet paper holder, and one medicine cabinet. Additionally, each shower and/or tub/shower combo shall have at least one towel bar and one soap dish integrated into the tile work.

B. All shower units shall have a glass enclosure in accordance with specifications below. Tub/shower combos may have only a curtain rod.

C. Each bathroom shall have a vanity mirror at least twenty-four (24) inches wide x forty-two (42) inches high.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Ceramic - Baked-Enamel Finish: Factory-applied, gloss, baked-acrylic-enamel coating.

B. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 4.0-5.0 mm thick.

C. Chrome Finished:

D. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

E. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.2 TOILET AND BATH ACCESSORIES

A. Manufacturers:
1. Delta
2. Dal-Tile
3. NuTone
4. Other Comparable

B. Toilet Tissue Dispenser:
1. Basis-of-Design Product: Delta Lahara Series
2. Type: Single-roll dispenser
3. Mounting: Surface mounted with concealed anchorage
4. Material: Chrome-plated zinc alloy (zamac) or steel

5. Operation: Noncontrol delivery with standard spindle
6. Capacity: Designed for 4-1/2- or 5-inch- diameter-core tissue rolls
7. **See ATTACHED for recommendation and pricing**

C. Glass Shower Doors:

1. Basis-of-Design Product: Signature Pivot Enclosures
2. Material and Finish: Extruded aluminum brite dip anodized with polished finish
3. Glass: Clear or patterned and shall be 3/8” or ½” safety tempered glass

D. Medicine Cabinet (recessed mount):

1. Basis-of-Design Product: NuTone Perfect Square
2. Mounting: Recessed for nominal 4-inch wall depth (wall opening – 14w x 4d x 24h).
3. Size: Minimum 16w x 4-1/2d x 26h
4. Door: Frameless 1” beveled edge mirror door with reversible side hinges and magnetic door catch.
5. Shelves: Minimum two (2).

E. Medicine Cabinet (surface mount):

1. Basis-of-Design Product: NuTone Contempra
2. Mounting: Surface mounting style
3. Size: Minimum 24” wide (24w x 4d x 19.25h)
4. Door: Stainless steel frame with dual mirrored sliding-doors.
5. Shelves: Minimum two (2).

F. Soap Dish (in shower):

1. Basis-of-Design Product: Dal-Tile
2. Description: 6-5/8”x 4-3/4”x 3-1/2”
3. Mounting: In thin-set, and grout
4. Material and Finish: Ceramic - Baked-Enamel Finish: Factory-applied, gloss, baked-acrylic-enamel coating.
5. **See ATTACHED for recommendation and pricing**

G. Soap Dish/Toothbrush Holder (in bathroom):

1. Basis-of-Design Product: Dal-Tile
2. Description: 6-5/8”x 4-3/4”x 3-1/2”
3. Mounting: Adhesive and caulk
4. Material and Finish: Ceramic - Baked-Enamel Finish: Factory-applied, gloss, baked-acrylic-enamel coating.

H. Towel Bar (in bathroom):

1. Basis-of-Design Product: Delta Lahara Series
2. Description: 3/4-inch round tube with circular end brackets
3. Mounting: Flanges with concealed fasteners.
4. Length: Minimum of 24 inches if space allows, but in no circumstances less than 18”
5. Material and Finish: Chrome-plated zinc alloy (zamac) or steel.

6. See ATTACHED for recommendation and pricing

I. Towel Bar (in shower):

1. Basis-of-Design Product: Dal-Tile
2. Description: 3/4-inch square tube with rectangular end brackets
3. Mounting: In thin-set, and grout
4. Length: Minimum of 24 inches if space allows, but in no circumstances less than 18”
5. Material and Finish: Ceramic - Baked-Enamel Finish: Factory-applied, gloss, baked-acrylic-enamel coating.

6. See ATTACHED for recommendation and pricing

J. Bathroom Mirrors

a. Glazing Publications: Comply with the following published recommendations:
   1) GANA Mirror Division's "Mirrors, Handle with Extreme Care: Tips for the Professional on the Care and Handling of Mirrors."
   2) GANA Mirror Division recommends that where mastic is used to position mirrors initially on a surface, mechanical devices should also be used. Various mastic products are available. Retain names of manufacturers only after verifying with both mirror manufacturer and mastic manufacturer that mastics proposed for use are compatible with mirror's protective coating and substrates on which mirror will be installed.

b. Mirror Mastic: An adhesive setting compound, asbestos free, produced specifically for setting mirrors and certified by both mirror manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrors will be installed.

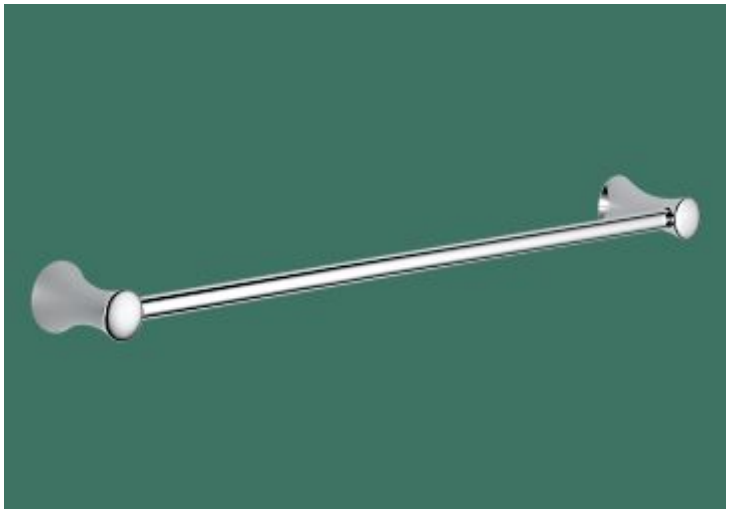
c. Mirror Edge Treatment: Beveled polished edge

d. Seal edges of mirrors with edge sealer after edge treatment to prevent chemical or atmospheric penetration of glass coating.

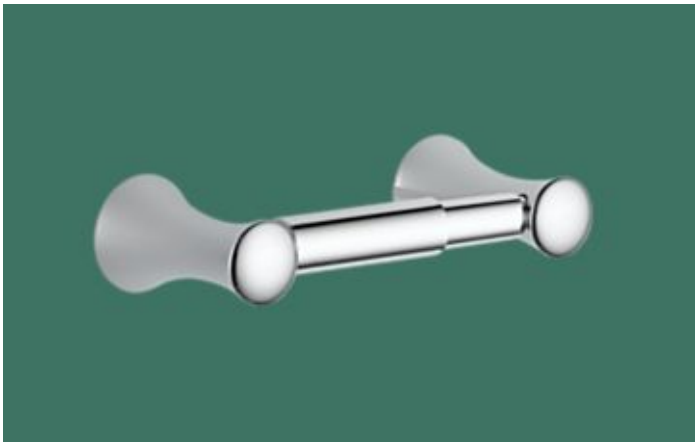
e. Place a felt or plastic pad between mirror and each clip. Locate clips so they are symmetrically placed and evenly spaced

END OF SECTION 102800

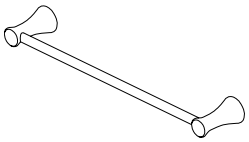
NEIGHBORHOOD STABILIZATION PROGRAM



Location: Bathroom
Model # 73824
Description: Lahara 18 or 24 inch Towel Bar
Finish: Chrome
See Delta Faucets.com



Location: Bathroom
Model # 73850
Description: Lahara Tissue Holder
Finish: Chrome
See Delta Faucets.com



73824

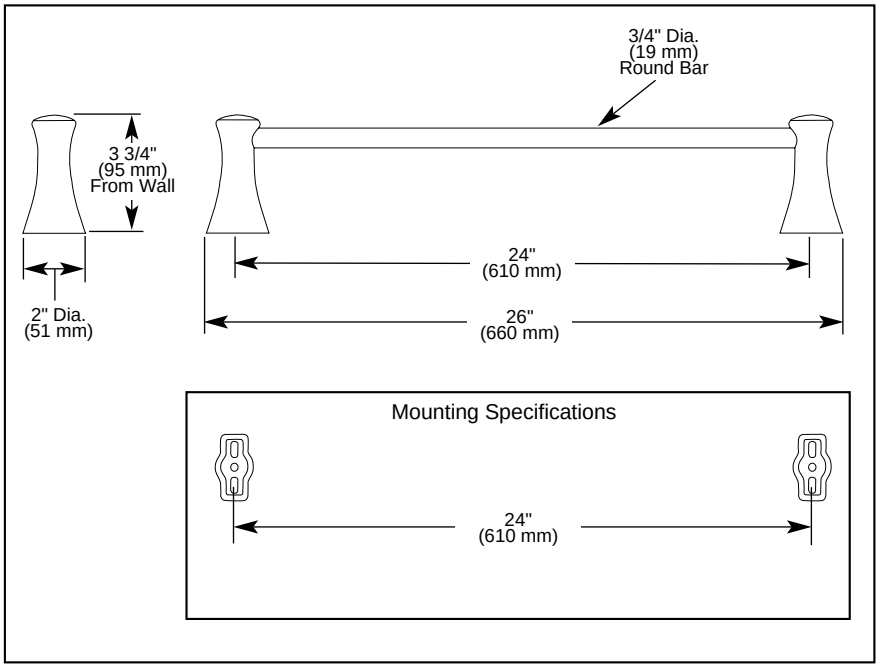
DELTA

ACCESSORIES

- Lahara™ Bath Collection
- 24” Towel bar

Submitted Model No.: _____

Specific Features: _____



STANDARD SPECIFICATIONS:

- *Wood blocking is preferable behind all wall surfaces. If wood blocking is not available, the following fasteners are suggested: Tile/Masonry-Plastic or lead Anchors Plaster/drywall-Toggle bolts.*
- *Mounting hardware and mounting template included with product.*

WARRANTY

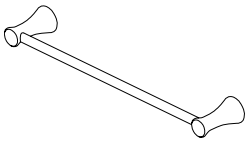
- *Lifetime Faucet and Finish Limited Warranty to the original consumer purchaser to be free from defects in material and workmanship.*
- *5 Year Limited Warranty for usage in all industrial, commercial and business applications.*

Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book for finish options and product availability.

DSP-A-73824 Rev. A

DELTA FAUCET COMPANY

Indianapolis, Indiana 46280
A Division of Masco Corporation of Indiana



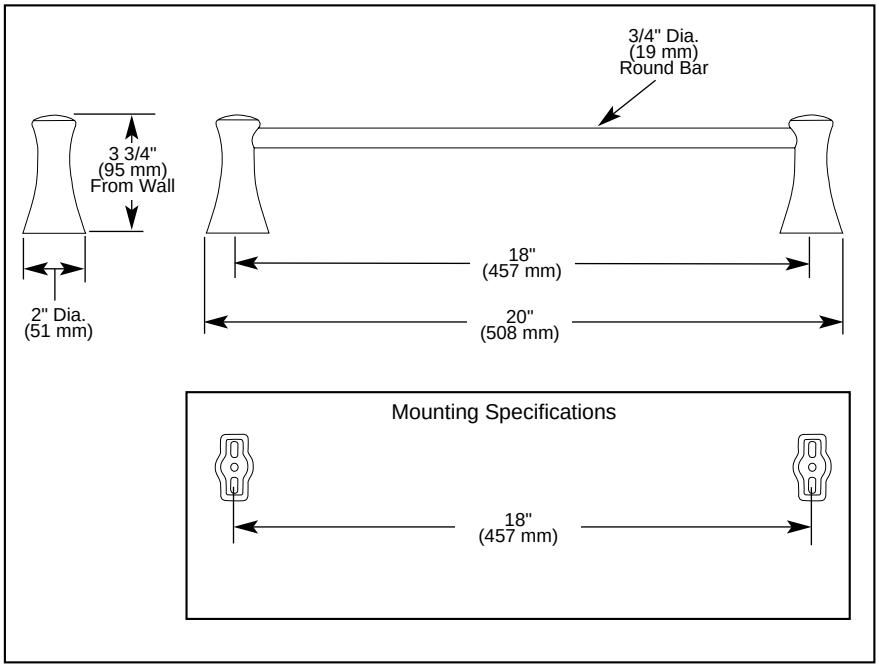
73818

ACCESSORIES

- Lahara™ Bath Collection
- 18” Towel bar

Submitted Model No.: _____

Specific Features: _____



STANDARD SPECIFICATIONS:

- *Wood blocking is preferable behind all wall surfaces. If wood blocking is not available, the following fasteners are suggested: Tile/Masonry-Plastic or lead Anchors Plaster/drywall-Toggle bolts.*
- *Mounting hardware and mounting template included with product.*

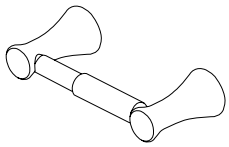
WARRANTY

- *Lifetime Faucet and Finish Limited Warranty to the original consumer purchaser to be free from defects in material and workmanship.*
- *5 Year Limited Warranty for usage in all industrial, commercial and business applications.*

Delta reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book for finish options and product availability.

DSP-A-73818 Rev. A

Indianapolis, Indiana 46280
A Division of Masco Corporation of Indiana



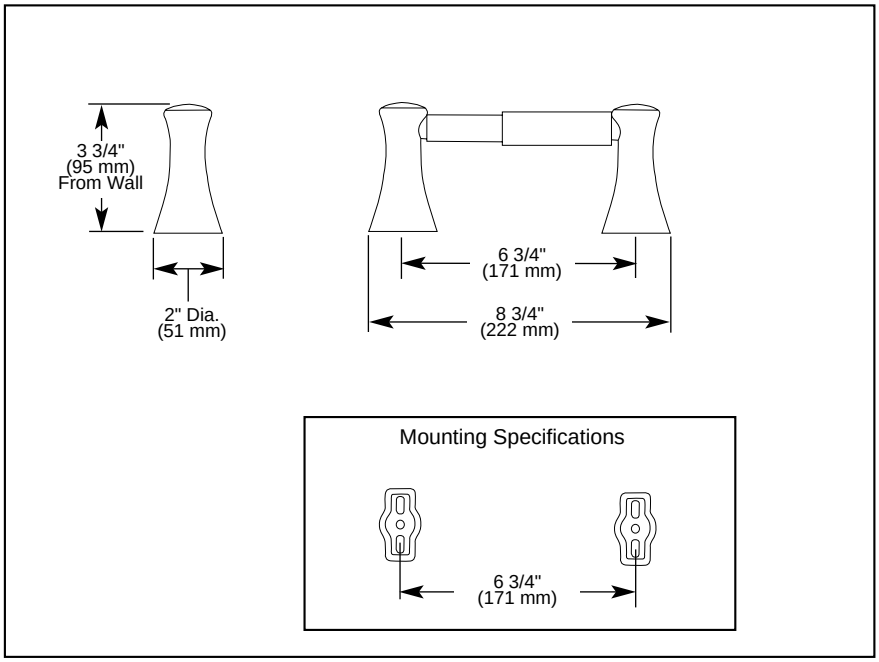
73850

ACCESSORIES

- Lahara™ Bath Collection
- Tissue Holder

Submitted Model No.: _____

Specific Features: _____



STANDARD SPECIFICATIONS:

- *Wood blocking is preferable behind all wall surfaces. If wood blocking is not available, the following fasteners are suggested: Tile/Masonry-Plastic or lead Anchors Plaster/drywall-Toggle bolts.*
- *Mounting hardware and mounting template included with product.*

WARRANTY

- *Lifetime Faucet and Finish Limited Warranty to the original consumer purchaser to be free from defects in material and workmanship.*
- *5 Year Limited Warranty for usage in all industrial, commercial and business applications.*

DELTA FAUCET COMPANY

Indianapolis, Indiana 46280
A Division of Masco Corporation of Indiana

DSP-A-73850 Rev. A

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bathroom
Model # DIN129
Description: NuTone Contempra Medicine Cabinet
See MedicineCabinetShop.com

Location: Bathroom
Model # DIN089
Description: NuTone Perfect Square Recessed Medicine Cabinet
See MedicineCabinetShop.com

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bathroom
Model # 0100BA725CC1P
Description: White 4” x 6” Soap Dish – Wall
See Home Depot Bathroom Accessories

Location: Bathroom
Model # 129466
Description: 24” White Ceramic Towel Bar
See Signature Hardware Bathroom Accessories

SECTION 103100 - MANUFACTURED FIREPLACES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Summary: Wood burning and Gas fireplaces, complete with metal flues, gas vents, or air circulation ducts.

B. All fireplaces and wood burning stoves must have tempered glass doors.

C. No un-vented combustion appliances are allowed (e.g., decorative logs without external venting).

D. See NSP Green Building Practices Handbook, Section 5.1 – Combustion Venting for further requirements.

E. When an existing fireplace is not desired you shall remove the existing chimney to below the roof line. Install a permanent cap on the remaining portion of the chimney. Re-sheet hole in roof with exterior grade plywood and match the existing material. Haul all debris to an approved dump site.

F. If a fireplace/chimney is present the Contractor shall evaluate the structural and functionality of the chimney. If the fireplace seems to be structurally unsound, the Contractor shall engage a licensed structural engineer for a proper repair.

G. In all cases the existing chimney flue shall be cleaned out.

PART 2 - PRODUCTS

2.1 FIREPLACES

A. Available Products:

1. Isokern
2. Heat & Glo

B. UL Listing: Provide fireplaces that are UL listed.

C. Gas Fireplaces: Comply with NFPA 54, "National Fuel Gas Code."

D. Fireplaces: Factory fabricated**,** metal units designed so that they may be installed with **1-inch** clearance from combustible materials at concealed backs and sides.

1. Openings: Front only.
2. Front Opening Dimensions: Match existing if damaged.

3. Firebox Depth: Match existing.
4. Lining: Match existing.
5. Grilles: Black finished grilles at top and bottom of firebox opening or match existing.
6. Air Circulation Ducts and Grilles: Provide air that complies with requirements of UL listing for the fireplaces they are connected to.

E. Screens: Sliding metal black finished screens at openings with polished brass or black finished trim.

F. Hearth: Provide a hearth if non-existent as per local building code.

G. Accessories:

1. Metal grate required with ember retainer.
2. Gas logs. Comply with NFPA 54, "National Fuel Gas Code."
3. Gas log-lighter. Comply with NFPA 54, "National Fuel Gas Code."

H. Metal Flue:

1. Insulated double wall unit complying with requirements in Division 23 Section "Breechings, Chimneys, and Stacks." Provide metal flues and gas vents that are UL listed and comply with requirements of UL listing for the fireplaces they are connected to.
2. Include fire stop spacers at each floor/ceiling, attic insulation shield, braces and hangers, chimney flashing, and chimney cap.
3. No vent-less Gas Fireplaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, with required clearances and anchor securely in place.

B. Install metal flues, gas vents, air circulation ducts and grilles with required clearances and securely fastened in place.

C. Install appurtenances and accessories with units ready for use.

END OF SECTION 103100

SECTION 105723 - CLOSET AND UTILITY SHELVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All bedroom closets shall contain at least one row of 12" wide ventilated, free-slide shelving from wall to wall at five (5') feet, six (6") inches from the floor.

B. All linen closets shall contain at least five (5) rows of ventilated shelving

C. Pantries shall contain at least five (5) rows of tight-mesh ventilated shelving.

D. Wood shelving is acceptable and each closet shall have a clothes rod five (5') feet, four (4") inches from the floor with all standard trim installed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Wire: ASTM A 853.

2.2 WIRE CLOSET SHELVING

A. Products:

1. ClosetMaid – Total Slide (bedroom)
2. ClosetMaid – Close Mesh (pantry)
3. ClosetMaid – Linen (laundry and linen closet)

B. Structural Performance: Wire closet shelving system shall be capable of supporting the following weight per unit length:

1. With shelf supported by walls at both ends:
   a. Shelves 36 Inches or Less in Length: 60 lb/ft.
   b. Shelves 37 to 48 Inches in Length: 55 lb/ft.
   c. Shelves 49 to 60 Inches in Length: 50 lb/ft.
   d. Shelves 61 Inches or More in Length: 40 lb/ft.
2. With shelf supported by a wall at one end only:
   a. Shelves 36 Inches or Less in Length: 50 lb/ft.
   b. Shelves 37 to 48 Inches in Length: 45 lb/ft.

c. Shelves 49 to 60 Inches in Length: 40 lb/ft.
d. Shelves 61 Inches or More in Length: 35 lb/ft

3. With shelf not supported by a wall at either end:

a. Shelves 36 Inches or Less in Length: 45 lb/ft.
b. Shelves 37 to 48 Inches in Length: 40 lb/ft.
c. Shelves 49 to 60 Inches in Length: 35 lb/ft.
d. Shelves 61 Inches or More in Length: 30 lb/ft.

C. Wire closet shelving, made from steel wire spaced not more than 1 inch o.c. (except Close Mesh pantry shall be minimum 5/8”) and welded to longitudinal steel wire rods. Provide longitudinal wire rods at shelf edges and corners of lips, with not less than four longitudinal wire rods per shelf. Provide minimum 12-inch wide shelves unless otherwise indicated. Provides units complete with brackets, fasteners, end caps, and accessories indicated. Bedroom closets shall be TOTALSLIDE.
1. Provide fixed (nonadjustable) units.
2. Provide units with rod for clothes hangers.
3. Provide units with longitudinal wire rods on tops of shelves to allow objects to slide easily along length of shelf.

2.3 FINISHES

A. Wire Shelving Finish: White vinyl applied over cleaned and conversion-coated metal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units in configurations indicated, complete with accessories indicated, and ready for use.

B. Install unit’s level, plumb, and true to line, without warp or rack and anchor securely in place.

C. Repair, refinish, or replace wire closet shelving damaged during installation, as directed by Architect.

D. Each bedroom closet, and any other closet shall contain shelving from wall to wall. If there is a walk-in closet, a minimum of two walls shall contain shelving.

E. Laundry Room/Area shall contain shelving

F. Dedicated Linen closet and pantry shall contain a minimum of five shelves.

END OF SECTION 105723

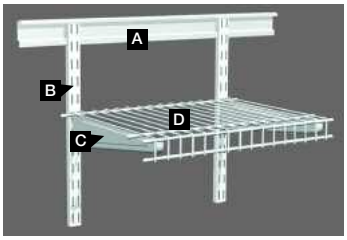
CLOSETMAID®

Wire Shelving Specifications

Summary of Key Components

Mounting Systems

Adjustable ShelfTrack™ Hardware System



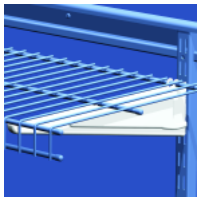
- **A** HangTrack
- **B** Standard
- **C** Bracket
- **D** Shelving

Hang Track
Use to hang Standards. Creates one step leveling and eliminates the need to install each Standard separately which reduces installation time. Available in 40" and 80" lengths.

Toggle Bolts
Use for drywall installations.

Screws & Anchors
Use for concrete and masonry installations.

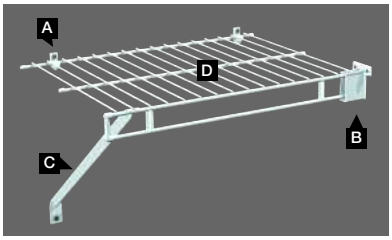
Standard
Attaches to Hang Track. Provides adjustable height options for hanging Shelving. Space Standards no more than 24" apart and no more than 6" from each end of Shelf. Available in 12", 30", 48", 60" and 84" lengths.



Bracket
Attaches to Standard to support Shelving. Use a Bracket that is the same depth as your Shelving. Available in 12",16" and 20" sizes. (Exception: 16" Shelf & Rod installation requires a 12" Bracket.)

Shoe Shelf Support
Attaches to Standard to support Shelf at an angle for shoes. Shelf should be installed lip up to keep shoes in place.

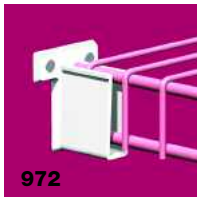
Fixed Mount Hardware System



- **A** Wall Clip
- **B** Side Wall Bracket
- **C** Support Bracket
- **D** Shelving

Pre-Loaded Wall Clip
Attaches to the back of Shelving to anchor Shelf to the wall. Use 1 Wall Clip every 12" and 1 at each end. Available for concrete/stud and drywall installations.

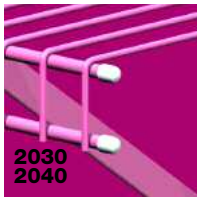
Support Bracket
Supports front lip of Shelving. Use 1 Shelf Support Bracket every 36" and 1 at each end. Available in 12", 16" and 20" lengths.



Pre-Loaded Sidewall Bracket
Supports front lip of Shelving where it meets a sidewall.

TotalSlide™ version: 988

Pre-Loaded Wall Anchor
Use to affix Support Bracket to wall.



Small End Caps
Large End Caps
Use on cut ends of Shelving to protect clothing. Available in large (Shelf & Rod Shelving) and small (SuperSlide, Close Mesh & Shelf & Rod Shelving) sizes.

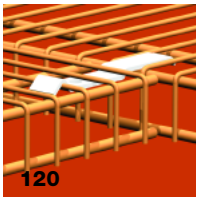
Pre-Loaded Down Clip
Attaches to the back of Shelving to anchor Shelf to wall.

S&R Shelf End Cap
Use on cut ends of Shelf & Rod shelving to protect clothing.

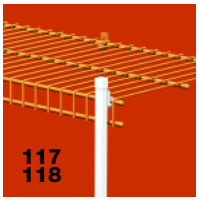
TotalSlide™ version: 969

Optional Hardware

Multi-Purpose Wire Clip
Attaches to the back of Shelving to secure Shelf to the wall. Clips lock Shelving into place.
Use 1 Clip every 12" and 1 at each end. Use with or instead of Wall Clips.



Corner Support
For corner installations. Supports front lip of Shelving to keep it level where it meets another Shelf in the corner.



1/2" Square Aluminum Pole 71" & 85"
Use in place of Support Brackets when stacking 2 or more Shelves.

Universal Joiner Plate
Use to join two Shelves together to create a continuous run of Shelving.

Universal Shelf Support
Attaches to the back of the Shelving to support Shelf at an angle for shoes. Shelf should be installed lip up using Wall Clips to keep shoes in place.

Pole Clip
Attaches to Pole to support Shelving in a center stack.

S&R Version: 977

Linen/SuperSlide® Version: 978

TotalSlide™ Version: 952

Shelving Types

SuperSlide®
The top-of-the-line, continuous-slide closet solution. Available in 12" and 16" depths. Use in conjunction with SuperSlide® hardware.

TotalSlide™
Our quickest and easiest to install, one-piece, continuous-slide closet solution. Available in 12" and 16" depths.

Shelf & Rod
The economical closet solution. Available in 10" 12", and 16" depths with your choice of 10" or 12" hang bar location as measured from the back wall.

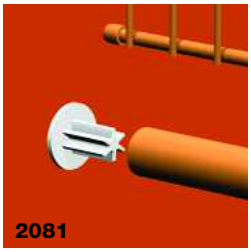
Close Mesh
Works best with ShelfTrack™ for storing small pantry items. Deck wires are 5/8" on center vs.1" on center on all other shelving. Available in 6", 9", 12", 16" and 20" depths.

Linen
The perfect answer to every basic shelving need in every room. Available in depths of 6", 9", 20" and 12" double lip.

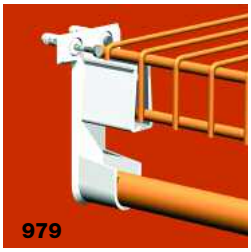
SuperSlide® Hardware

SuperSlide® Rod Support
Attaches to SuperSlide Shelving to support Closet Rod. Use 1 every 36" and at each end.
Metal version: 5672

3/4" Closet Rod
Snaps into Rod Support to allow hangers to slide without interruption.



Internal Closet Rod Cap
Use on ends of Closet Rods to keep hangers on rod.



Pre-Loaded Side Wall Bracket
Supports Shelf and Closet Rod at wall.

SuperSlide® Corner Rounder & Corner Shelf
Use in corner to connect SuperSlide Shelving to create continuous sliding of hangers around corners.

Installation and Materials Specifications

Components provide for ClosetMaid® shelving installation to drywall without requiring mounting to wall studs.

Shelves are to be attached to walls with ClosetMaid® Wall Clips, End Brackets, Support Brackets and Poles. 1/4" holes are to be drilled with a sharp drill bit for all wall attachment hardware. DO NOT PUNCH.

Lightning Wall Clips to hold back of shelf:
Place Wall Clips #910, #911 every 10" to 12" apart on level line or use Lightning Templates #9037 and #9038.

End Brackets to support the front of the shelves:
Install on the same level line as the Wall Clips and center on the front rods of the shelves. All shelves must be front supported a maximum of every 36" with an End Bracket, Support Bracket or Pole. End Brackets #972, #973, #974.

Drywall:
Drill 1/4" hole, insert #910 or #911 Wall Clip. Use #8 pin to expand anchor.

Wood:
Drill 1/4" hole into wood. Secure Wall Clip with #8 1" screw, or secure Pole Clip #978 directly to wood with #8 11/4" screw.

Concrete:
Drill 1/4" hole with masonry bit. Insert Wall Clip #910, secure with #8 1" screw.

Standards and Brackets:
Vertical installation of Standards no more than 24" apart on studs. Horizontal Track Mount, level track, secure with screws and/or mollies in studs or drywall. Attach Shelf Brackets which can be used with SuperSlide®, Heavy Duty, Linen, Shelf & Rod™ and Close Mesh 12", 16", or 20" Decking.

Pole:
Use Lightning Pole Clip #978 for Linen Shelving or SuperSlide® and Clip #977 for Shelf & Rod™ shelving on pole #117 or #118. Pole #118 recommended for SuperSlide® shelving installation.

Shelf Support:
Support Brackets #1164 or #1166 are to be placed vertically to the shelf and attach with #954 or #955 Wall Anchor. Down Clips #983, /#978 or Cable Clip #312 are to be installed with 1/4" anchor on the back rod behind every Support Bracket. Place every 36" maximum, 24" minimum for heavy loads.

Corner Support Brackets:
Use on all corner "Butt" Joints #120.

Wall to Wall Installation:
Use Lightning End Bracket #972 or #973. Drill 1/4" holes, secure with #8 Pin.

Cutting Shelves:
Shelves are to be cut 1/2" to a maximum of 1-3/8" shorter than the actual wall measurements or the desired shelf length. All exposed cut ends are to be capped.

SuperSlide® Component Installation:
Place Hang Bar Supports #5647 every 24" to 36" (place Support Bracket #1164 adjacent to support) use SuperSlide® End Bracket #979 or #980 at side wall where pole is used. Use 12" Support Brackets for 12" or 16" depth shelves. Place Pole Caps #2083 on cut end of pole. Use Pole Connector #2085 to connect 2 pieces of 3/4" Hang Bar #2080. When using Pole Connector, joint must rest in #5647 bracket. For wall installation, use End Bracket #979 or #980. Down Clips #978, #983 or #312 must be used on all open end installations.

TotalSlide™ Component Installation
Use Side Wall Bracket #988 or #987; Pole Clip #952 or #951; and Shelf Stop #969.

General Specifications:
Furnish and install ClosetMaid® Vinyl-Coated, Steel-Rod, Ventilated Shelving and Storage Systems manufactured by ClosetMaid Corporation, Ocala, Florida, in all closets.

Wire Shelving Physical Properties:

Materials	Grade c-1006 basic cold drawn steel wire
Tensile strength	Over 100,000 PSI (average)
Cross deck spacing	5/8" to 1" increments
Coating	Proprietary polyvinyl chloride formula resin (pvc)
Vinyl thickness	9-11 mills (fluidized bed process)
Mounting hardware	Components shall provide for shelving installation to drywall without requiring mounting to concealed wall structural members. Support brackets shall be required for 36" span.(24" recommended for areas designed for heavy use.)

Coating Specifications:
ClosetMaid® heavy duty vinyl coating won't chip or split. It is a proprietary Polyvinyl Chloride Resin (PVC) with an exclusive mixture of ingredients including plasticizers, stabilizers, pigments and other additives—none of which are listed as hazardous materials on OSHA 29CFR1910.1017.

ClosetMaid's GlideKote is an exclusive, high performance hybrid polyester that is exceptionally strong and durable. GlideKote has an additive that creates a very low coefficient of friction, adding years of performance and ease in sliding.

ClosetMaid's patented plastic components are manufactured to get high performance standards and meet rigid material requirements. Nylon is specified for toughness. Hi-impact styrene is specified for rigid strength. Polypropylene is specified for consistent performance.

For more information visit **www.closetmaid.com/builder_architect**

CLOSETMAID®

P.O. Box 4400
Ocala, FL 34478
1-800-874-0008

FREE REPLACEMENT POLICY

If a ClosetMaid® product does not give the user complete satisfaction when installed in accordance with the manufacturer's instructions, it will be exchanged free of charge. Please note that only the unsatisfactory part in a multi-piece product will be exchanged.

EMERSON

SECTION 107313 - AWNINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Verify dimensions by field measurements before fabrication.

B. Match existing if possible.

PART 2 - PRODUCTS

2.1 AWNINGS

A. Performance Requirements: Provide awnings capable of withstanding design and wind loads as required by City of Jacksonville and Florida building codes.

2.2 AWNING FABRICS

A. Flame-Resistance Ratings: Passes NFPA 701.

B. Fabric Fiber Content: As chosen by the Developer.

1. Fabric Weight: As chosen by the Developer.

2. Bottom Hem: As chosen by the Developer.

2.3 AWNING FRAMES

A. Steel Frames:

1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
2. Cold-Formed Steel Tubing: ASTM A 500.
3. Steel Pipe: ASTM A 53/A 53M.
4. Steel Mechanical Tubing: ASTM A 513.
5. Steel Finish: Galvanized, baked enamel or powder coat.

B. Aluminum Frames: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

1. Aluminum Plate and Sheet: ASTM B 209.
2. Aluminum Extrusions: ASTM B 221.
3. Extruded Structural Pipe and Round Tubing: ASTM B 429.
4. Drawn Seamless Tubing: ASTM B 210.
5. Aluminum Finish: Mill, baked enamel or powder coat.

C. Anchors, Fasteners, Fittings, Hardware, and Installation Accessories: Corrosion-resistant, weather-resistant, non-staining materials. Where exposed to view, provide finish and color as selected.

D. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.

E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 AWNING FABRICATION

A. Fabrics: Reinforce wear points and hardware attachment points with webbing.

B. Fabric Edges and Seams: Folded and stitched, Hot cut and sealed, Radio-frequency welded, or Adhesively bonded.

C. Frames: Preassemble awning frames in the shop to greatest extent possible.

1. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
2. Form exposed work true to line and level with accurate angles and straight edges.
3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Provide weep holes where water may accumulate.
4. Weld corners and connections continuously. At exposed corners and connections, finish exposed welds and surfaces smooth and blended.

D. Colors of Metal and Plastic Components Exposed to View: Matching awning fabric color or as selected by Developer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install awnings securely connected to supports, free of rack, and in proper relation to adjacent construction.

B. Install awnings after other finishing operations, including joint sealing and painting, have been completed.

C. Attach fabric to frames as recommended by fabricator, by stapling into slotted track in frame, using lacing method as required to conceal ends of lacing or using fabric hem pockets to ensure tight, wrinkle-free fit of fabric to frame.

D. Slip fit frame connections accurately together to form hairline joints.

E. Weld frame connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

G. Galvanized Surfaces: Clean field welds, connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 107313

SECTION 113100 - RESIDENTIAL APPLIANCES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Regardless of the condition of existing appliances, the appliances outlined below WILL be installed. The existing appliances are the property of the NSP Developer and he/she may do with them as they wish.

B. Regulatory Requirements: Comply with provisions of the following product certifications:

1. NFPA: Provide electrical appliances listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
2. UL and NEMA: Provide electrical components required as part of residential appliances that are listed and labeled by UL and that comply with applicable NEMA standards.
3. ANSI: Provide gas-burning appliances that comply with ANSI Z21 Series standards.
4. NAECA: Provide residential appliances that comply with NAECA standards.

C. Accessibility: Where residential appliances are indicated to comply with accessibility requirements, comply with ICC/ANSI A117.1.

D. Energy Ratings: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling where applicable. Refrigerator, ceiling fans, clothes washer and dishwasher (6 gal or less per cycle).

E. See NSP Green Building Practices Handbook, Section 3.6 – Appliances for further requirements.

PART 2 - PRODUCTS

2.1 Manufacturer: **KENMORE** (or equivalent)

A. Electric Range: Model #22-95033
B. Microwave/Hood Combination: Model #22-80083
C. Refrigerator/Freezer: Model #46-59123
D. Dishwasher: Model #22-13593
E. Clothes Washer: Model #26-48102
F. Clothes Dryer: Model #26-88042
G. Food Waste Disposer: Model #22-06011

H. Special Product Pricing: Call Brad Becker at Sears for additional information. Cell – 904-233-7983, Fax 904-485-8687

2.2 RESIDENTIAL APPLIANCES

A. Manufacturer: **KENMORE** or equivalent

B. Electric Range: 30-inch wide, manual clean, electric, freestanding, slide-in range, with 4 radiant elements.

a. Color: Stainless Steel
b. Ceramic radiant glass elements
c. Size: 4.6 cubic feet
d. Anti-tip device
e. Electronically controlled thermostat
f. Bake element rated at 2600watts & broiler element rate at 3000watts
g. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

C. Microwave Oven: All in one unit under-cabinet microwave-hood Combination.

a. Color: Stainless Steel
b. Size: Minimum 1.7 cubic foot
c. Re-circulating, non-venting exhaust hood
d. Minimum 1100 Watts
e. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

D. Refrigerator/Freezer: Freestanding, two-door side-by-side freezer, with water filtration

a. Color: Stainless Steel
b. Size: Minimum 21.7 cubic foot, as space allows
c. Frost Free
d. Glass adjustable shelves
e. Water/Ice Dispenser
f. Water filtration system
g. Humidity controlled Crisper
h. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

E. Dishwasher: 24” Built-in, under counter, automatic dishwasher

a. Color: Stainless Steel
b. Automatic Temperature Control
c. Quiet Guard
d. Ultra Wash
e. Five (5) wash cycles
f. Hot-air and Heat-off drying cycles
g. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

F. Clothes Washer: Freestanding, high-efficiency, front-loading, automatic clothes washer.

a. Color: White

b. Size: 3.5 cubic feet
c. Automatic water level
d. 4 water temperatures
e. Delay wash
f. Variable motor spin
g. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

G. Electric Clothes Dryer: Freestanding, front-loading clothes dryer.

a. Color: White
b. Size: 5.8 cubic feet
c. Soft Heat Technology
d. Timed Dry
e. End Cycle Signal
f. Moisture sensor
g. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

H. Food Waste Disposer: Built-in, under sink unit.

a. Motor Horsepower: minimum ½
b. Continuous feed
c. Dishwasher drain connection
d. See ATTACHED sheet for pictures, negotiated pricing, and additional options.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Built-in Appliances: Securely anchor to supporting cabinetry or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.

B. Freestanding Appliances: Place in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.

C. Test each item of residential appliances to verify proper operation. Make necessary adjustments.

D. Install Non-Tip Device on Range Oven.

E. Verify that accessories required have been furnished and installed.

END OF SECTION 113100

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 22-95033
Description: 30” Freestanding Range, Time and Power Level Control, Child Lock-out

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 22-80083
Description: 30**”** Microwave Hood Combination, 1100 Watts, 400 cfm vent, 10 Power Levels, Auto Sensor Cooking, Night Light, & Halogen Cooktop Light.

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 46-59123
Description: Side by Side Refrigerator, Ice and Water Filtration, Lighted Ice\Water Dispenser, 4 Glass Shelves, Energy Star Qualified.

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 22-13593
Description: Ultrawash Dishwasher, 5 cycles, Touch Pad, Sani Rinse, Time Delay.

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 26-48102
Description: Frontload Washer, 12 wash cycles, 5 spin cycles, 4-8-12 hour delay

Brand: Kenmore
Model # 26-88042
Description: Frontload Dryer, 7 cycles, 4 temperatures, 7 Electronic Moisture Sensor

NEIGHBORHOOD STABILIZATION PROGRAM

Brand: Kenmore
Model # 22-6011
Description: ½ hp Induction Motor with Continuous Feed

SPECIAL KENMORE APPLIANCE PRICING
for the Neighborhood Stabilization Program

SEARS offers the Best Parts & Service in the Appliance Industry.

Kenmore Refrigeration	Model #	Cat Page	Price
Side by Side 21.7 Cu. Ft	46-59123		$1,149.00
Top Freezer 21 Cu. Ft.	46-78173		$659.00
Bottom freezer 19 Cu. Ft.	46-76053		$1,294.00

Energy Star Dishwashers	Model #	Cat Page	Price
Ultra Dish Washer	22-13593	64	$324.00

Kenmore Free-Standing Electric Ranges	Model #	Cat Page	Price
30 in Stove elec.	22-95033		$468.00

Kenmore Free-Standing Gas Ranges	Model #	Cat Page	Price
30 in Stove gas	22-71343	47	$561.00

Microwave Hood Combinations	Model #	Cat Page	Price
30 in Mircrohood Combo	22-80083	51	$229.00

Countertop Microwave	Model #	Cat Page	Price
Counter Top Microwave	20-63263	52	$119.00

Garbage Disposers	Model #	Cat Page	Price
½ HP Food Waste Disposer	22-6011	66	$60.00

Kenmore Laundry	Model #	Cat Page	Price
Front Load Washer 3.5 Cu. Ft.	26-48102	71	$536.00
Front Load Dryer 5.8 Cu. ft.	26-88042	71	$411.00

Craftsman Garage Door Openers	Model #	Cat Page	Price
½ HP Garage Door Opener Chain Drive	9-53930	83	$152.00

DON'T FORGET SEARS PARTS AND SERVICE ARE UNPARALELLED IN THE APPLIANCE INDUSTRY.

A GREAT RESOURCE ……

RELIABLE KENMORE® APPLIANCES

AND SPECIAL COMMERCIAL PRICING

DELIVERED WEEKDAYS TO YOUR LOCATION

www.SearsCommercial.com

Brad Becker

Property Management Specialist

cell: 904.233.7983

fax: 904.485.8687

service: 888.507.9312

bbecke4@searshc.com

Sears Commercial

SPECIAL KENMORE APPLIANCE PRICING
FOR CLAYTON BAILEY

SEARS offers the Best Parts & Service in the Appliance Industry.

Kenmore Refrigeration	Model #	Cat Page	Price
15 cubic foot top freezer no ice *(Not Stainless)*	46-60532	24	$399.00
17 cubic foot top freezer (optional ice)	46-65723	23	$520.00
18 cubic foot top freezer with ice	46-77873	21	$579.00

Energy Star Dishwashers	Model #	Cat Page	Price
Kenmore 18 inch dishwasher	22-14403	65	$369.00

Kenmore Free-Standing Electric Ranges	Model #	Cat Page	Price
ONLY AVILABLE IN WHITE			

Kenmore Free-Standing Gas Ranges	Model #	Cat Page	Price
ONLY AVILABLE IN WHITE			

Kenmore Laundry	Model #	Cat Page	Price
Portable Washer (Not Energy Star)	26-44722	77	$404.00
Portable Electric Dryer (Not Energy Star)	26-84722	77	$282.00
Stackable Electric Dryer (Not Energy Star)	26-84182	77	$295.00
* Optional Stack Stand Kit	26-49971	77/134	$100.00

Whirlpool Laundry	Model #	Cat Page	Price
Whirlpool Stacked Full Size Laundry	26-9782	77	$892.00

DON'T FORGET SEARS PARTS AND SERVICE ARE UNPARALELLED IN THE APPLIANCE INDUSTRY.

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bbecke4@searshc.com

Sears Commercial

SECTION 122113 - HORIZONTAL LOUVER BLINDS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All windows shall have minimum two (2") inch flat moisture-proof PVC horizontal blinds prior to final inspection.

B. See NSP Green Building Practices Handbook, Section 3.2 – Windows for further requirements.

PART 2 - PRODUCTS

2.1 HORIZONTAL LOUVER BLINDS

A. All windows shall have blinds prior to final inspection.

B. Provide blinds passing flame-resistance testing according to NFPA 701.

C. Louver Slats: **flat moisture-proof PVC.**

D. Slat Width: **two (2") inch.**

E. Headrail: Formed steel or extruded aluminum; long edges returned or rolled; fully enclosing operating mechanisms on three sides and ends.

F. Tilt and Raise Operation: Manual with nylon cord.

G. Valance: **3" Decorative.**

H. Mounting: Wall, End, or Recess mounted.

I. Colors, Textures, and Patterns: As selected from manufacturer's full range.

J. Fabrication: Comply with AWCMA Document 1029 unless otherwise indicated.

1. Fabricate concealed components from non-corrodible or corrosion-resistant-coated materials.
2. Provide lifting and tilting mechanisms with permanently lubricated moving parts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install blinds level, plumb, and located not closer than 2 inches to interior face of glass.

1. Flush Mounted: Install blinds with louver edges flush with finish face of opening when slats are tilted open.
2. Jamb Mounted: Install headrail flush with face of opening jamb and head.
3. Head Mounted: Install headrail on face of opening head.
4. Recessed: Install headrail concealed within blind pocket.

B. Adjust horizontal louver blinds to operate smoothly and easily throughout entire operational range.

END OF SECTION 122113

SECTION 122116 - VERTICAL LOUVER BLINDS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. All sliding glass doors shall receive vertical blinds as outlined below prior to final inspection.

B. Product Standard: Unless otherwise indicated, comply with WCMA A 100.1.

PART 2 - PRODUCTS

2.1 VERTICAL LOUVER

A. Provide blinds passing flame-resistance testing according to NFPA 701.

B. Rail System: Headrail**.**

1. Rails: Extruded aluminum or Formed steel; long edges returned or rolled; channel-shaped, enclosing operating mechanisms.

C. PVC Louver Vanes: Extruded PVC (vinyl), UV-stabilized and integrally colored.

D. Vane Profile: Crowned.

E. Nominal Vane Width: Minimum of 3-1/2 inches.

F. Vane Direction Control: Manual with metal chain.

G. Traversing Control: Manual with cord.

H. Draw and Stack Position: As dictated by orientation of opening in room.

I. Valance: One vane insert.

J. Mounting: Wall extension brackets.

K. Colors, Textures, and Patterns: As selected from manufacturer's full range.

L. Fabrication:

1. Fabricate concealed components from non-corrodible or corrosion-resistant-coated materials.
2. Provide directional and traversing mechanisms with permanently lubricated moving parts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install blinds level, plumb, and located not closer than 4 inches to interior face of glass.

B. Adjust vertical louver blinds to operate smoothly and easily throughout entire operational range.

END OF SECTION 122116

SECTION 220000

PLUMBING SYSTEMS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. The work includes new and/or modifying existing plumbing systems and related work. The work also includes providing roughing-in and making final plumbing connections to equipment furnished under other sections of these specifications. Provide each system complete and ready for operation. Plumbing systems including fixtures, equipment, materials, installation and workmanship shall be in accordance with the contract documents, all referenced standards, local ordinances and applicable codes.

B. Unless otherwise specified, all materials shall be new. All items shall operate safely and without leakage, noise, vibration or hammering. All penetration of building components shall be neat, sleeved and fire-stopped.

C. Inspect all waster lines and repair all joints that are leaking. Replace all damaged or broken drain lines.

D. All water supply pipes, riser pipes, and distributing pipes shall be graduated as to size and shall be interconnected in such a manner that a full volume of water may be discharged into forty percent of the plumbing fixtures of any building when operated at any given time without causing loss to more than ten pounds of pressure at the plumbing fixtures which are located on the upper floor of such building for a length of time not less than sixty minutes. All in-place water lines will be checked to insure that no restrictions are present and that the water pressure is at the prescribed pressure according to local code.

E. Repair of replace all water lines that are leaking.

F. Shut-off valves shall be provided at each lavatory, water closet, and kitchen sink.

G. ALL FIXTURES MUST COMPLY WITH THE WATERSENSE SPECIFICATIONS in accordance with the NSP Green Building Practices Handbook, Section 2.1 – Indoor Water Use Reduction. However, if brand new faucets have previously been installed in the home that do not comply, the Developer may change out the aerators to low flow upon approval by NSP Construction Management.

H. No solder containing lead shall be used in any pipe or fixture carry potable water.

I. Damage to structural members from drilling or notching will not be accepted.

J. Replace the existing main sewer line from the home to the city tie-in. All work shall be done according to the plumbing code and shall be permitted and inspected accordingly. All terra-cotta and orangeburg pipe shall be replaced with PVC and a clean-out provided. All damaged cast iron pipe shall be replaced. ALL WORK IS SUBJECT TO AN OPEN DITCH INSPECTION.

K. Plumbing required for this work includes but is not necessarily limited to"

1. Domestic cold water distribution
2. Domestic water heating and distribution
3. Sanitary waste and vent piping systems
4. Plumbing fixtures and trim
5. Plumbing accessory items

L. See NSP Green Building Practices Handbook, Section 2.1 – Indoor Water Use Reduction

1. Minimize and improve indoor demand for water through the use of source efficient fixtures and fittings

a. Lavatory faucet average flow rate must be ≤ 2.0 gpm.
b. Shower rate must be ≤ 2.0 gpm per stall.
c. Average flow rate for all toilets must be ≤ 1.3 gpf.

1.2 QUALITY ASSURANCE

A. General: The work of this section shall comply with all applicable standards, codes and ordinances.

B. Standards:

1. American Society for Testing and Materials (ASTM).

a. D1785 & D1784, Poly Vinyl Chloride (PVC) Pipe, Schedules 40, 80 and 120.
b. D2466 & D2467, Poly Vinyl Chloride (PVC) Pipe Fittings, Schedule 40 & 80.
c. D2665, Poly Vinyl Chloride (PVC) Drain, waste, and vent pipe fittings.
d. D2564, Solvent Cements for Poly Vinyl Chloride (PVC) Pipe and Fittings.
e. D2855, Making Solvent-Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and fittings.
f. F402, Safe Handling of Solvent Cements and Primers Used for Joining Thermoplastic Pipe Fittings.
g. B88, Copper Pipe Fittings.
h. A74-75, A888, C564, Cast Iron Soil Pipe and Fittings.
i. A53, Steel Pipe, Schedule 40, Hot Dip Galvanized.
j. D2846, Chlorinated Polyvinyl Chloride (PVC) Plastic Hot and Cold Water Distribution Systems (Copper Tube Sizes).
k. F441, Chlorinated Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40 & 80.
l. F439, Socket-Type Chlorinated Polyvinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80.
m. F1412, Polypropylene chemical resistant plastic pipe.
n. F493, Solvent Cements or Chlorinated Poly Vinyl Chloride (CPVC) Pipe and Fittings.
o. ASTM A240, 300 series stainless steel.

2. Cast Iron Soil Pipe Institute (CISPI): 301-72 Hubless Cast Iron Sanitary System.
3. Plumbing and Drain Institute (PDI): WH201, Water Hammer Arrestors.
4. ANSI, LC-1 Fuel Gas Piping Systems using corrugated stainless tubing (CSST).

C. Requirements of Regulatory Agencies:

1. 2004 Florida Building Code, Mechanical and Plumbing.
2. Code requirements and local ordinances of City and/or County having supervisory jurisdiction.

D. Permits and Fees:

1. The Contractor shall arrange for all permits, pay all fees, charges and expenses necessary for a complete and operating system.

1.3 MANUFACTURERS

A. The NSP Program Manager has obtained special program pricing from the following manufacturers, which can be purchased through the local supplier, Gorman Company of Jacksonville. Contact Ad Kellogg at 904-354-0631 for details.

1. Delta
2. Briggs
3. Watco
4. Kindred
5. Rheem
6. Alsons

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver items in manufacturer's original unopened protective packaging.

B. Deliver materials with manufacturer's tags and labels intact.

C. Store materials and equipment in dry, clean location

D. Handle and store as to avoid damage

E. Remove items delivered in broken, damaged, rusted or unlabeled conditions from project site immediately.

PART 2 - PRODUCTS

2.1 PIPE

A. General:

1. Free from defects impairing strength and durability and best commercial quality for purposes specified.
2. Structural properties sufficient to safely sustain or withstand strains to which it is normally subjected.

B. Pipe Materials:

1. DWV (Drain, Waste, and Vent) Piping: Fittings shall be long radius fittings, except fittings in vent piping may be short radius fittings. Minimum size piping shall be 2 inches for buried piping and 1-1/4 inches for above ground piping. Contractors option:

   a. Below Grade: Cast Iron ASTM A74, standard, single hub coated.
   b. Above Grade: Cast Iron, No Hub, CISPI 301/ASTM A888.

2. Domestic Water Piping (Contractors Option):

   a. Copper meeting ASTM B88.

      1) Below Grade: Type K, coated with coal tar shellac.
      2) Above Grade: Type L.

   b. Chlorinated Polyvinyl Chloride (PVC):

      1) Piping up to 1-1/4 inch shall meet ASTM D2846.
      2) Piping 1-1/2 inch and larger shall be Schedule 80 and meet ASTM F441 and ASTM F439.

3. Exterior Water Piping: PVC, Schedule 40, meeting ASTM D1785.

C. Fittings and Joints:

1. DWV Pipe:

   a. Joints Below Grade: Hub and spigot compression gasket meeting ASTM C564.
   b. Joints Above Grade: Cast Iron coupling with neoprene gasket and stainless steel bands meeting CISPI 310 and ASTM C564.
   c. Fittings: Cast Iron, same as pipe.
   d. Joints Above and Below Grade: Solvent weld meeting ASTM D2564.

2. Copper: (Contractors Option)

   a. Joints: Solder, 95% tin, 5% antimony.
   b. Fittings: Wrought copper.
   c. Joints: Propress system by Viega or prior approved equal.

3. CPVC:

   a. Joints: Solvent weld.
   b. Fittings: CPVC, same as pipe.

4. Steel: 150# malleable iron fittings.

   a. 2” diameter and smaller: threaded joints.
   b. Larger that 2” diameter: welded joints.

5. CSST:

a. Autoflare mechanical attachment fittings.
b. Trac Pipe or equal fittings to include:

1) Galvanized steel box with manifold bracket.
2) Iron Poly coated manifold.
3) Pressure regulator.
4) Stainless steel ball valve.
5) Carbon steel striker plate.
6) Galvanized steel conduit.
7) Excess safety flow device equal to gas breaker.

6. Dielectric Unions: Shall be used at all joints of dissimilar pipe materials.

2.2 INSULATION

A. Piping to insulated as follows:

1. 1-inch standard fiberglass.
2. Factory jacket and fitting covers.
3. Domestic Water Piping Exposed to Exterior: Nitrile rubber based elastomeric sheet insulation; Armstrong "Armaflex 2" Minimum insulation thickness shall be ¾ inch providing a minimum value of R-4.

B. Piping to be un-insulated: Piping run-outs to fixtures (except as noted for handicap-accessible fixtures).

2.3 WATER SYSTEM SPECIALTIES

A. Water Hammer Arrestors: All arrestors shall conform to PDI Standard WH201 and ASSE 1010, Acceptable: Zurn Shoktrols Z-1700

B. Washing Machine Connections: Provide and install recessed connections for washing machine at the location specified by the Developer and/or the NSP Construction Manager. These connections will include hot and cold water connections and the drain will be properly connected into the waste system per local plumbing code.

C. Hose Valves (Bibbs):

1. Location: 1 Front, 1 Rear
2. Material: Brass
3. Seal penetration

2.4 WATER HEATERS

A. Provide and install a new electric or gas 50 gallon (minimum), round, double element, energy efficient water heater with drain pan per code. The water heater shall have a pressure-relief valve piped to the exterior of the structure as per the plumbing code. Wiring to the water heater shall be placed in conduit or armored cable with proper

fasteners. Locate the water heater as per local building codes. If gas unit, install/replace gas vent and supply line, if required.

B. See NSP Green Building Practices Handbook, Section 3.5 – Water Heating

1. Incorporate more efficient heating and cooling system

a. Provide insulated water heaters with a minimum value of R-7.
b. Insulate all exposed domestic hot water piping to a minimum value of R-4.

C. Gas Water Heaters:

1. Tank: Zero inch clearance UL listed glass tank water heater with a 160 psi working pressure enclosed with foam insulation exceeding the latest requirements of ASHRAE 90.1 and the Florida Building Code.
2. Controls: Control shall be an integrated solid state temperature and ignition control device with integral diagnostics, LED fault display capability and a digital display of temperature settings.
3. Provide factory drain and ASME rated Pressure and Temperature relief valve.
4. Provide factory three year limited warranty.
5. Provide and install water heater in accordance with the manufacturer's installation instructions to include manifold kits and direct exhaust and intake air vents.

D. Electric Water Heaters:

1. Rheem "Fury Rheemglas Energy Miser" Electric Water Heater.
2. 50 Gallon Minimum.
3. Dual heating Elements.
4. Minimum Six (6) year warranty.
5. Brass Drain Valve
6. **See ATTACHED for details and pricing**

2.5 PLUMBING FIXTURES

A. Kitchen:

1. Faucet: Delta, 440-SSWE-DST
2. Sink: Kindred, DG804BX

a. Must be double compartment stainless steel no less than 33" x 22" x 8"
b. Installation must include supply line shut-off valves, hammer arrestor, and p-trap.

3. Waste Disposer: Kindred, KWD50
4. **See ATTACHED for details and pricing**

B. Bathrooms:

1. Faucet: Delta, 2520-A or 520-A-DST
2. Shower: Delta, T13410-H20 and R10000-HP

3. Sink: Briggs, 5509

   a. Installation must include supply line shut-off valves, hammer arrestor, pop-up, and p-trap.

4. Toilet: Briggs, 4680 round or 4685 elongated
5. Tub: Briggs, 2504/2505
6. Bath Waste Kit: Watco, 901-LT-PVC-CP
7. **See ATTACHED for details and pricing**

2.6 INSPECTION

A. Examine areas to receive piping for:

1. Defects that adversely affect execution and quality of work.
2. Deviations beyond allowable tolerances for piping clearances.

B. Check location of rough-in work to assure match with fixtures.

C. Verify that electrical facilities are compatible with equipment.

D. Start work only when conditions are satisfactory and all sections of this specification have been read and understood.

2.7 3.2 INSTALLATION

A. Piping Layout:

1. Complete installation to present a neat, orderly appearance.
2. Run piping parallel to walls of building unless otherwise indicated.
3. Keep piping free from contact with building structure and all other equipment.

B. Pipe Supports and Fasteners:

1. Hang and support as required with approved structural fasteners.
2. Support metallic pipe with hangers and fasteners of the same material.
3. Maximum spacing of pipe hangers shall be in accordance with Table 308.5 of the 2004 Florida Building Code – Plumbing.

C. Piping Within Walls:

1. Anchor as required to prevent vibration or movement of any kind.
2. Secure piping to flush valves with support system designed specifically for this purpose.

D. Penetrations:

1. Coordinate penetrations for vents and roof drains with roof system.
2. Do not penetrate structural members without written approval from Structural Engineer.
3. Provide chromium plated cast brass adjustable escutcheon plates at exposed pipe penetrations through walls, partitions, ceilings or floor.

E. Water Hammer Arrestors (Domestic Water System):

1. Install where shown or required for elimination of water hammer.
2. Air chambers are not acceptable.

F. ProPress Installation:

1. Copper press fittings shall be made in accordance with the manufacturer's installation instruction. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool approved by the manufacturer.

2.8 3.3 TESTING AND DISINFECTING

A. Testing:

1. Test prior to covering or concealing piping.
2. Perform all tests in presence of Building Official. Provide 24-hour advance notice.
3. Soil, Waste, Vent and Roof Drain System:

   a. Temporarily plug all outlets.
   b. Fill line with water to the roof level.
   c. Allow to remain full for 24 hours.

4. Water System:

   a. Test at 150 % of design pressure but not less than 100 psig.
   b. Allow pressure to remain on line for 24 hours.

5. Repair all detectable leaks in piping systems.

B. Disinfection of Domestic Water System:

1. Disinfect domestic water system after approval of test results and piping installation by Building Official.
2. Prior to substantial completion sterilize piping system in accordance with local plumbing code requirements.
3. Deliver certification to Building Official and NSP Construction Manager.

END OF SECTION 220000

Neighborhood Stabilization Program

6.04.09

Quote expires 12-31-09 (increases only per manufacturors increase, not to exceed 5% per year)
Prices do not include tax

Part #	Price	Quanity	Description
Round Front 4680			**HET 1.28 GPF TOILET**
240438	$111.57	1 each	B-4110130 White Round Front, 1.28 gpf, Maelstrom Bowl
240439		1 each	B-4494130 Included, White Maelstrom Tank
Enlongated 4685			
240443	$125.64	1 each	B-4115130 White EL Front, 1.28 gpf, Maelstrom Bowl
240439		1 each	B-4494130 Included, White Maelstrom Tank
Kitchen Sink			
116412	$74.55	1 each	FHP-DG804BX 33x22 Gloss 4H 20-Ga Sink
Delta Faucets			
242275	$104.00	1 each	Delta 440SSWEDST BR-SS 1.5 gpm Kitchen Fct with Spray
240453	$56.59	1 each	D-520ADST CP SLV 4CC 1.5 gpm Lav Faucet
153027	$21.98	1 each	D-R10000IP Unvsl Vlv Body
240457	$55.92	1 each	D-T13420H20 CP SHDL 1.5 gpm Monitor Bath Shwr Trim
Alsons Shr Heads			
240464	$19.73	1 each	A-655CBX CP 1.6 gpm Fluidics Shwr Head
240465	$7.90	1 each	A-YA903CH4 CP Dual Y DV
72628	$51.79	1 each	15041CBX 24" Wall Bar W/Nut Mount in Chrome
240467	$10.86	1 each	A-462136BX 1.75 gpm Hand Shwr
Bath Tub			
220261	$95.67	1each	B-2504130 5 WHT RH NS Pendent Bath
Lavatory Sink			
188180	$18.33	1 each	B-5509130 WHT 19 RD 4CC Savex China Lav
Water Heater			
102449	$208	1 each	R-82V522 50GAL 240V 4500W/4500W 6yr Elec Wtr Htr w/t&p
Waste Disposer			
239109	$57.65	1 each	KINDRED RWD50 1/2 hp Cont Disposer

Gorman Company
1930 W. Beaver Street
Jacksonville, FL 32209
(904) 354-0631 office (904) 355-8067 fax
Contact: Ad Kellogg

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

KITCHEN

DG804BX

•Finish - Sheen Deck / Silk bowl
•Center drain wastehole locations
•Fits cabinet 36"
•4 faucet holes
•2 equal sized bowls - 15 1/2" x 14" x 8" deep

Faucet not included

440- SSWE-DST

•*Water Efficient flow 1.5 gpm @ 60 psi*
•Collins offers a sleek design with the charm of simplicity
•The arc of the Collins spout adds clearance for easy filling of pots and pans
•Features DIAMOND(TM) Seal Technology
•Matching side spray with Touch-Clean®
•Arched spout for easy filling of pots and pans
• Lifetime Faucet and Finish Limited Warranty

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

GARBAGE DISPOSER

KWD50

Continuous feed
- 1/2 H.P. motor
- High-speed 2600 r.p.m. permanent magnet motor
- Includes factory installed power cord
- For use with 110-120 volts/60 hz electrical current only
- EZ Mount™ System
- Stainless steel impellers
- Galvanized grinding ring and turntable

KINDRED

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Official Website of the City of Jacksonville, Florida

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

LAVATORY OPTIONS

2520-A

•*Maximum flow rate 1.5 gpm @ 60 PSI.*
•Classic, sensible styling that complements any home.
•Hand inspected for performance, Classic faucets handle the toughest of tasks with ease.
•3-7/16" long spout is simple but tough
•Easy-to-operate blade handles
•Solid brass construction ensures quality and reliability
•Lifetime Faucet and Finish Limited Warranty

520-A-DST

•*Maximum flow rate 1.5 gpm @ 60 PSI*
•Classic, sensible styling that complements any home.
•Hand inspected for performance, Classic faucets handle the toughest of tasks with ease.
•Single lever handle for ease of control
•Fast, tool free installation and increase mounting depth to 2.5"
•A hidden caché aerator adds an aesthetic element to the enhanced design of the faucet
•Lifetime Faucet and Finish Limited Warranty

= WaterSense certified product

= Water Efficient Product – Flow Rate of 1.5 gpm versus Industry Standard ASME A112.18.1/CSA B125.1 of 2.2 gpm

DELTA FAUCET COMPANY

cojnet
Official Website of the City of Jacksonville, Florida

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

SHOWER

T13420-H20
R10000-IP

•*Features 1.5 GPM water efficient*

H2Okinetic® Technology shower head

•Classic, sensible styling that complements any home.
•Hand inspected for performance, Classic faucets handle the toughest of tasks with ease.
•Monitor® Scald-Guard® valve keeps water temperature within +/-3°F.
•For use with MultiChoice Universal rough valve body.
•Solid brass construction ensures quality and reliability.
•Single function operation - Single lever handle for ease of temperature control.
•Lifetime Faucet and Finish Limited Warranty

H2Okinetic Technology® allows you to conserve water without sacrificing your shower experience. By using larger water droplets which not only retain heat better, but also create a warmer, more luxurious spray that blankets the body, H2Okinetic Technology delivers 1.6 gallons of water per minute that actually feels like 2.5 gallons per minute, resulting in a 36% decrease in water usage compared to a high flow system.

DELTA FAUCET COMPANY

cojnet
Official Website of the City of Jacksonville, Florida

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

TOILETS

4680 Round front
4685 Elongated front

- High-efficiency toilet (HET)
- 8" x 9" water surface
- Wide 2-½" trapway
- Sanitary bar on bowl for easy cleaning
- Stain-resistant vitreous china
- Slim design with small footprint
- Limited Lifetime Warranty

BRIGGS

NOTE:
IAPMO and WaterSense
certification in process

5509

- *19" Round Lavatory*
- Vitreous China
- Self-rimming
- Concealed front overflow
- Can be mounted for ADA installation
- Available in 4" centers

BRIGGS

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

TUB

2504/2505
STEEL TUB

- Porcelain enameled steel
- 60"x30"x14-1/4" bathtub
- Full length tile flange
- Continuous tile flange for watertight corners
- Durabrace structural design
- Rounded, watertight corners
- Foam bottom support pad
- 2504 - Right hand tub with slip resistant bottom
- 2505 - Left hand tub with slip resistant bottom

BATH WASTE KIT

901-LT-PVC-CP

- Lift & Turn
- Sch 40
- PVC
- Chrome Plated

CITY OF JACKSONVILLE
NEIGHBOR DIVISION

SHOWER OPTIONS

462 136BX

- *1.75 gpm full spray hand shower*
- Rub clean nozzles for removal of deposits
- Full spray

30% Water Savings!

YA903CH4

All-brass diverter for shower arm

655 C BX

- Water savings technology; shower head's flow feels the same as a regular 2.5 gpm spray, but uses only ***1.6 gpm for a 36% water savings over standard shower heads.***
- Fluidics technology reinvents the showering experience, creating a spray with a reduced flow that feels like a standard high-volume spray

15041 C BX

- Concealed mounting screws
- Adjustable mount
- 28" wall bar

WATER HEATER

Fury Rheemglas® Energy Miser® Electric Water Heater

Available in 30, 40, 50, 65, 80 and 120 Gallon Tall – 30 and 50 Gallon Medium – 20, 30, 38 and 47 Gallon Short Models

- **6-Year Limited Tank and Parts Warranty***
- **With ProtectionPlus™ the 6-Year Limited Tank Warranty Becomes 10 Years!**

- EvorKleen™ self cleaning device
- Brass drain valve
- Temperature and pressure relief valve included
- Isolated tank design reduces conductive heat loss
- High efficiency resistance heating elements
- Anode rod equalizes aggressive water action
- Electric junction box located above heating elements for easy installation
- Over-temperature protector cuts off power in excess temperature situations
- Automatic thermostat keeps water at desired temperature
- Meets or exceeds requirements of the National Appliance Energy Conservation Act (NAECA)

HIGH EFFICIENCY MODELS FEATURE:
- High performance and lower operating cost
- Compliant with many electric utility incentive programs

*See Residential Warranty Information Brochure for complete warranty information.

Energy Factor and Average Annual Operating Cost based on DOE (Department of Energy) test procedure. Cost based on average kwh rate electricity in Georgia.

	DESCRIPTION		FEATURES		ROUGHING IN DIMENSIONS (SHOWN IN INCHES)				ENERGY INFORMATION	
	GAL-LON	MODEL NUMBER	FIRST HOUR RATING (LP/H)	RECOVERY IN (LP/H) @ 90° RISE	TANK HEIGHT A	HEIGHT TO TOP OF TANK B	DIAMETER C	APPROX. WEIGHT (LBS.)	ENERGY FACTOR	ANNUAL OPER. COST
D TALL	40	6VR40-2	56	21	46-3/4	48-3/4	22-1/4	154	0.94	$497
	50	6VR50-2	67	21	57	57	22-1/4	123	0.94	$497
	65	6VR65-2	71	21	58-3/4	58-3/4	23	160	0.92	$508
	80	6VR80-2	89	21	59	59	24-1/2	181	0.92	$508
MEDI	50	6MR50-2	62	21	48	48	26-1/4	128	0.93	$503
	30	6V30-2	48	21	45-3/4	45-3/4	17-3/4	80	0.93	$503
	40	6V40-2	53	21	46-1/2	46-1/2	19-3/4	95	0.92	$508
1 TALL	40	6DV40-2	57	21	59-1/4	59-1/4	17-3/4	96	0.92	$508
	50	6DV50-2	67	21	57	57	19	107	0.91	$514
	65	6DV65-2	71	21	58-1/2	58-1/2	21	150	0.89	$525
	80	6DV80-2	89	21	59	59	23	177	0.88	$544
	120	6DV120-2	98	21	62-1/2	62-1/2	26-1/4	304	0.85	$560
MEDI	30	6DMV30-2	44	21	46	46	19-3/4	82	0.89	$560
	50	6DMV50-2	62	21	46	46	21-3/4	117	0.90	$520
1 SHORT	20	6DV20-2		21	31-1/2	31-1/2	17	62	N/A	N/A
	30	6TSV30-2*	47	21	30	30	19-3/4	90	0.93	$503
	38	6DSV38-2	42	21	30	30	22-1/4	83	0.93	$503
	38	6DSV38-2	45	21	31-1/2	31-1/2	21	138	0.92	$508
	47	6DSV50-2	56	21	32	32	26-1/4	149	0.91	$514

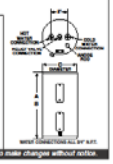
* Water heater dimensions prior to installing insulation blanket that is included with water heater.
• Models furnished with 240 volt, 3 wire, 3 pole, single phase, one-element wiring and 4500 watt upper and lower heating elements.
• If heater is to be used with different voltage than that specified on the nameplate, they must be specifically requested.
• Single element models available on special order (6000W max.). Substitute "J" for "2" in model number.
• Special Wiring Options – a limited number of special wiring options are available. Consult factory for price and availability.
• All models equipped with heat traps.

Recovery = wattage/2.42 x temp. rise °F
Example: $\frac{4500W}{2.42 \times 90°} = 21$ GPH

These units are designed to meet or exceed ANSI (American National Standards Institute) requirements and have been tested according to U.O.L. test procedures and meet or exceed the energy efficiency requirements of NAECA, ASHRAE standard 90, IC90 Code and all state energy efficiency performance criteria for energy consuming appliances.

Before purchasing this appliance, read important energy cost and efficiency information available from your supplier.

PROTECTIONPLUS™
6 BECOMES 10
For more details, see form 101-7.



In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.

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SECTION 230500 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Developer shall furnish and install a new electric heat pump system complete and operable in every detail including all electrical connections, thermostatic controls, containment closet, condensing unit, "A" type evaporator coil, housing, refrigerant lines, ducts, registers and all other necessary connections, controls, and equipment for a completely operable unit, including concrete pad.

B. A security cage is required around the outside unit.

C. Developer shall guarantee a trouble free system and shall repair or replace all defective parts and/or workmanship to his own expense for a period of one year from the date of certificate of completion.

D. Developer shall guarantee that the cooling system will maintain a temperature of 78 degree Fahrenheit when outside temperature is 90 degrees Fahrenheit AND the heating system will maintain heat with the home at 70 degrees Fahrenheit when the outside temperature is 0 degrees Fahrenheit and the wind has a velocity of 15 mph.

E. ALL HEATING AND AIR CONDITIONING SYSTEMS AND EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH LOCAL CODES, REGULATIONS AND ORDINANCES.

F. See NSP Green Building Practices Handbook, Section 3.0 – Energy and Atmosphere and Section 5.0 – Indoor Environmental Quality for further requirements.

1. **Incorporate more efficient heating and cooling system.**
   a. **Install HVAC equipment that meets the requirements of the ENERGY STAR for Homes national Builder Option Package. Include proper sizing of system per the ACCA manual J. (for cooling ≥ 13 SEER & Heating ≥ 7.7 HSPF)**
2. **Reduce indoor airborne contaminants through source control and removal.**
   a. **During construction seal all permanent ducts and vents to minimize contamination during construction. Remove seals after all phases of construction are complete.**
   b. **Flush home after completion and prior to occupancy in accordance with Section 018113**.

1.2 BASIS FOR REPLACEMENT

A. If the current HVAC system, heat pump, and/or air handler/compressor is greater than five (5) years old, the Developer shall remove and replace the units in accordance with the specifications outlined herein.

PART 2 - PRODUCTS

2.1 SLEEVES

A. Mechanical Sleeve Seals: Modular rubber sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.

B. Galvanized-Steel Sheet: **0.0239-inch** minimum thickness; round tube closed with welded longitudinal joint.

C. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.

D. PVC Pipe: ASTM D 1785, Schedule 40.

2.2 HANGERS AND SUPPORTS

A. Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.

B. Powder-Actuated Fasteners: Threaded-steel stud, with pull-out and shear capacities appropriate for supported loads and building materials where used.

C. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, with pull-out and shear capacities appropriate for supported loads and building materials where used.

2.3 VIBRATION ISOLATION

A. Vibration Supports:

1. Pads: Arranged in single or multiple layers of oil- and water-resistant, neoprene or rubber of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern and galvanized-steel base plates, and factory cut to sizes that match supported equipment.
2. Mounts: Double-deflection type, with molded, oil-resistant fiberglass, rubber or neoprene isolator elements with factory-drilled, encapsulated top plate and base plate.
3. Spring Isolators: Freestanding, laterally stable, open-spring isolators.

B. Vibration Hangers:

1. Elastomeric Hangers: Double-deflection type, with molded, oil-resistant rubber or neoprene isolator elements bonded to steel housings with threaded connections for hanger rods.
2. Spring Hangers: Combination coil-spring and elastomeric-insert hanger with spring and insert in compression.

PART 3 - EXECUTION

3.1 GENERAL PIPING INSTALLATIONS

A. Install piping free of sags and bends.

B. Install fittings for changes in direction and branch connections.

C. Install sleeves for pipes passing through masonry walls, gypsum board partitions, and concrete floor and roof slabs.

D. Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast-iron pipes for wall sleeves.

E. Comply with requirements in Division 07 Section "Penetration Firestopping" for sealing pipe penetrations in fire-rated construction.

F. Install unions at final connection to each piece of equipment.

G. Install dielectric unions and flanges to connect piping materials of dissimilar metals in gas piping.

H. Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water piping.

3.2 GENERAL EQUIPMENT INSTALLATIONS

A. Install equipment level and plumb, parallel and perpendicular to other building systems and components, unless otherwise indicated.

B. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.

C. Install equipment to allow right of way for piping installed at required slope.

3.3 BASES, SUPPORTS, AND ANCHORAGES

A. Anchor equipment to concrete base according to equipment manufacturer's written instructions.

1. Construct concrete bases of dimensions indicated, but not less than **4 inches** larger in both directions than supported unit.
2. Install dowel rods on **18-inch** centers around the full perimeter of the base to connect concrete base to concrete floor.
3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

5. Use **3000-psi** 28-day compressive-strength concrete and reinforcement as specified in Division 03 Section "Cast-in-Place Concrete"
6. **Install galvanized steel or aluminum security cage on all outside units.**

3.4 HANGERS AND SUPPORTS

A. Comply with MSS SP-69 and MSS SP-89. Install building attachments within concrete or to structural steel.

B. Install hangers and supports to allow controlled thermal and seismic movement of piping systems.

C. Install powder-actuated fasteners and mechanical-expansion anchors in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than **4 inches** thick.

D. Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.

E. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:

1. Adjustable Steel Clevis Hangers (MSS Type 1): For suspension of non-insulated or insulated stationary pipes, NPS 1/2 to NPS 30.
2. Pipe Hangers (MSS Type 5): For suspension of pipes, NPS 1/2 to NPS 4, to allow off-center closure for hanger installation before pipe erection.
3. Adjustable Steel Band Hangers (MSS Type 7): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 8.
4. Adjustable Band Hangers (MSS Type 9): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 8.
5. Adjustable Swivel-Ring Band Hangers (MSS Type 10): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 2.

F. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:

1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers, NPS 3/4 to NPS 20.
2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers, NPS 3/4 to NPS 20 if longer ends are required for riser clamps.

3.5 VIBRATION ISOLATION INSTALLATION

A. Adjust vibration isolators to allow free movement of equipment limited by restraints.

B. Install resilient bolt isolation washers and bushings on equipment anchor bolts.

END OF SECTION 230500

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Certified TAB reports.

B. TAB Report Forms: Standard Testing , Adjusting and Balancing (TAB) contractor's forms approved by NSP Construction Management.

C. Perform TAB after leakage and pressure tests on air and water distribution systems have been satisfactorily completed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine systems for installed balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are accessible.

B. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.

C. Examine HVAC equipment and filters and verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.

D. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible and their controls are connected and functioning.

E. Examine automatic temperature system components to verify the following:

1. Dampers, valves, and other controlled devices are operated by the intended controller.
2. Dampers and valves are in the position indicated by the controller.
3. Integrity of dampers and valves for free and full operation and for tightness of fully closed and fully open positions. This includes dampers in multi-zone units, mixing boxes, and variable-air-volume terminals.
4. Automatic modulating and shutoff valves, including two-way valves and three-way mixing and diverting valves, are properly connected.
5. Thermostats and humidistats are located to avoid adverse effects of sunlight, drafts, and cold walls.
6. Sensors are located to sense only the intended conditions.
7. Sequence of operation for control modes is according to the Contract Documents.

8. Controller set points are set at indicated values.
9. Interlocked systems are operating.
10. Changeover from heating to cooling mode occurs according to indicated values.

F. Report deficiencies discovered before and during performance of test and balance procedures.

3.2 GENERAL PROCEDURES FOR TESTING AND BALANCING

A. Perform testing and balancing procedures on each system according to the procedures contained in **ASHRAE 111** and in this Section.

B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish.

C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.

D. Take and report testing and balancing measurements in **inch-pound (IP)** units.

3.3 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

A. Prepare schematic diagrams of systems' "as-built" duct layouts.

B. For variable-air-volume systems, develop a plan to simulate diversity.

C. Determine the best locations in main and branch ducts for accurate duct airflow measurements.

D. Verify that motor starters are equipped with properly sized thermal protection.

E. Check for airflow blockages.

F. Check condensate drains for proper connections and functioning.

G. Check for proper sealing of air-handling unit components.

H. Check for proper sealing of air duct system.

3.4 GENERAL PROCEDURES FOR HYDRONIC SYSTEMS

A. Prepare test reports with pertinent design data; number in sequence starting at pump to end of system. Check the sum of branch-circuit flows against approved pump flow rate.

B. Prepare schematic diagrams of systems' "as-built" piping layouts.

C. Prepare hydronic systems for testing and balancing according to the following, in addition to the general preparation procedures specified above:

1. Open all manual valves for maximum flow.
2. Check liquid level in expansion tank.
3. Check makeup-water-station pressure gage for adequate pressure for highest vent.
4. Set system controls so automatic valves are wide open to heat exchangers.
5. Check pump-motor load. If motor is overloaded, throttle main flow-balancing device so motor nameplate rating is not exceeded.

3.5 TOLERANCES

A. Set HVAC system airflow and water flow rates within the following tolerances:

1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus **10** percent.
2. Air Outlets and Inlets: Plus or minus **10** percent.
3. Heating-Water Flow Rate: Plus or minus **10** percent.
4. Cooling-Water Flow Rate: Plus or minus **10** percent.

END OF SECTION 230593

SECTION 230700 - HVAC INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Quality Assurance: Labeled with maximum flame-spread index of 25 and maximum smoke-developed index of 50 according to ASTM E 84.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

B. Flexible Elastomeric: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.

C. Mineral-Fiber Blanket Insulation: Comply with ASTM C 553, Type II and ASTM C 1290, Type I.

D. Mineral-Fiber Board Insulation: Comply with ASTM C 612, Type IA or Type IB. For equipment applications, provide insulation with factory-applied ASJ.

E. Mineral-Fiber, Preformed Pipe Insulation: Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ.

F. Mineral-Fiber, Pipe and Tank Insulation: Complying with ASTM C 1393, Type II or Type IIIA Category 2, or with properties similar to ASTM C 612, Type IB; and having factory-applied ASJ. Nominal density is **2.5 lb/cu. Ft.** or more. Thermal conductivity (k-value) at **100 deg F** is **0.29 Btu x in./h x sq. ft. x deg F** or less.

G. Polyolefin Insulation: Unicellular, polyethylene thermal plastic insulation. Comply with ASTM C 534 or ASTM C 1427, Type I, Grade 1 for tubular materials and Type II, Grade 1 for sheet materials.

H. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.

I. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

J. Vapor-Barrier Mastic: Water based; suitable for indoor and outdoor use on below ambient services.

K. Factory-Applied Jackets: When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

L. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.

M. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.

PART 3 - EXECUTION

3.1 INSULATION INSTALLATION

A. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

B. Insulation Installation at Fire-Rated Wall, Partition, and Floor Penetrations: Install insulation continuously through penetrations. Seal penetrations.

C. Flexible Elastomeric Insulation Installation:

1. Seal longitudinal seams and end joints with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
2. Insulation Installation on Pipe Fittings and Elbows: Install mitered sections of pipe insulation. Secure insulation materials and seal seams with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Mineral-Fiber Insulation Installation:

1. Insulation Installation on Straight Pipes and Tubes: Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
2. For insulation with factory-applied jackets on above ambient surfaces, secure laps with outward clinched staples at **6 inches** o.c.
3. For insulation with factory-applied jackets on below ambient surfaces, do not staple longitudinal tabs but secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.
4. Blanket and Board Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
5. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier.

E. Polyolefin Insulation Installation:

1. Seal split-tube longitudinal seams and end joints with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

2. Insulation Installation on Pipe Fittings and Elbows: Install mitered sections of polyolefin pipe insulation. Secure insulation materials and seal seams with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

F. Plenums and Ducts Requiring Insulation:

1. Concealed and exposed supply and outdoor air.
2. Concealed and exposed return air located in non-conditioned space.
3. Concealed and exposed exhaust between isolation damper and penetration of building exterior.

G. Plenums and Ducts Not Insulated:

1. Metal ducts with duct liner.
2. Factory-insulated plenums and casings.
3. Flexible connectors.
4. Vibration-control devices.
5. Factory-insulated access panels and doors.

H. Piping Not Insulated: Unless otherwise indicated, do not install insulation on the following:

1. Drainage piping located in crawlspaces.
2. Underground piping.
3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.2 DUCT AND PLENUM INSULATION SCHEDULE

A. Concealed duct insulation shall be the following:

1. Flexible Elastomeric: **1 inch** thick.

3.3 HVAC PIPING INSULATION SCHEDULE

A. Chilled Water: Insulation shall be one of the following:

1. Flexible Elastomeric: **1 inch** thick.
2. Mineral-Fiber, Preformed Pipe, **Type I**: **1-1/2 inches** thick.
3. Polyolefin: **1 inch** thick.

B. Heating-Hot-Water Supply and Return: Insulation shall be the following:

1. Mineral-Fiber, Preformed Pipe, Type I: **1 inch** thick.

C. Refrigerant Suction and Hot-Gas Piping: Insulation shall be **one of** the following:

1. Flexible Elastomeric: **1 inch** thick.
2. Mineral-Fiber, Preformed Pipe Insulation, Type I: **1 inch** thick.
3. Polyolefin: **1 inch** thick.

D. Refrigerant Suction and Hot-Gas Flexible Tubing: Insulation shall be one of the following:

1. Flexible Elastomeric: **1 inch** thick.
2. Polyolefin: **1 inch** thick.

E. Dual-Service Heating and Cooling: Mineral-Fiber, Preformed Pipe, Type I: **1-1/2 inches** thick.

END OF SECTION 230700

SECTION 230900 - INSTRUMENTATION AND CONTROL FOR HVAC

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. See NSP Green Building Practices Handbook, Section 3.0 – Energy and Atmosphere and Section 5.0 – Indoor Environmental Quality for further requirements.

1. Minimize energy consumption due to leaks, inefficiencies and thermal bridging in association with the heating and cooling distribution system.

a. Install ENERGY STAR digital programmable thermostat.

PART 2 - PRODUCTS

2.1 Available Products:

a. LENNOX; ComfortSense; 5000 Series Touchscreen Programmable Thermostat

b. See ATTACHED for details.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install digital programmable thermostat according to requirements specified in Division 26 Sections and Manufacturer's Recommendations.

END OF SECTION 230900

ComfortSense™ 5000 Series Touchscreen Thermostat

Effortless, efficient temperature control

LENNOX

HOME COMFORT SYSTEMS

Innovation never felt so good.™

ComfortSense™ 5000 Series Touchscreen Thermostat

Innovation never felt so good.™

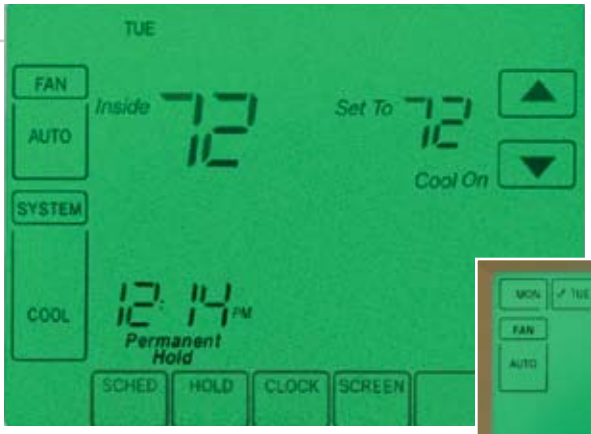
- User-friendly touchscreen for effortless temperature control
- Simple operation with sophisticated features and capabilities
- Designed for wall or armchair programming
- Optional battery power to ensure continuous operation during power outages
- Seven-day programmable with up to four time periods per day
- Compatible with almost any heating and cooling system—one model controls your entire home

You want to enhance your home comfort, but you also want to control your energy costs. Fortunately, the ComfortSense™ 5000 Series touchscreen thermostat makes it easy to do both. Menu-driven programming screens allow you to customize settings with little effort. And advanced logic responds to your choices and schedule, with minimal temperature swings.

THE EASY WAY TO CONTROL YOUR HOME ENERGY COSTS AND COMFORT

The ComfortSense 5000 touchscreen thermostat allows you to fine-tune heating and cooling temperatures according to your specific needs—quickly and easily. Flexible in use and application, the thermostat mounts directly to a wall, but can easily be removed for armchair programming.

A simple touch of the menu screen gives you the flexibility to customize a temperature schedule for every day of the week. Another touch saves your settings, so you relax in comfort and save money on your utility bills.



A user-friendly, ATM-like touchscreen with flashing prompts and up-and-down arrows makes programming effortless. Simply press on a menu bar or option key to make your heating and cooling selections, then save settings by pressing "done."

WARRANTY
5-year limited warranty.

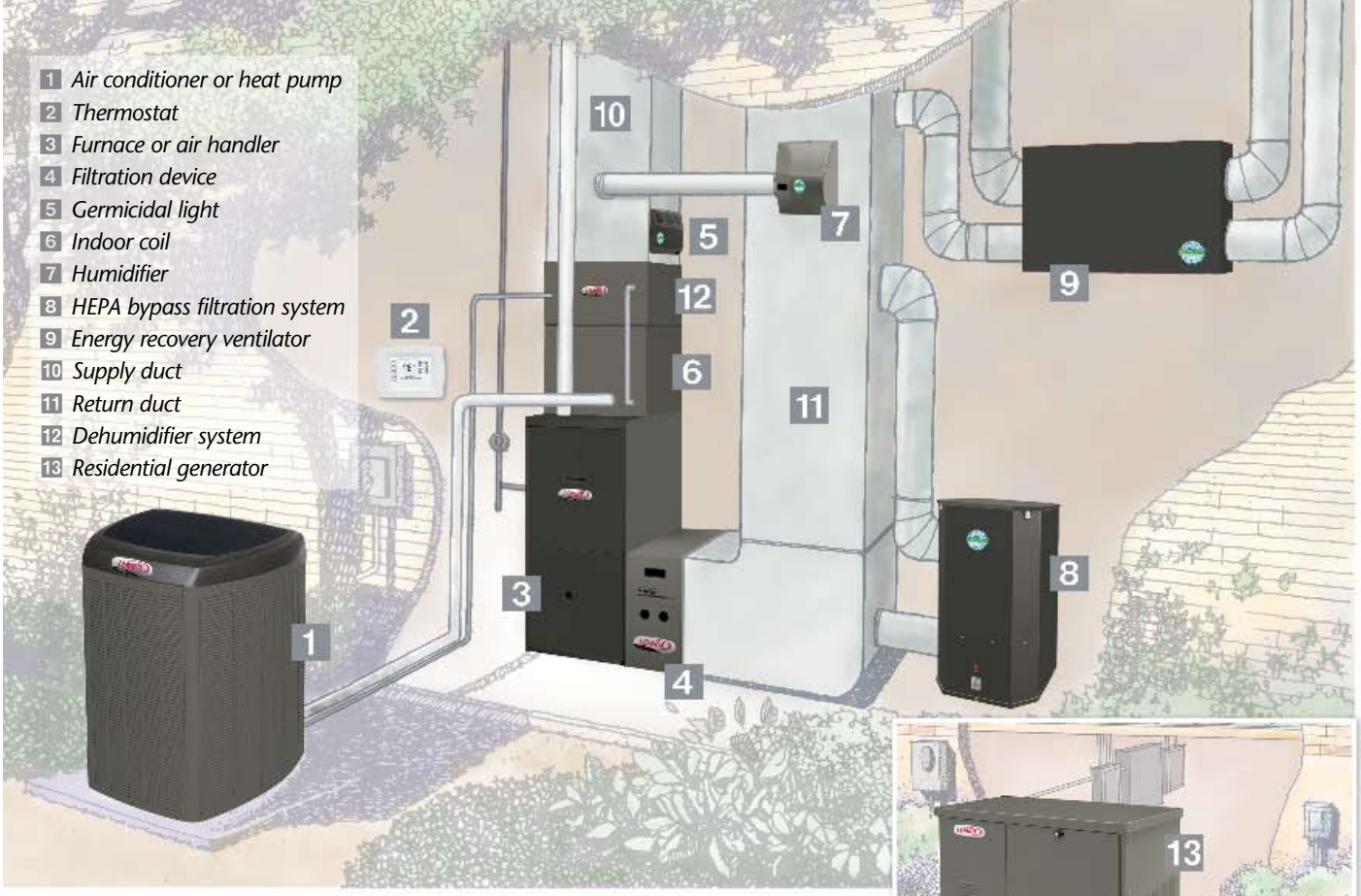
Enjoy comfort and energy savings at the touch of a button, without ever having to touch an owner's manual.

Feature	How It Works	How It Helps
Touchscreen Control	Displays heating and cooling options using a series of menu-driven screens	More programming flexibility, with less guesswork
Large, Backlit Display	Shows current and set temperatures and time	Large 3.6" x 2.7" display provides easy readability in any lighting conditions
Two Power Options	Allow electric operation with battery backup	Helps retain temperature settings in the event of a power loss
Universal Functionality	Controls every heating and cooling system in your home	Eliminates the need for multiple thermostats, saving you time and money
Programmable Fan	Allows you to program your comfort-system fan for continuous or intermittent air circulation	Improved comfort and air quality, especially when combined with a Lennox whole-house air cleaner
Speed Programming	Allows you to program temperature settings for several days at once	Increased ease of use and time savings
Hold Options	Give you the option of overriding the program schedule as desired	Enhanced programming flexibility
Real-Time Clock	Automatically updates for Daylight Saving Time and keeps time during power failures	Added reliability and convenience
"Saving Changes" Notification	Lets you know when your changes have been saved	Simplified programming
Change/Check Reminders	Alerts you when it's time to service or replace filters, batteries, etc.	Added reliability and peace of mind
Clean Function	Temporarily deactivates menu system when you want to clean the screen	Easy maintenance

Lennox is proud of the fact that these products have earned the Good Housekeeping Seal.

A programmable thermostat can reduce heating costs by up to **35%** and cooling costs by up to **25%.**

Source: U.S. Department of Energy



CUSTOMIZE YOUR COMFORT

Lennox® heating, cooling and indoor air quality products are designed to provide efficient, economical comfort—not only as individual units, but also together as an integrated system. This combined network of products delivers on every comfort count, from consistent temperatures and balanced humidity to improved indoor air quality. Lennox also offers a line of residential generators, which provide safe, reliable standby power in the event of outages.

DEALERS YOU CAN COUNT ON

Choosing the right dealer for your home's heating, cooling and air quality needs is every bit as important as choosing the right brand. We think you'll agree our independent dealers are a big reason you can count on quality customer service whenever you call. Your Lennox dealer's dedication to quality shows in his knowledge, training and expertise in designing the right system for your home, installing it properly and keeping it running perfectly for many years to come.

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PC52571

SECTION 232300 - REFRIGERANT PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Comply with ASME B31.5, "Refrigerant Piping," and with ASHRAE 15, "Safety Code for Mechanical Refrigeration."

B. See NSP Green Building Practices Handbook, Section 3.0 – Energy and Atmosphere for further requirements.

1. Select and test air-conditioning refrigerant to minimize environmental effects.

a. Use non-hydrochlorofluorocarbons (HCFC'c) in cooling system.

PART 2 - PRODUCTS

2.1 TUBES AND FITTINGS

A. Copper Tube: ASTM B 88, Types K and L and ASTM B 280, Type ACR.

B. Wrought-Copper Fittings: ASME B16.22.

C. Solder Filler Metals: ASTM B 32. Use 95-5 tin antimony or alloy HB solder to join copper socket fittings on copper pipe.

D. Brazing Filler Metals: AWS A5.8.

2.2 VALVES

A. Thermostatic Expansion Valve: Comply with ARI 750; forged brass or steel body, stainless-steel internal parts, copper tubing filled with refrigerant charge for **40 deg F** suction temperature; **450-psig** working pressure, and **240 deg F** operating temperature.

B. Solenoid Valves: Comply with ARI 760; **240 deg F** temperature rating, **400-psig** working pressure, **240 deg F** operating temperature; and 24-V normally closed holding coil.

2.3 REFRIGERANT PIPING SPECIALTIES

A. Strainers: Welded steel with corrosion-resistant coating and 100-mesh stainless-steel screen with socket ends; **500-psig** working pressure and **275 deg F** working temperature.

B. Moisture/Liquid Indicators: **500-psig** operating pressure, **240 deg F** operating temperature; with replaceable, polished, optical viewing window and color-coded moisture indicator.

C. Filter Dryers: **500-psig** operating pressure; **240 deg F** operating temperature; with gaskets and cartridge.

D. Mufflers: Welded steel with corrosion-resistant coating and socket ends; **500-psig** operating pressure; **240 deg F** operating temperature.

E. Refrigerant: **See NSP Green Building Practices Handbook, Section 3.8 – Refrigerant Management for requirements.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with requirements in Division 23 Section "Common Work Results for HVAC" for basic piping installation requirements.

B. Install wall penetration system at each pipe penetration through foundation wall. Make installation watertight. Comply with requirements in Division 23 Section "Common Work Results for HVAC" for wall penetration systems.

C. Install refrigerant piping and charge with refrigerant according to ASHRAE 15 and **NSP Green Building Practices Handbook, Section 3.8 – Refrigerant Management.**

D. Belowground, install copper tubing in PVC conduit. Vent conduit outdoors.

E. Insulate suction lines to comply with Division 23 Section "HVAC Insulation."

F. Slope refrigerant piping as follows:

1. Install horizontal hot-gas discharge piping with a uniform slope downward away from compressor.
2. Install horizontal suction lines with a uniform slope downward to compressor.
3. Install traps and double risers to entrain oil in vertical runs.
4. Liquid lines may be installed level.

G. Install solenoid valves upstream from each thermostatic expansion valve. Install solenoid valves in horizontal lines with coil at top.

H. Install thermostatic expansion valves as close as possible to distributors on evaporator coils.

I. Install moisture/liquid indicators in liquid line at the inlet of the thermostatic expansion valve or at the inlet of the evaporator coil capillary tube.

J. Install strainers upstream from and adjacent to solenoid valves, thermostatic expansion valves, and compressors unless they are furnished as an integral assembly for device being protected:

K. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.

END OF SECTION 232300

SECTION 233100 - HVAC DUCTS AND CASINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. **ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND STATE BUILDING CODES.**

B. **See NSP Green Building Practices Handbook, Section 3.3 – Heating and Cooling Distribution System for further requirements.**
   1. **Do not install ductwork in exterior walls and use at least R-6 insulation around ducts in un-conditioned spaces.**
   2. **Use mastic compound in lieu of tape at all ductwork connections.**

C. **See NSP Green Building Practices Handbook, Section 5.2 – Air Exhaust Measures for further requirements.**
   1. **Design and install local exhaust systems in all bathrooms (including half baths) and kitchen to meet requirements of Section 5 of ASHRAE standard 62.2-2007.**
   2. **Exhaust all air to outdoors.**

D. **See NSP Green Building Practices Handbook, Section 5.4 - Containment Control.**
   1. **During construction seal all permanent ducts and vents to minimize contamination during construction. Remove seals after all phases of construction are complete.**
   2. **Flush home after completion and prior to occupancy in accordance with Section 018113.**

1.2 BASIS FOR REPLACEMENT

A. If any of the HVAC duct system is crimped, crushed, or punctured patching is not permitted. Developer shall remove and replace to and from the nearest connection.

B. If existing Duct work is greater than 20 years old, the Developer shall remove and replace entire system.

PART 2 - PRODUCTS

2.1 DUCTS

A. Galvanized-Steel Sheet: ASTM A 653/A 653M, with **G60** hot-dip galvanized coating.

B. Carbon-Steel Sheets: ASTM A 1008/A 1008M; with oiled, matte finish for exposed ducts.

C. Stainless Steel: ASTM A 480/A 480M, **Type 316** or **Type 304**, with a No. 2D finish for concealed ducts and No. 4 finish for exposed ducts.

D. Fibrous-Glass Duct Board: Comply with UL 181, Class 1, **1-inch** thick, fibrous glass with fire-resistant, reinforced foil-scrim-kraft barrier, and having the air-side surface treated to prevent erosion.

E. Joint and Seam Tape, and Sealant: Comply with UL 181A.

F. Rectangular Metal Duct Fabrication: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

G. Fibrous-Glass Duct Fabrication: Comply with SMACNA's "Fibrous Glass Duct Construction Standard."

H. Fibrous-Glass Liner: Comply with NFPA 90A or NFPA 90B and with NAIMA AH124.

1. Thickness: **1 inch**
2. Airstream surface coated with an antimicrobial erosion-resistant coating.
3. Liner Adhesive: Comply with NFPA 90A or NFPA 90B and with ASTM C 916.
4. Mechanical Fasteners: Galvanized steel suitable for adhesive attachment, mechanical attachment, or welding attachment.

2.2 ACCESSORIES

A. Volume Dampers and Control Dampers: Single-blade and multiple opposed-blade dampers, standard leakage rating, and suitable for horizontal or vertical applications; factory fabricated and complete with required hardware and accessories.

B. Fire Dampers: Rated and labeled according to UL 555 by an NRTL; factory fabricated and complete with required hardware and accessories.

C. Ceiling Fire Dampers: Labeled according to UL 555C by an NRTL and complying with construction details for tested floor- and roof-ceiling assemblies as indicated in UL's "Fire Resistance Directory." Provide factory-fabricated units complete with required hardware and accessories.

D. Smoke Dampers: Labeled according to UL 555S by an NRTL. Combination fire and smoke dampers shall also be rated and labeled according to UL 555. Provide factory-fabricated units complete with required hardware and accessories.

E. Flexible Connectors: Flame-retarded or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.

F. Flexible Ducts: Factory-fabricated, insulated, round duct, with an outer jacket enclosing **1-inch** thick, glass-fiber insulation around a continuous inner liner

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.

B. Seal ducts to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":

1. Outdoor, Supply-Air Ducts: Seal Class A.
2. Outdoor, Exhaust Ducts: Seal Class C.
3. Outdoor, Return-Air Ducts: Seal Class C.
4. Unconditioned Space, Supply-Air Ducts in Pressure Classes **2-Inch wg** and Lower: Seal Class B.
5. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than **2-Inch wg:** Seal Class A.
6. Unconditioned Space, Exhaust Ducts: Seal Class C.
7. Unconditioned Space, Return-Air Ducts: Seal Class B.
8. Conditioned Space, Supply-Air Ducts in Pressure Classes **2-Inch wg** and Lower: Seal Class C.
9. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than **2-Inch wg** Seal Class B.
10. Conditioned Space, Exhaust Ducts: Seal Class B.
11. Conditioned Space, Return-Air Ducts: Seal Class C.

C. Conceal ducts from view in finished and occupied spaces.

D. Avoid passing through electrical equipment spaces and enclosures.

E. Support ducts to comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Ch. 4, "Hangers and Supports."

F. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.

G. Install volume and control dampers in lined duct with methods to avoid damage to liner and to avoid erosion of duct liner.

H. Where required Install fire and smoke dampers according to UL listing.

I. Install fusible links in fire dampers.

J. Clean new and existing duct system(s) before testing, adjusting, and balancing.

3.2 TESTING, ADJUSTING, AND BALANCING

A. Balance airflow within distribution systems, including sub-mains, branches, and terminals to indicated quantities.

END OF SECTION 233100

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color charts for factory finishes.

B. All diffusers, registers and grilles must be replaced to match.

C. See NSP Green Building Practices Handbook, Section 5.3 – Air Filtration for further requirements.
1. Reduce particulate matter from air supply system.
2. Install air filters with a minimum efficiency reporting value (MERV) ≥ to 8. The air filter housings must be airtight to prevent bypass or leakage.

PART 2 - PRODUCTS

2.1 OUTLETS AND INLETS

A. Diffusers:

1. Material: **Steel** or **Aluminum**.
2. Finish: **Baked enamel, white**
3. Mounting: **Duct connection** or **Surface with beveled frame**

B. Wall and Ceiling Registers:

1. Material: **Steel** or **Aluminum**.
2. Finish: **Baked enamel, white**
3. Mounting: **Countersunk screw** or **Concealed**.

C. Floor Registers:

1. Material: **Steel** or **Aluminum**.
2. Finish: **Baked enamel to match floor covering**
3. Mounting: **Countersunk screw** or **Concealed**.

D. Baseboard Registers:

1. Material: **Steel** or **Aluminum**
2. Finish: **Baked enamel,**
3. Mounting: **Countersunk screw** or **Concealed**.

E. Wall and Ceiling Grilles:

1. Material: **Steel** or **Aluminum**.

2. Finish: **Baked enamel, white**
3. Mounting: **Countersunk screw** or **Concealed**.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install diffusers, registers, and grilles level and plumb.

B. Ceiling-Mounted Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Make final locations where indicated, as much as practical. For units installed in lay-in ceiling panels, locate units in the center of panel unless otherwise indicated. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.

C. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION 233713

SECTION 236000 - PACKAGED COMPRESSOR, CONDENSER, and AIR-HANDLER UNITS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with ASHRAE 15.

C. ASHRAE/IESNA 90.1-2004 Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2004, Section 6 - "Heating, Ventilating, and Air-Conditioning."

D. Warranties: Submit a written warranty, signed by manufacturer, agreeing to repair or replace components that fail within five years after Certificate of Completion.

E. See NSP Green Building Practices Handbook, Section 3.0 – Energy and Atmosphere for further requirements.

1. Incorporate more efficient heating and cooling system.

a. Install HVAC equipment that meets the requirements of the ENERGY STAR for Homes national Builder Option Package. Include proper sizing of system per the ACCA manual J. (for cooling ≥ 13 SEER & Heating ≥ 7.7 HSPF)

F. See NSP Green Building Practices Handbook, Section 5.3 – Air Filtration for further requirements.

PART 2 - PRODUCTS

2.1 CONDENSING UNITS **5 TONS** AND SMALLER

A. Description: Factory assembled and tested; consisting of compressors, condenser coils, fans, motors, refrigerant reservoirs, and operating controls.

1. Available Products:

a. LENNOX; Merit Series; 14ACX Air Conditioner

b. See ATTACHED for details.

2. Compressor: Hermetically sealed and isolated for vibration. Include thermal-, current-, and temperature-sensitive overload devices, start capacitor, relay, and contactor.
3. Refrigerant Charge: **R410A** and/or **See NSP Green Building Practices Handbook, Section 3.7 – Refrigerant Management for requirements.**
4. Condenser Coil: Copper-tube, aluminum-fin coil, with liquid sub-cooler.
5. Condenser Fan: Direct-drive, aluminum propeller fan; with permanently lubricated motor with thermal-overload protection.

2.2 CAPACITIES AND CHARACTERISTICS

A. Cooling:
1. See LENNOX for specifications

B. Heating:
1. See LENNOX for specifications

C. Single-Point Electrical Connection:

1. Volts: **240**
2. Phase: **Single**
3. Hertz: **60**

2.3 AIR HANDLER UNITS **5 TONS** AND SMALLER

A. Description: Factory assembled and tested,; consisting of blower motor, evaporator coil, fans, motors, check & expansion devices, and operating controls.

1. Available Products:
a. LENNOX; Elite Series; CBX32M Air Handler
b. See ATTACHED for details.
2. Direct-Drive Blower Motor
3. Refrigerant Charge: **R410A** and/or **See NSP Green Building Practices Handbook, Section 3.8 – Refrigerant Management for requirements.**
4. Evaporator Coil
5. Expansion Device

2.4 CAPACITIES AND CHARACTERISTICS

A. Cooling:
1. See LENNOX for specifications

B. Heating:
1. See LENNOX for specifications

C. Single-Point Electrical Connection:

1. Volts: **240**
2. Phase: **Single**
3. Hertz: **60**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units level and plumb. Maintain recommended clearances.

B. Install ground-mounted units on **4-inch** thick, reinforced-concrete base. Anchor unit to base using inserts or anchor bolts, **including a galvanized steel or aluminum security cage.**

C. Install electrical devices according to NFPA 70.

END OF SECTION 236200

SECTION 260000 – ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. This Section covers :
1. Common Work Results for Electrical
2. Lighting Control Devices
3. Panel Boards
4. Electric Metering
5. Lightning Protection For Structures

B. **The Contractor shall arrange for all permits, pay all fees, charges and expenses necessary for a complete and operating system.**

C. **All materials shall be new unless otherwise specified, and UL approved and National Electrical Code rated. All drilling, cutting and fastening shall be neat and true. All patching shall match the existing surrounding surface in design, texture and color.**

D. **All wiring is to be copper in material and installed per the 2004 Florida Building Code.**

E. **Contractor is to comply with all Code requirements and local ordinances of City and/or County having supervisory jurisdiction.**

F. **All existing Electrical Systems and associated components must be checked and evaluated by the Developer/Contractor "PRIOR TO CONSTRUCTION".**

G. Comply with NFPA 70.

PART 2 - ELECTRICAL APPLICATIONS

A. **Appliances**
1. **Provide adequate voltage/electrical power to all appliances and its associated equipment per Section 113100 Residential Appliances.**

B. **Equipment**
1. **All equipment to be installed shall be Energy Star or of the most efficient classification for any particular product category unless indicated otherwise by NSP.**

PART 3 - ELECTRICAL IDENTIFICATION MATERIALS

A. Conductor Identification Materials: Color-Coding Conductor Tape: Self-adhesive vinyl tape 1 to 2 inches wide.

B. Underground-Line Warning Tape: Permanent, bright-colored, continuous-printed, polyethylene tape with continuous metallic strip or core.

C. Tape Markers for Wire: Vinyl or vinyl-cloth, self-adhesive, wraparound type with circuit identification legend machine printed by thermal transfer or equivalent process.

D. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

E. Metal-Backed, Butyrate Warning Signs: Weather-resistant, non-fading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.

F. Equipment Identification Labels: Engraved, laminated acrylic or melamine label; punched or drilled for screw mounting. White letters on a dark-gray background; red letters for emergency systems.

G. Fasteners: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 4 - EXECUTION

4.1 GENERAL ELECTRICAL EQUIPMENT INSTALLATION REQUIREMENTS

A. Install electrical equipment to allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.

B. Install electrical equipment to provide for ease of disconnecting the equipment with minimum interference to other installations.

C. Install electrical equipment to allow right of way for piping and conduit installed at required slope.

D. Install electrical equipment to ensure that connecting raceways, cables, wire-ways, cable trays, and bus-ways are clear of obstructions and of the working and access space of other equipment.

E. Install required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

F. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.

G. Install sleeve and sleeve seals of type and number required for sealing electrical service penetrations of exterior walls.

H. Comply with NECA 1.

4.2 RACEWAY AND CABLE INSTALLATION

A. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.

B. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.

C. Install raceways and cables conceal within finished walls, ceilings, and floors unless otherwise indicated.

D. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.

4.3 WIRING METHODS

A. Service Entrance: THHN-THWN, single conductors in raceway.

B. Exposed Feeders, Branch Circuits, and Class 1 Control Circuits, Including in Crawlspaces: THHN-THWN, single conductors in raceway.

C. Feeders and Branch Circuits Concealed in Ceilings, Walls, Partitions, and Crawlspaces: THHN-THWN, single conductors in raceway.

D. Feeders and Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and underground: THHN-THWN, single conductors in raceway.

E. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, and strain relief device at terminations to suit application.

F. Class 2 Control Circuits: THHN-THWN, in raceway.

4.4 GROUNDING

A. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.

B. Pipe and Equipment Grounding Conductor Terminations: Bolted.

C. Underground Connections: Welded.

D. Install grounding conductors routed along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

E. Install ground rods driven into ground until tops are 2 inches below finished floor or final grade unless otherwise indicated.

F. Make connections without exposing steel or damaging coating if any.

G. Install bonding straps and jumpers in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

H. Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

I. Bond to equipment mounted on vibration isolation hangers and supports so vibration is not transmitted to rigidly mounted equipment.

J. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.

4.5 IDENTIFICATION

A. Accessible Raceways and Cables of Auxiliary Systems: Identify the following systems with color-coded, self-adhesive color coding tape-in bands:

1. Fire-Alarm System: Red.
2. Security System: Blue and yellow.
3. Telecommunication System: Green and yellow.

B. Power-Circuit Conductor Identification: For No. 3 AWG conductors and larger, at each location where observable, identify phase using color-coding conductor tape.

C. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring.

D. Warning Labels for Enclosures for Power and Lighting: Comply with 29 CFR 1910.145; identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.

E. Equipment Identification Labels:

1. Labeling Instructions:

a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Provide a single line of text with 1/2-inch- high letters on 1-1/2-in high label; where two lines of text are required, use labels 2 inches high.
b. Outdoor Equipment: Engraved, laminated acrylic or melamine label, drilled for screw attachment.
c. Elevated Components: Increase sizes of labels and legend to those appropriate for viewing from the floor.

2. **Equipment to Be Labeled:**

a. **Panel boards, electrical cabinets, and enclosures.**
b. **Disconnect switches.**
c. **Enclosed circuit breakers.**
d. **Power transfer equipment.**
e. **Contactors.**

F. Verify identity of each item before installing identification products.

G. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

H. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Ungrounded service feeder and branch-circuit conductors.

1. Colors for 208/120-V Circuits:

a. Phase A: Black.
b. Phase B: Red.
c. Phase C: Blue.

2. Colors for 480/277-V Circuits:

a. Phase A: Brown.
b. Phase B: Orange.
c. Phase C: Yellow.

3. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points.

I. Underground-Line Warning Tape: Continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade.

4.6 INSTALLATION OF HANGERS AND SUPPORTS

A. Fasten hangers and supports securely in place, with provisions for thermal and structural movement. Install with concealed fasteners unless otherwise indicated.

B. Separate dissimilar metals and metal products from contact with wood or cementitious materials, by painting each metal surface in area of contact with a bituminous coating or by other permanent separation.

C. Raceway Support Methods: In addition to methods described in NECA 1, IMC and RMC may be supported by openings through structure members, as permitted in NFPA 70.

D. Multiple Raceways or Cables: Install on trapeze-type supports fabricated with steel slotted channel.

E. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

F. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods, unless otherwise indicated or required by Code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
6. To Light Steel: Sheet metal screws.
7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount on slotted-channel racks attached to substrate.

G. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

4.7 SLEEVE AND SLEEVE-SEALS INSTALLATION

A. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

B. Cut sleeves to length for mounting flush with both wall surfaces.

C. Extend sleeves installed in floors 2 inches above finished floor level.

D. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless sleeve seal is to be installed.

E. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.

F. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and cable, using joint sealant appropriate for size, depth, and location of joint.

G. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.

H. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

I. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch annular clear space between cable and sleeve for installing mechanical sleeve seals.

4.8 FIRESTOPPING

A. Apply fire-stopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

PART 5 - PRODUCTS

5.1 Lighting Control Devices

A. **OUTLETS and SWITCHES: Repair/Replace or Install -The entire structure shall be provided with a minimum of four (4) operable duplex outlets in each habitable room, except for the kitchen and the bathroom. The kitchen shall have a minimum of two (2) outlets, one (1) in the area of the kitchen cabinets being a ground fault circuit interrupter duplex outlet. The other kitchen outlet should be in the area of the refrigerator. The bathroom shall have one (1) ground fault circuit interrupter duplex outlet located near the medicine cabinet. All outlets, switches and cover plates that have been painted over have to be changed. All work shall conform to local building codes/ordinances.**

B. OUTDOOR MOTION SENSORS (PIR)
1. Performance Requirements: Suitable for operation in ambient temperatures ranging from minus 40 to plus 130 deg F, rated as rain-tight according to UL 773A.

2. Operation: Turn lights on when sensing infrared energy changes between background and moving body in area of coverage; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
3. Mounting:

a. Sensor: Suitable for mounting in any position on a standard outdoor junction box.
b. Relay: Internally mounted in a standard weatherproof electrical enclosure.
c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.

4. Bypass Switch: Override the on function in case of sensor failure.
5. Automatic Light-Level Sensor: Adjustable from 1 to 20 fc (11 to 215 lx); keep lighting off during daylight hours.

5.2 EXECUTION

A. SENSOR INSTALLATION
1. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

B. CONTACTOR INSTALLATION
1. Mount electrically held lighting contactors with elastomeric isolator pads, to eliminate structure-borne vibration, unless contactors are installed in an enclosure with factory-installed vibration isolators.

C. WIRING INSTALLATION
1. Wiring Method: Minimum conduit size shall be 1/2 inch.
2. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and non-power-limited conductors according to conductor manufacturer's written instructions.
3. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.

4. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

5.3 IDENTIFICATION

A. Identify components and power and control wiring.

1. Identify controlled circuits in lighting contactors and Panel Boards.
2. Identify circuits or Light Fixtures controlled by photoelectric and occupancy sensors at all Panel Boards.

B. Label time switches and contactors with a unique designation.

5.4 PANALBOARDS

A. **ELECTRIC SERVICE: 150 AMP (MIN) Repair/Replace: Dispose of old electric service to code legal dump. Install a residential, 150 amps, single phase, and 3-wire electric service. Include a main disconnect, circuit panel board, meter socket, service head and service cable ground rod to meet local codes and service requirements.**

1. INSTALLATION
   a. Install panel boards and accessories according to NEMA PB 1.1.
   b. Mount top of trim 74 inches above finished floor, unless otherwise indicated.
   c. Mount plumb and rigid without distortion of box. Mount recessed panel boards with fronts uniformly flush with wall finish.
   d. Install over-current protective devices and controllers.
2. CLEANING
   a. On completion of installation, inspect interior and exterior of panel boards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

5.5 ELECTRIC METERING

A. Coordinate with utility companies for services and components they furnish.

B. EQUIPMENT FOR ELECTRICITY METERING BY UTILITY COMPANY

C. Meters will be furnished by utility company.

5.6 WIRING DEVICES

A. DEVICES

1. **DOOR BELL (s): Install/ Replace Existing if Required.**

a. **Install / replace the door bell, including wiring, button, and bell unit. This is a complete installation**
b. **All residences shall have Door Bells.**

2. Convenience Receptacles: NEMA WD 1, NEMA WD 6, Configuration 5-20R, and UL 498.
3. Duplex GFCI Convenience Receptacles: 125 V, 20 A, straight blade, feed through type. NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
4. Duplex TVSS Convenience Receptacles: Straight blade, 125 V, 20 A; NEMA WD 6 Configuration 5-20R.
5. Snap Switches: NEMA WD 1 and UL 20. Single-pole, double-throw, momentary contact, center-off switches, 120/277 V, 20 A; for use with mechanically held lighting contactors.
6. Wall-Box Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters.
   a. Continuously adjustable slider; with single-pole or three-way switching to suit connections. Comply with UL 1472.
7. Incandescent Lamp Dimmers: 120 V; control shall follow square-law dimming curve. On-off switch positions shall bypass dimmer module.
8. Fluorescent Lamp Dimmer Switches: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming with low end not greater than 20 percent of full brightness.
9. Fan Speed Controls: Modular, 120-V, full-wave, solid-state units with integral, quiet on-off switches and audible frequency and EMI/RFI filters. Comply with UL 1917.
   a. The 5-A rating in first subparagraph below allows more than one fan to be controlled by the same device.
   b. Continuously adjustable slider 1.5 A.
   c. Three-speed adjustable slider, 1.5 A.
10. Telephone Outlet: Single RJ-45 jack for terminating 100-ohm, balanced, 4-pair UTP; TIA/EIA-568-B.1; complying with Category 5e. Comply with UL 1863.
11. Combination TV and Telephone Outlet: Single RJ-45 jack for 100-ohm, balanced, 4-pair UTP; TIA/EIA-568-B.1; complying with Category 5e; and one Type F coaxial cable connector.
12. Wall Plates, Finished Areas: Smooth, high-impact thermoplastic, fastened with metal screws having heads matching plate color.
   a. Wall Plates, Unfinished Areas: Smooth, high-impact thermoplastic with metal screws.
   b. Wall Plates, Damp Locations: Thermoplastic with spring-loaded lift cover, and listed and labeled for use in wet locations.

B. Floor Service Fittings:

1. Modular, flush-type dual-service units suitable for wiring method used.
2. Compartments: Barrier separates power from voice and data communication cabling.
3. Service Plate: Rectangular with satin finish.
4. Power Receptacle: NEMA WD 6, Configuration 5-20R, gray finish, unless otherwise indicated.

C. Finishes:

1. Wiring Devices Connected to Normal Power System: White unless otherwise indicated or required by NFPA 70 or NSP device listing.
2. Wiring Devices Connected to Emergency Power System: Red.
3. TVSS Devices: Blue.

D. EXECUTION (DEVICES)

1. INSTALLATION
   a. NECA 1 referenced in first paragraph below includes device mounting-height requirements.
   b. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
   c. Install devices and assemblies plumb, level, and square with building lines.
   d. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.
   e. Install unshared neutral conductors on line and load side of dimmers.
   f. Mount devices flush, with long dimension vertical, and grounding terminal of receptacles on top unless otherwise indicated. Group adjacent devices under single, multi-gang wall plates.

5.7 CIRCUIT BREAKERS

A. **Circuit Breakers shall be used with their specific fuse and breaker size and the wire gauge that it is meant to protect.**

B. **All Circuit Breakers shall have minimum 5-mA trip Sensitivity.**

C. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity.

D. INSTALLATION
1. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
2. Comply with mounting and anchoring requirements specified in Division 26 Sections "Common work Results for Electrical."
3. Install fuses in fusible devices.
4. Comply with NECA 1

5.8 LIGHTNING PROTECTION SYSTEM COMPONENTS

A. Comply with UL 96 and NFPA 780.

B. Roof-Mounted Air Terminals: NFPA 780, Class I, aluminum unless otherwise indicated.

1. Single-Membrane, Roof-Mounting Air Terminals: Designed for single-membrane roof materials.

C. Main and Bonding Conductors: Aluminum.

D. Ground Rods: Zinc-coated steel, sectional type; 5/8 inch in diameter by 96 inches long.

E. EXECUTION

1. INSTALLATION
   a. Install lightning protection components and systems according to UL 96A and NFPA 780.
   b. Install conductors with direct paths from air terminals to ground connections. Avoid sharp bends and narrow loops. Where indicated, run conductors in nonmetallic raceway.
   c. Conceal the following conductors:
      1) System conductors.
      2) Down conductors.
      3) Interior conductors.
      4) Conductors within normal view of exterior locations at grade within 200 feet of building.
2. Exothermic-welded connections are considered more permanent than crimped or bolted connections. If exothermic-welded connections are needed, retain first paragraph below.
3. Cable Connections: Exothermic-welded connections for conductor splices and connections between conductors and other components, except those above single-ply membrane roofing.
4. Air Terminals on Single-Ply Membrane Roofing: Comply with adhesive manufacturers' written installation instructions.
5. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture, unless moisture is permanently excluded from the junction of such materials.
6. Use conductors with protective coatings where conditions would cause deterioration or corrosion of conductors.

END OF SECTION 260000

SECTION 265000 - LIGHTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for each Lighting Fixture.

B. Comply with IEEE C2, "National Electrical Safety Code."

C. Coordinate ceiling-mounted Lighting Fixtures with ceiling construction, mechanical work, and security and fire-prevention features mounted in ceiling space and on ceiling.

D. **All materials shall be new unless otherwise specified, and UL approved and National Electrical Code rated. All drilling, cutting and fastening shall be neat and true. All patching shall match the existing surrounding surface in design, texture and color.**

E. **All electrical lighting fixtures must be cleaned, both on the inside and outside.**

F. **All homes existing light fixtures will be replaced with the NSP Approved Light Fixtures listed in the lighting schedule in this section.**

G. **All habitable rooms shall have a (2) bulb overhead light fixture with cover. All Fixtures shall be wall switched. Provide and Install light fixtures (if required) in:**

1. **Bathrooms**
2. **Hallways**
3. **Bedrooms**
4. **Kitchens**
5. **Exterior door locations (1 blub)**
6. **Stairway Common Hallway**
7. **Utility Room (1 blub)**
8. **Other common Areas**

H. **See NSP Green Building Practices Handbook, Section 3.5 – Lighting.**

1. **Reduce energy consumption of domestic appliances.**

   a. **Install compact fluorescent light bulbs (cfl) in high use rooms, but in all cases install fixtures in accordance with the Light Fixture Schedule in this section.**
   b. **Security illumination shall have motion sensor controls and/or integrated photovoltaic cells.**

PART 2 - PRODUCTS

2.1 LIGHT FIXTURE SCHEDULE

A. **The NSP Program Manager has obtained special program pricing from the following manufacturers, which can be purchased through the local supplier, World Electric Supply. Contact Kenny Dixon at 904-378-4000 (office) or 904-545-3752 (cell) for details.**

1. **Progress Lighting**
2. **HomeStyle by Hubbell**

B. Kitchen Fixture:

1. Brand: Progress Lighting
2. Model#: P7279-60EB

C. Bathroom Vanity:

1. Brand: HomeStyle by Hubbell
2. Model#: HS27009-09 or HS27008-09

D. Bathroom Exhaust Fan:

1. Brand: Progress Lighting
2. Model#: PV001-30 (w/out light) or PV003-30 (w/light)

E. Bedroom/Family Room Ceiling Fan:

1. Brand: Progress Lighting
2. Model#: P2501-30

F. Bedroom/Family Room Ceiling Fan Light Kit:

1. Brand: Progress Lighting
2. Model#: P2620-30EBWB or P2601-30 (add cfl bulb)

G. Hallway/Utility/Closet/Etc:

1. Brand: HomeStyle by Hubbell
2. Model#: HS37006-30

H. Foyer/Hallway:

1. Brand: HomeStyle by Hubbell
2. Model#: HS37004-09

I. Dining:

1. Brand: HomeStyle by Hubbell
2. Model#: HS47003-09

J. Outdoor Carriage:

1. Brand: Homestyle by Hubbell
2. Model#: HS77006-31

K. Outdoor Porch:

1. Brand: HomeStyle by Hubbell or Progress Lighting
2. Model#: HS71010-31 or P7340-30EB

L. Outdoor Security Flood:

1. Brand: Progress Lighting
2. Model#: P5207-30

M. Outdoor Security Motion:

1. Brand: Progress Lighting
2. Model#: P6036-30

N. **SEE ATTACHED SHEET FOR DETAILS AND PRICING**

2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. Incandescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5A.

C. Fluorescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.

D. HID Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5B.

E. Exterior Light Fixtures: Comply with UL 1598 and listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction. **Timers, motion sensors, or light-sensitive switches are to be used when installing exterior lighting.**

F. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for Light Fixtures.

G. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

2.3 BALLASTS

A. Ballasts for Linear Fluorescent Lamps:

1. Electronic: Comply with ANSI C82.11; instant-start type.

a. Sound Rating: A, except B for T12/HO and T12/Slimline lamp ballasts.
b. BF: 0.85 or higher.
c. Power Factor: 0.95 or higher.

2. Electromagnetic: Comply with ANSI C82.1; energy saving, high-power factor, Class P, and having automatic-reset thermal protection.
3. For Temperatures Minus 20 Deg F and Higher: Electromagnetic type designed for use with indicated lamp types.
4. Low-Temperature Ballast Capability: Rated by its manufacturer for reliable starting and operation of indicated lamp(s) at temperatures 0 deg F and minus 20 deg F and higher.
5. Dimmer Controlled: Electronic type.

a. Dimming Range: 100 to 5 percent of rated lamp lumens.
b. Ballast Input Watts: Can be reduced to 20 percent of normal.
c. Compatibility: Certified by manufacturer for use with specific dimming control system and lamp type indicated.

B. Ballasts for Compact Fluorescent Lamps: Electronic programmed rapid-start type, complying with ANSI C 82.11.

1. Lamp end-of-life detection and shutdown circuit.
2. Automatic lamp starting after lamp replacement.
3. Sound Rating: A.
4. BF: 0.95 or higher unless otherwise indicated.
5. Power Factor: 0.95 or higher.

2.4 LAMPS

A. Low-Mercury Fluorescent Lamps: Comply with the EPA's toxic characteristic leaching procedure test, and yield less than 0.2 mg of mercury per liter, when tested according to NEMA LL 1.

B. T8 Rapid-Start Low-Mercury Fluorescent Lamps: Rated 32 W maximum, nominal length 48 inches, 2800 initial lumens (minimum), CRI 75 (minimum), color temperature of 3500 K, and average rated life of 20,000 hours unless otherwise indicated.

C. T8 Rapid-Start Low-Mercury Fluorescent Lamps: Rated 17 W maximum, nominal length of 24 inches , 1300 initial lumens (minimum), CRI 75 (minimum), color temperature of 3500 K, and average rated life of 20,000 hours unless otherwise indicated.

D. Compact Fluorescent Lamps: Four pin, low mercury, CRI 80 (minimum), color temperature 3500, average rated life of 10,000 hours at three hours' operation per start, and suitable for use with dimming ballasts unless otherwise indicated.

1. 13 W: T4, double or triple tube, rated 900 initial lumens (minimum).
2. 18 W: T4, double or triple tube, rated 1200 initial lumens (minimum).
3. 26 W: T4, double or triple tube, rated 1800 initial lumens (minimum).
4. 32 W: T4, triple tube, rated 2400 initial lumens (minimum).
5. 42 W: T4, triple tube, rated 3200 initial lumens (minimum).
6. 55 W: T4, triple tube, rated 4300 initial lumens (minimum).

2.5 INSTALLATION

A. Set units level, plumb, and square with ceiling and walls, and secure.

B. Support for Recessed and Semirecessed Grid-Type Fluorescent Fixtures:

1. Install ceiling support system wires at a minimum of four wires for each fixture, located not more than 6 inches from fixture corners.
2. Support Clips: Fasten to fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.

C. Suspended Lighting Fixture Support:

1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.

D. Adjust aim-able lighting fixtures to provide required light intensities.

END OF SECTION 265000

Neighborhood Stabilization Program

5.27.09

Prices expire 12.31.09 - Prices do not include tax

Catalog #	Price	Lamp	Description
HS47003-09	$50.88	included	Three-Light chandelier
HS37004-09	$19.25	included	Close-to-ceiling fixture
HS27009-09	$48.50	included	3-light bath bracket
HS27008-09	$32.75	included	2-light bath bracket
P7279-60EB	$82.21	2-F32T8	2-light 4' fluorescent cloud
HS37006-30	$17.25	included	Close-to-ceiling mushroom
HS77006-31	$16.50	13wGU24-see below for lamp	Die cast wall lantern
P7340-30EB	$43.23	26wGX24q-3	One-light close to ceiling outdoor w/photocell
HS71010-31	$13.75	60WA19	Die cast outdoor ceiling flush mount
P2620-30EBWB	$29.00	included	Ceiling fan light kit
P2501-30	$38.90	no lamp needed	52" White ceiling Fan
PV003-30	$36.70	100wA19	Exhaust Fan/Light
PV001-30	$17.00	no lamp needed	Exhaust Fan/Light
P5207-30	$16.85	2-150PAR38	Outdoor white double flood holder
P6036-30	$21.60	no lamp needed	Outdoor white motion sensor for par lampholder
MLS13GUWW	$4.40	13w lamp self-ballasted	2700K warm white
P2601-30	$15.20	included - 13W CFL	White ceiling fan light kit

World Electric Supply
569 Stuart Lane
Jacksonville, FL 32254
(904) 378-4000 office (904) 378-4054 fax
Contact: Kenny Dixon

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Close-to-Ceiling
Manufacturer: HomeStyle Lighting
Model # HS37006-30
Description: 2-light CFL close-to-ceiling
Finish: White
Width/Diameter: 9-3/8"
Height: 5-1/8"
Overall Length:
Wire Length: 0'
Lamp Quantity: 2
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Close-to-Ceiling
Manufacturer: HomeStyle Lighting
Model # HS37004-09
Description: 2-light CFL flushmount
Finish: Brushed Nickel
Width/Diameter: 13-1/4"
Height: 7
Overall Length:
Wire Length: 0'
Lamp Quantity: 2
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Chandeliers

Manufacturer: HomeStyle Lighting
Model # HS47003-09
Description: 3-light CFL chandelier
Finish: Brushed Nickel
Width/Diameter: 22-1/4"
Height: 17-1/2"
Overall Length:
Wire Length: 10'
Lamp Quantity: 3
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True

Notes: Overall ht. w/chain 93"

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Outdoor
Manufacturer: HomeStyle Lighting
Model # HS77006-31
Description: 1-light CFL die-cast wall lantern with photocell
Finish: Black
Width/Diameter: 6"
Height: 14-1/4"
Overall Length:
Wire Length: 0'
Lamp Quantity: 1
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True

Notes: H/CTR 2-3/4"

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Outdoor
Manufacturer: HomeStyle Lighting
Model # HS71010-31
Description: 1-light die-cast flush mount
SKU: HS71010-31
Category: Outdoor
Finish: Black
Width/Diameter: 9-1/8"
Height: 4-1/8"
Lamp Quantity: 1
Lamp Type: B13 Medium Base
Lamp Wattage: 60W

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Outdoor
Model # P7340-30EB
Description: One-light non-metallic close-to-ceiling. Integral photocell.
SKU: P7340-30EB
Category: Outdoor
Finish: White
Width/Diameter: 8-1/4"
Height: 4-5/8"
Overall Length:
Lamp Quantity: One
Lamp Type: Triple Tube
Lamp Wattage: 26w
Energy Efficient: True
Energy Star Compliant: True

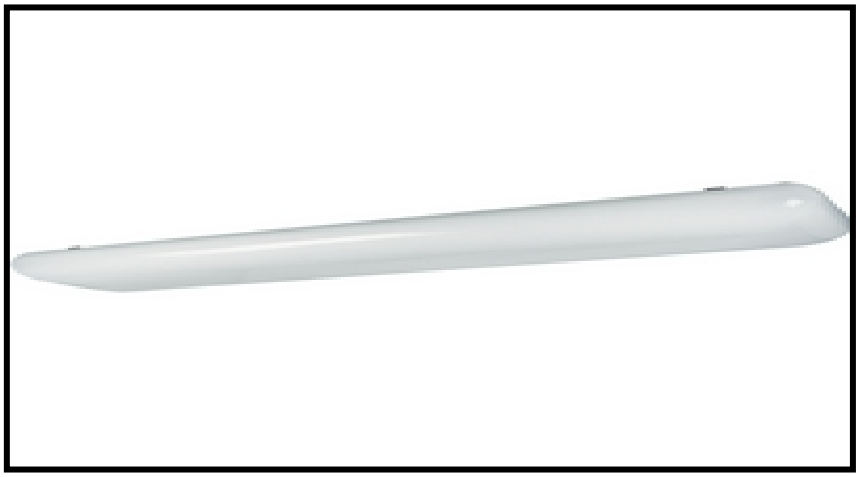
NEIGHBORHOOD STABILIZATION PROGRAM

Location: Landscape
Model # P5207-30
Description: Two painted adjustable swivel floodlights.
SKU: P5207-30
Finish: White
Width / Diameter:4-3/4"
Height:5-3/4"
Lamp Quantity: Two
Lamp Type: PAR 38
Lamp Wattage:150w max

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Landscape
Model # P6036-30
Description: 180 degree detection zone premium motion sensor accessory for Par lamp holders in White finish.
SKU: P6036-30
Category: Landscape
Finish: White
Width / Diameter:3-3/8"
Height:2-7/8"
Overall Length:3-3/4"
Notes: Adjustable range up to approximately 70' (varies with ambient temperature).

NEIGHBORHOOD STABILIZATION PROGRAM



Location: Modular Fluorescent
Model # P7279-60EB
Description: Contoured, shallow white acrylic clouds diffuser suspended from white chassis.120V HPF electronic ballast.
Category: Modular Fluorescent
Finish: White
Width / Diameter: 12"
Height: 4 5/8"
Overall Length:
Lamp Quantity: Two
Lamp Type:T8
Lamp Wattage:32w max

Notes: Energy Star

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bath & Vanity
Manufacturer: HomeStyle Lighting
Model # HS27009-09
Description: 3-light CFL bath bracket
Finish: Brushed Nickel
Width/Diameter: 24"
Height: 8"
Overall Length:
Wire Length: 0'
Lamp Quantity: 3
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True

Notes:
Extends 7-1/2"

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bath & Vanity
Manufacturer: HomeStyle Lighting
Model # HS27008-09
Description: 2-light CFL bath bracket
Finish: Brushed Nickel
Width/Diameter: 18"
Height: 8"
Overall Length:
Wire Length: 0'
Lamp Quantity: 2
Lamp Type: CFL GU24 Base
Lamp Wattage: 13W
Energy Star Compliant: True
Notes: Extends 7-1/2"

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bath Fans
Model # PV001-30
Description: 50 cfm bath fan. Sound level rating 4.0 sones.
SKU: PV001-30
Category: Bath Fans
Finish: Textured White
Width / Diameter: 8-1/2"
Height:5-1/4"

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Bath Fans
Model # PV003-30
Description: 50 cfm bath fan. Sound level rating, 4.0 sones Light included.
SKU: PV003-30
Category: Bath Fans
Finish: Textured White
Width/Diameter: 12-1/2"
Height:6-1/4"
Lamp Quantity: One
Lamp Type: Medium Base
Lamp Wattage: 60w max

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Ceiling Fans
Model # P2501-30
Description: 52" fan with 5 blades and 3-speed reversible motor. White fan with reversible white or washed oak blades.

SKU: P2501-30
Category: Ceiling Fans

Finish: White
Family: Air Pro

Width / Diameter:52"
Energy Star Compliant: True

Notes: Energy Information at High Speed: Airflow 5182 Cubic Feet Per Minute, Electricity Use 62 Watts (Excludes Lights), Airflow Efficiency 84 Cubic Feet Per Minute Per Watt.

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Fans
Model # P2620-30EBWB
Description: One-light Fan Light Kit
Finish: White
Family: 1
Type: Fans
Width/Diameter: 8-1/4"
Height: 7-1/4"
Lamp Quantity: One
Lamp Type: 4-pin Compact Fluorescent
Lamp Wattage: 18w
Energy Efficient: Yes
Energy Star Compliant: Yes

NEIGHBORHOOD STABILIZATION PROGRAM

Location: Ceiling Fans
Model # P2601-30
Description:1-light kit with white glass. For indoor/outdoor use. Quick connector for easy wiring.
Finish: White
Family: Air Pro
Width/Diameter: 8-3/8"
Height:6-3/4"
Lamp Quantity: One
Lamp Type: Medium Base
Lamp Wattage: 60w max
Notes:
Fixture is Shipped with 13w Compact Fluorescent screw-in lamp.

SECTION 271013 - STRUCTURED RESIDENTIAL CABLING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, system schematic, floor plans with cabling point labeling, and cabling color scheme.

B. Performance Requirements: Coordinate the features of materials and equipment so they form an integrated system complying with TIA/EIA-570-A. Match components and interconnections for optimum performance.

C. Comply with NFPA 70, "National Electrical Code."

D. Comply with TIA/EIA-570-A.

E. If coaxial cable is not present in the home, Contractor shall install at minimum, one outlet in each bedroom and living room.

F. All bedrooms, living room, and kitchen shall have a working phone jack.

1.2 BASIS FOR REPLACEMENT

A. If the wire throughout is aluminum, the Contractor shall remove and replace with copper wire, in accordance with local and state building code.

B. If existing receptacles do not possess a third prong for grounding and polarization, the Contractor shall remove and replace with a three prong grounded receptacle.

PART 2 - PRODUCTS

2.1 DISTRIBUTION DEVICE

A. Description: Equipment to support network, including signal amplification, cross connects, network hubs, and service terminations.

1. Auxiliary disconnect outlet and distribution device cords for telephone and television service.
2. Cross-connect devices, patch panels, cable termination devices, and accessories shall meet the data transmission speed and bandwidth of the associated cabling.
3. Comply with TIA/EIA-570-A, Grade 1 service standard.
4. Comply with TIA/EIA-570-A, Grade service standard noted on Drawings.

B. Telephone: lines from the exchange access provider; with cross-connect device to enable the selection and pairing of incoming lines with outlet lines.

1. Place outlet cabling in a star topology.
2. Branch outlets required in each bed room, kitchen and living room.
3. Cross Connect: Modular, IDC-type, cross-connect device with modules designed for punch-down caps or tools.
4. Provide space for installation and connection of an ADSL gateway distribution device furnished by access provider.

C. Television: Distribution device shall have space for **CATV** lines, and distribute in-home generated video and radio-frequency sources.

1. Place outlet cabling in a star topology.
2. Branch outlets required in each bed room, kitchen and living room and den for available TV or internet services.
3. Provide space for installation of signal amplification and conditioning.
4. Distribute in-home generated video sources to same outlet as cable television service.
5. Accommodate the installation and connection of a cable gateway distribution device furnished by access provider.

D. Speaker Cable: Cross-connect panel with number of speaker cables connected to distribution device, plus 25 percent (if installed).

E. Equipment Enclosure: Modular with equipment mounting rails to accept all specified components; 14-1/2 inches wide, suitable for mounting between studs.

1. Mounting: Surface, Flush or Semi-flush.
2. Door: Hinged, lockable.

F. Power Outlets: UL 1449; cabinet mounted, with one 15-A, 120-V ac, NEMA WD 6, Configuration 15-15R receptacle(s), with surge protection, and including the following:

1. LED indicator lights for power and protection status.
2. Peak Single-Impulse Surge Current Rating: 26 kA per phase.

G. Incoming Telephone Line Surge Protection: UL 497; cabinet-mounted, dial-up line surge suppressor for each line.

1. Working Voltage: 200 V.
2. Maximum Clamping Voltage: 270 V.

H. Incoming Television Line Surge Protection: Cabinet-mounted, coaxial cable surge suppressor for each cable, 0.3-dB maximum insertion loss at 5 to 1000 MHz. Rated for maximum surge current of 5000 A.

2.2 CABLE

A. UTP Cable: Comply with ANSI, EIA,TIA 568-B.2-1, No. 24 AWG, unshielded copper cable, Category 6, 100 ohms, 4 pair.

1. NFPA 70, Types CMG and CMP.

B. Horizontal Fiber-Optic Cable: 2-fiber cable complying with TIA/EIA-455, tight buffer, 50/125.

1. Number of Connectors per Field: One for each fiber of cable(s) assigned to field, plus spares and blank positions adequate to suit specified expansion criteria.

C. Fiber-Optic Cable Connecting Hardware: Quick-connect, simplex- and duplex-, Type FC or Type ST coupler. Insertion loss not more than 0.7 dB.

D. Series-6 Coaxial Cable: 75-ohm nominal impedance with a return loss of 20 dB maximum from 7 to 806 MHz.

1. No. 16 AWG, solid, copper-covered steel conductor; gas-injected, foam-PE insulation. Double shielded with 100 percent aluminum-foil shield and 60 percent aluminum braid.
2. Cable Connecting Hardware: Type BNC, 75 ohms.

E. Combination Cables: Designed for home networking; may be used provided the requirements for single-cable types are met.

F. Speaker Cables: 2-conductor cable, No. 14 AWG, UTP, PVC jacketed, UL Type CL3. Use two different jacket colors and a consistent conductor color.

G. Security Device Cables: Multi-conductor, No 18 AWG, UTP, with red PVC jacket, and complying with NFPA 70, Type CL2 and TIA/EIA-570-A-1 requirements.

H. Fire and Carbon Monoxide Warning Device Cables: Multi-conductor, No. 18 AWG, twisted pair, with red PVC jacket, and complying with NFPA 70, Type FPL and TIA/EIA-570-A-1 requirements.

2.3 RACEWAYS

A. Nonmetallic Flexible Raceway and Fittings: UL 2024. One-piece, plastic, dual-voltage, two-gang box and bracket, with molded-in nailing flanges.

B. Floor Boxes: Round, with partitions for power, data, and communication wire and cable. Thermoplastic covers.

2.4 WIRING DEVICES

A. Modular; each outlet configuration field fabricated from factory-made components. Listed and labeled as complying with TIA/EIA-568-B.2, TIA/EIA-B.3, and UL 1863.

B. Mount connectors on single or multi-gang faceplate.

1. Faceplates: High-impact plastic. Colors shall be ivory or white.
2. Outlet shall accept the following components:

a. Telephone and Data Jacks: IDC connector for UTP, modular, RJ-45.
b. MATV: Type F.
c. Voice: RCA type.
d. Speaker: Banana jack or Binding post type.

2.5 GROUNDING AND BONDING

A. Materials: Comply with NFPA 70 and UL 467.

2.6 IDENTIFICATION PRODUCTS

A. Comply with TIA/EIA-606-A and with applicable requirements in Division 27 Section "Common Work Results for Communications."

B. Cable Labels: Self-adhesive vinyl or vinyl-cloth wraparound tape markers, machine printed with alphanumeric cable designations.

PART 3 - EXECUTION

3.1 DEMARCATION POINTS

A. Contact access providers to locate demarcation points according to applicable regulations. Demarcation points shall be installed for the following:

1. Telephone by AT&T or Comcast
2. Television**,** AT&T or Comcast

B. Comply with BICSI RNCM.

C. Install fire stopping according to TIA/EIA-569-A.

D. Ground equipment complying with ANSI-J STD-607-A.

E. Raceway Installation:

1. Install a vertical chase consisting of **two,** 2-inch nonmetallic conduits from distribution device to the attic and to an accessible space below the floor as applicable.
2. Nonmetallic conduit shall not be installed in plenums or spaces used for environmental air.

F. Cable Installation:

1. Install exposed cable parallel and perpendicular to surfaces or exposed structural members and follow surface contours where possible.
2. Make splices, taps, and terminations only at indicated outlets, terminals, and cross-connect and patch panels.
3. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating.
4. Secure and support cable at intervals not exceeding 30 inches and not more than 6 inches from boxes, outlets, and terminals.
5. Install UTP cable using techniques, practices, and methods that are consistent with Category 6 rating of components and that ensure Category 6 performance of completed and linked signal paths, end to end.

a. Do not untwist more than 1/2 inch of Categories 5e and 6 cable at connector terminations.

6. Install security device cable between the security system cabinet and the device as follows:

   a. Two-Conductor Cable: Magnetic switches at doors and windows.

7. Install smoke and carbon monoxide warning device cable between the security system cabinet and the outlet as follows:

   a. Four-Conductor Cable: Smoke detectors, combination strobe/horn appliance.
   b. Install one detector per room and\or as required by code.
   c. Install one carbon monoxide detector device adjacent to garage.
   d. Devices must be hard-wired as described and be equipped with battery backup.

8. Protection against Physical Damage:

   a. Install cabling and nonmetallic raceways complying with NFPA 70, "Wiring Methods" Article. All cabling in this Section shall comply with provisions for nonmetallic-sheathed cabling listed in that article.
   b. Install insulated grommets or bushings when cable passes through openings in metal studs or enters boxes and cabinets.
   c. Installing cable in shallow grooves, as described in NFPA 70, "Wiring Methods" Article, is not permitted.

9. Outdoor Coaxial Cable:

   a. Outdoor connections shall be installed in enclosures complying with NEMA 250, Type 4X. Connectors shall be corrosion resistant with properly designed O-rings to keep out moisture.
   b. Attach antenna lead-in cable to support structure at intervals not exceeding 36 inches.

G. Wiring within Distribution Device:

1. Group cable-connecting hardware into separate logical fields.
2. Train conductors to terminal points with no excess.
3. Use lacing bars to restrain cable, to prevent straining connections, and to prevent bending cable to smaller radii than minimums recommended by manufacturer.

H. Separation from EMI Sources:

1. Comply with TIA/EIA-570-A for separating telecommunication cabling from potential EMI sources, including electrical power lines and equipment. Comply with the following minimum separation distances from possible sources of EMI:

   a. Power Lines or Electrical Equipment near Open Cabling or Cabling in Nonmetallic Raceways: 2 inches.
   b. Electrical Motors and Transformers, 5 kVA or HP and Larger: 48 inches.
   c. Fluorescent Fixtures: 5 inches.

2. Maintain electrical branch circuit conductors (line, neutral, and grounding wires) together by sheathing or bundling to minimize inductive coupling. 2 inches may be reduced if cabling crosses at right angles.
3. Install cabling in grounded metallic raceways where the required separation is not practical.

3.2 IDENTIFICATION

A. Cable and Wire Identification:

1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.
3. Within Connector Fields in Distribution Devices: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.

B. Cable Schedule: Post in distribution device. List incoming and outgoing cables and their designations, origins, and destinations. Furnish an electronic copy of final comprehensive schedules for Project.

3.3 FIRESTOPPING

A. Fire stopping: Comply with requirements in Division 07, Section “Penetration Firestopping.”

B. Comply with TIA-569-B, Annex A, “Firestopping.”

C. Comply with BICSI TDMM, “Firestopping Systems” Article.

END OF SECTION 271013

SECTION 281600 - INTRUSION DETECTION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. System Description: Hard-wired, modular, microprocessor-based controls, intrusion sensors and detection devices, and communication links to perform monitoring, alarm, and control functions.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NFPA 70.

D. All door and window openings shall be wired with surface mounted magnetic switches.

E. Provide twelve (12) months of monitored service.

PART 2 - PRODUCTS

2.1 FUNCTIONAL DESCRIPTION OF SYSTEM

A. Supervision: System components shall be continuously monitored for normal, alarm, and trouble conditions for a period of 12 months after closing. In addition, the system shall be monitored between the period of final construction and prior to closing. Indicate deviations from normal conditions, including identification of device or circuit and whether deviation is an alarm or malfunction.

B. System Control: Central-station control unit shall directly monitor intrusion detection units and connecting wiring.

C. Circuit Supervision: Supervise all signal and data transmission lines, links with other systems, and sensors from central-station control unit. Initiate an alarm in response to opening, closing, shorting, or grounding of a signal or data transmission line.

D. Manual Secure-Access Control: Coded entries at manual stations shall change status of associated protected zone between secure and access conditions.

2.2 SYSTEM COMPONENT REQUIREMENTS

A. Surge Protection: Protect components from voltage surges. Include surge protection for external wiring.

B. Interference Protection: Components shall be unaffected by radiated RFI and electrical induction of 15 V/m over a frequency range of 10 to 10,000 MHz and conducted interference signals up to 0.25-V rms injected into power supply lines at 10 to 10,000 MHz.

2.3 ALARM-INITIATING DEVICES

A. Door and Window Switches: Balanced-magnetic switch, complying with UL 634, installed on frame with integral over-current device to limit current to 80 percent of switch capacity. Bias magnet and minimum of two encapsulated reed switches shall resist compromise from introduction of foreign magnetic fields.

2.4 CENTRAL-STATION CONTROL UNIT

A. Construction: Modular, with separate and independent alarm and supervisory system modules and with capacity for expanding number of protected zones by a minimum of 25 percent. Alarm-initiating protected zone boards shall be plug-in cards**.** Arrangements that require removal of field wiring for module replacement are not acceptable.

B. Comply with UL 1023.

C. Alarm Indication: Audible signal sounds and LED, identifies zone originating the alarm. Annunciator panel displays a common alarm light and an audible tone**.**

1. Alarm activation sounds a siren.

D. Resetting Controls: Prevent resetting of alarm, supervisory, or trouble signals while alarm or trouble condition persists.

E. Power Supply Circuits: Central-station control unit shall provide power for remote power-consuming detection devices.

F. UPS: Sized to provide a minimum of six hours of central-station control-unit operation.

G. Cabinet: Lockable, steel enclosure arranged so operations required for testing, normal operation, and maintenance are performed from front of enclosure. Identify, with permanent labels, individual components and modules within cabinet.

2.5 SECURITY FASTENERS

A. Operable only by tools produced for use on specific type of fastener by fastener manufacturer or other licensed fabricator. Drive system type, head style, material, and protective coating as required for assembly, installation, and strength.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with UL 1641.

B. Occupancy Adjustments: When requested within 12 months of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to 2 visits to Project during other than normal occupancy hours for this purpose.

C. Wiring Method: Install wiring in metal raceways "fished" in concealed spaces**.** Ground system components and conductor and cable shields to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

D. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connection**,** and to assist in field testing. Report results in writing.

END OF SECTION 281600

SECTION 283100 - FIRE DETECTION AND ALARM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. System Description: Non-coded, conventional, hardwired, zoned, 24-V dc loop system.

1. Initiating Device Circuits: NFPA 72, Class B, Style B.
2. Notification Appliance Circuits: NFPA 72, Class B, Style Y.

B. Comply with NFPA 72.

C. UL listed and labeled.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Smoke alarms must be placed in each room and as required by local and state building code.

F. The smoke alarm must be installed according to the manufacturer's specifications. The alarm must be installed no closer than four (4") inches from the top of the smoke alarm to the ceiling or no further than six (6") inches from the ceiling. You can mount the smoke alarm on the ceiling and it has to be installed no closer than six (6") inches to any wall. CHECK LOCAL FIRE CODES.

G. Carbon Monoxide Detector, hard wired with battery back-up and located in adjacent rooms that share a door to the garage.

H. See NSP Green Building Practices handbook, Section 5.1 – Combustion Devices and Section 5.5 – Garage Pollutant Protection for further requirements.

PART 2 - PRODUCTS

2.1 ALARM-INITIATING DEVICES

A. Smoke Detectors: UL 268, hard wired with battery back-up.

2.2 NOTIFICATION APPLIANCES

A. Low-Level Chimes: Vibrating type with 75 dBA.

2.3 WIRE AND CABLE

A. General: UL listed and labeled as complying with NFPA 70, Article 760.

B. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer.

C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.

1. Low-Voltage Circuits: No. 16 AWG, minimum.
2. Line-Voltage Circuits: No. 12 AWG, minimum.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and test systems according to NFPA 72. Comply with NECA 1.

B. Wiring Method: Install wiring "fished" in concealed spaces**.**

END OF SECTION 283100

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Unauthorized excavation consists of excavation below sub-grade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by NSP Construction Manager, shall be without additional compensation.

B. Do not interrupt existing utilities serving facilities occupied by Owner or others unless permitted in writing by NSP Construction Manager and then only after arranging to provide temporary utility services according to requirements indicated.

C. TREE REMOVAL – If a tree is within five feet of the foundation of the home, that tree shall be cut down, de-stumped, and removed from the site. Additionally, limbs overhanging the home shall be cut down and removed from the site.

D. **The Contractor shall fill or grade around the structure(s) and or building(s) to provide proper drainage of all water from the structure(s) to prevent and standing water. Further, the Contractor shall not grade the lot in a way to adversely affect the adjacent property**.

E. Minimize long-term environmental damage to the building lot during the construction process.

1. Provide tree barricades around all trees to remain during construction.

2. Where possible, limit disturbance and compaction to existing soils to the area associated with the existing driveway.

3. Restore all areas compacted during construction to natural compacted profile.

F. Reduce impacts resulting from erosion of soils by wind and water.

1. Protect all on-site and adjacent inlets and outfalls with hay bales, silt fencing, or comparable measures.

2. Stabilize areas that are disturbed by construction by hydro-seeding, sod, rye grass, or comparable measures.

G. See NSP Green Building Practices Handbook, Section 1.1 – Erosion Control Measures and Section 1.2 Minimize Sire Disturbance for further requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, or other deleterious matter.

B. Unsatisfactory Soil: ASTM D 2487 Soil Classification Groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

C. Backfill and Fill: Satisfactory soil materials.

D. **Sub-base Material**: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least **90 percent** passing a **1-1/2-inch** sieve and not more than **12 percent** passing a **No. 200 sieve**.

E. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with **100 percent** passing a **1-inch** sieve and not more than 8 percent passing a **No. 200 sieve**.

F. Drainage Course: Narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading **Size 57**; with **100 percent** passing a **1-1/2-inch** sieve and **0 to 5 percent** passing a **No. 8 sieve**.

G. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Protect and maintain erosion and sedimentation controls during earth moving operations.

B. Protect sub-grades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

C. Prevent surface water and ground water from entering excavations, from ponding on prepared sub-grades, and from flooding Project site and surrounding area.

D. Excavate to sub-grade elevations regardless of character of materials and obstructions encountered.

E. Excavate for structures, building slabs, pavements, and walkways. Trim sub-grades to required lines and grades.

F. Utility Trenches: Excavate trenches to indicated slopes, lines, depths, and invert elevations. Maintain **12 inches** of working clearance on each side of pipe or conduit.

1. Place, compact, and shape bedding course to provide continuous support for pipes and conduits over rock and other unyielding bearing surfaces and to fill unauthorized excavations.
2. Place and compact initial backfill of satisfactory soil material or sub-base material, free of particles larger than **1 inch**, to a height of **12 inches** over the utility pipe or conduit. Place and compact final backfill of satisfactory soil material to final sub-grade.

G. Plow strip or break up sloped surfaces steeper than **1 vertical to 4 horizontal** to receive fill.

H. Proof-roll sub-grade below the building slabs and other structural areas including driveways and sidewalks with a pneumatic-tired **and** loaded 10-wheel, tandem-axle dump truck weighing **not** less than **15 tons** to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated sub-grades.

I. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface, pulverize, moisture-condition or aerate soil, and re-compact.

J. Place backfill and fill in layers not more than **12 inches** in loose depth at optimum moisture content. Compact each layer under structures, building slabs, pavements, and walkways to **95 percent** of maximum dry unit weight according to ASTM D 698; elsewhere to **90 percent**.

K. Grade areas to a smooth surface to cross sections, lines, and elevations indicated. Grade lawns, walkways, and unpaved sub-grades to tolerances of plus or minus **2 inch** and pavements and areas within building lines to plus or minus **1 inch**.

L. Under pavements and walkways, place sub-base course material on prepared sub-grades and compact at optimum moisture content to required grades, lines, cross sections, and thicknesses.

M. Under slabs-on-grade, place drainage course on prepared sub-grade and compact to required cross section and thickness.

N. Allow testing agency to inspect and test each sub-grade and each fill or backfill layer and verify compliance with requirements.

O. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and product certificates for each type of product indicated. Include the EPA-Registered Label.

B. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located.

C. Regulatory Requirements: Formulate and apply termiticides according to the EPA-Registered Label.

D. Continuing Service: Provide 12 months continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity, wood destroying organisms, or other vermin.

E. Provide one year Termite Bond.

F. Structure shall be inspected by a licensed, certified and bonded pest control agency.

G. Home improvement features should minimize the need for poisons for control of insects, rodents and other pests.

1. Remove up to 8" of organic and soil buildup around the building exterior foundation wall (siding, trim & structure).

2. Seal all external cracks and entry points. For areas that cannot be sealed, install screens or other devices to deter rodents.

PART 2 - PRODUCTS

2.1 TERMITE CONTROL PRODUCTS

A. Soil Treatment Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution.

1. Service Life of Treatment: Soil treatment termiticide that is effective for not less than five years against infestation of subterranean termites.

B. Wood Treatment with Borate: Provide an EPA-registered borate temiticide complying with requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

B. Soil Treatment Application: Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction:

1. At foundations.
2. Under concrete floor slabs-on-grade.
3. At hollow masonry.
4. At expansion and control joints and slab penetrations.
5. At crawlspaces; treat soil under and adjacent to foundations. Treat adjacent areas including around entrance platform, porches, and equipment bases.

C. Post warning signs in areas of soil treatment application.

D. Reapply soil termiticide treatment solution to areas disturbed by subsequent excavation or other construction activities following application.

E. Wood Treatment Application: Provide quantity of borate solution required for application at the label volume and rate for the maximum specified concentration of borate, according to manufacturer's EPA-Registered Label, so that wood framing, sheathing, siding, and structural members subject to infestation receive treatment.

END OF SECTION 313116

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and hot-mix asphalt design mixes.

B. Regulatory Requirements: Comply with requirements of the City of Jacksonville for asphalt paving work.

C. Asphalt-Paving Publication: Comply with AI MS-22, "Construction of Hot Mix Asphalt Pavements," unless more stringent requirements are indicated.

D. Driveways – Each home must have an asphalt, concrete, or brick/concrete paver driveway, from the street to the garage or carport area and at least as wide as such area. An asphalt driveway shall be a minimum of one and one-quarter (1.25”) inches thick. If the home does not have a garage or carport area there shall be, at minimum, space to park two cars.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hot-Mix Asphalt for Driveways and Sidewalks: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types."

1. Sub-base: **12” minimum LBR 40, compacted to 98% max density** AASHTO T-180.
2. Limerock: **6” compacted to minimum LBR 75**, **100% max density**, AASHTO T-180.
3. Surface Course: **1.25 Type S-3, 1500 lb.**
4. Provide mixes with a history of satisfactory performance in geographical area where Project is located and complying with ASTM D 3515 for the following nominal, maximum aggregate sizes.

   a. Base Course: N\A
   b. Surface Course: 3/8”

B. Tack Coat: AASHTO M 140 emulsified asphalt, or AASHTO M-208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

PART 3 - EXECUTION

3.1 PAVING

A. Tack coat existing asphalt or concrete surfaces and allow tack coat to cure undisturbed.

B. Place hot-mix asphalt to required grade, cross section, and thickness. Promptly correct surface irregularities in paving course.

1. Spread mix at minimum temperature of **250 deg F.**

C. Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers. Complete compaction before mix temperature cools to **185 deg F.**

D. Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness.

E. Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to **92 percent** of reference maximum theoretical density according to ASTM D 2041.

F. Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

G. While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

H. Remove and restore paved areas that are defective or contaminated.

END OF SECTION 321216

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Driveways – Each home must have an asphalt, concrete, or brick/concrete paver driveway, from the street to the garage or carport area and at least as wide as such area. A concrete driveway shall be a minimum of five (5”) inches thick. If the home does not have a garage or carport area there shall be, at minimum, space to park two cars.

B. Concrete sidewalks and service walks shall be a minimum of four (4”) inches thick with one-half (1/2”) inch thick expansion joint not more than eighteen (18’) feet apart and at curb and any other structure junctions.

C. Saw cut expansion joints every six (6’) feet within twenty-four hours of pour.

D. Use wood or carpet float finish rounding al edges to one-quarter (1/4”) inch radius.

E. Comply with ACI 301 unless otherwise indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Welded Wire Reinforcement: ASTM A 185, flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

C. Portland Cement: ASTM C 150, Type I or II, gray. Supplement with the following if necessary**:**

1. Fly Ash: ASTM C 618, Type C or F.
2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

D. Normal-Weight Aggregates: ASTM C 33, Class 4S, uniformly graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.

E. Air-Entraining Admixture: ASTM C 260.

F. Chemical Admixtures: ASTM C 494. Calcium chloride shall not be used.

G. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures.

H. Synthetic Fiber: ASTM C 1116, Type III, polypropylene fibers, 1/2 to 1-1/2 inches long.

I. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

J. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery.

2.2 CONCRETE MIXTURES

A. Proportion normal-weight concrete mixes to provide the following properties:

1. Compressive Strength (28 Days) **3000 psi.**
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: 5-1/2 percent plus or minus 1.5 percent.
5. Synthetic Fiber: 1.0 lb/cu. Yd
6. **OR AS APPROVED BY NSP CONSTRUCTION MANAGEMENT**

PART 3 - EXECUTION

3.1 PAVING

A. Accurately position and support reinforcement, and secure against displacement.

B. Locate and install contraction, construction, isolation, and expansion joints as indicated or required.

C. Place concrete in a continuous operation within planned joints or sections. **Do not add water** to adjust slump.

D. Float surfaces to true planes within a tolerance of 1/4 inch in 10 feet and medium-to-fine-textured broom finish.

E. Tool edges and joints to a radius of 1/4 inch to 3/8 inch.

F. Slip-Resistive Aggregate Finish: Before final floating, spread 40 lb/100 sq. ft. of dampened, slip-resistive aggregate over paving surface in two applications.

G. Begin curing after finishing concrete. Keep concrete continuously moist for at least seven days. Remove and replace concrete paving that is broken, damaged, or defective. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

H. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days.

END OF SECTION 321313

SECTION 321350 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Concrete mix designs

B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.

C. Comply with ACI 301, "Specification for Structural Concrete"; ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"; and CRSI's "Manual of Standard Practice."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Plain Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, as drawn, flat sheet.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

E. Portland Cement: ASTM C 150, Type I or II.

F. Fly Ash: ASTM C 618, Type C or F.

G. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

H. Silica Fume: ASTM C 1240, amorphous silica.

I. Aggregates: ASTM C 33, uniformly graded.

1. Maximum Aggregate Size: **3/4 inch**

J. Synthetic Fiber: ASTM C 1116/C 1116M, Type III, polypropylene fibers, **1/2 to 1-1/2 inches** long.

K. Air-Entraining Admixture: ASTM C 260.

L. Chemical Admixtures: Do not use calcium chloride or admixtures containing calcium chloride.

M. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures.

N. Vapor Retarder: Reinforced sheet, ASTM E 1745, Class A.

O. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

P. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

Q. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

R. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

S. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.2 MIXES

A. Comply with ACI 301 requirements for concrete mixtures.

B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:

1. Minimum Compressive Strength: **3000 psi** at **28 days**.
2. Maximum Water-Cementitious Materials Ratio: no more than, **0.50**, no less than **0.45**.
3. Slump Limit: **5 inches,** plus or minus 1 inch.
4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.
5. Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116.

1. When air temperature is above **90 deg F,** reduce mixing and delivery time to **60 minutes**.

PART 3 - EXECUTION

3.1 CONCRETING

A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, **1/8 inch** for concrete exposed to view and Class C, **1/2 inch** for other concrete surfaces.

B. Place vapor retarder on prepared sub-grade, with joints lapped **6 inches and sealed.**

C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.

E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.

F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.

G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.

H. Slab Finishes: Comply with ACI 302.1R for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:

1. Scratch finish for surfaces to receive mortar setting beds.
2. Float finish for interior steps and ramps and surfaces to receive waterproofing, roofing, or other direct-applied material.
3. Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
4. Trowel and fine-broom finish for surfaces to receive thin-set tile.
5. Nonslip-broom finish to exterior concrete platforms, steps, and ramps.

I. Cure formed surfaces by moist curing for at least seven days.

J. Begin curing concrete slabs after finishing by one of the following methods: Keep concrete continuously moist for at least seven days, Apply membrane-forming curing compound to concrete, or Apply membrane-forming curing and sealing compound to concrete.

K. Developer/Contractor will engage a testing agency to perform field tests and to submit test reports.

L. Protect concrete from damage. Repair surface defects in formed concrete and slabs.

END OF SECTION 321350

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. If a fence or gate is damaged or does not function as intended replace to match existing or install new fence with the specifications outlined below.

B. If fencing is not consistent in type or style throughout, the Developer shall remove and replace with a type and style as approved by NSP Construction Management.

C. If the existing fence is damaged, but is within reasonable condition for repair, the Developer shall replace to match existing.

PART 2 - PRODUCTS

2.1 FENCE COMPONENTS, IF DAMAGED

A. Fabric: Metallic-coated steel, **2 inch to 2-1/4 inch mesh**, **0.113 inch diameter** wire with polymer coating if desired**.**

1. Polymer Coating: ASTM F 668, Class 2a or 2b.
2. Color: Match existing
3. Selvage: Knuckled at bottom and twisted at top. If less than **72”**, must be knuckled top and bottom.

B. Fabric: Aluminum, ASTM F 1183, **2 inch to 2-1/4 inch mesh, 0.148-inch diameter wire**.

1. Selvage: Knuckled at bottom and twisted at top. If less than **72”**, must be knuckled top and bottom.

C. Posts and Rails: Galvanized-steel pipe complying with ASTM F 1043 requirements for light industrial fence.

D. Fittings and Accessories: ASTM F 626**,** color coated to match fabric**,** and as follows:

1. Post and Line Caps: Provide weather tight cap for each post. Provide line post caps with loop to receive tension wire or top rail.
2. Post Brace Assembly: Same material as top rail with **3/8-inch diameter** rod and adjustable tightener.
3. Bottom and Center Rail: Same material as top rail with cap on each end.

E. Gate Posts, Swing Gates, and Accessories: ASTM F 900, same metal and finish as posts and rails, with galvanized hardware and accessories.

F. Privacy Slats: PVC, UV-light stabilized, not less than **0.023 inch thick**, sized to fit mesh specified for direction indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fence to comply with ASTM F 567.

B. Excavation: Drill post holes **8 inches** in diameter and **40 inches** in depth, equally spaced, but not more than **10 feet** apart.

C. Setting Posts: Set posts in holes approximately **4 inches** above bottom of excavation. Align posts vertically and align tops. Pour concrete footings with tops **2 inches** below grade.

END OF SECTION 323113

SECTION 323119 - DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. If a fence or gate is damaged or does not function as intended replace to match existing or install new fence with the specifications outlined below.

B. If fencing is not consistent in type or style throughout, the Developer shall remove and replace with a type and style as approved by NSP Construction Management.

C. If the existing fence is damaged, but is within reasonable condition for repair, the Developer shall replace to match existing.

PRODUCTS

1.2 DECORATIVE METALLIC-COATED STEEL TUBULAR PICKET FENCES

A. Decorative Metallic-Coated Steel Tubular Picket Fences: Comply with ASTM F 2408, for residential application (class) unless otherwise indicated.

B. Metallic-Coated Steel Sheet: Galvanized-steel sheet or aluminum-zinc alloy-coated steel sheet.

C. Post Caps: Hot-dip galvanized steel, UV-resistant plastic, or aluminum.

D. Pickets: Square tubes.

1. Terminate tops of pickets at top rail for flush top appearance or extend pickets beyond top rail as indicated and press flat and trim to produce spear point shape.

2. Picket Spacing: 6 inches clear, maximum.

E. Finish: Organic coating complying with requirements in ASTM F 2408 is preferred. However Powder coating may be used.

1.3 DECORATIVE ALUMINUM FENCES

A. Decorative Aluminum Fences: Fences made from aluminum extrusions.

a. See ATTACHED Master Halco specifications.

B. Posts: Square extruded tubes, **2 by 2 inches** wall thickness.

C. Post Caps: Aluminum castings.

D. Rails: Extruded-aluminum channels, **1 inch (0.055 inch wall thickness by 1 inch (0.082 wall thickness).**

E. Pickets: Extruded-aluminum tubes, **5/8 inch square**, with 0**.045-inch wall thickness**, terminated as indicated.

1. Picket Spacing: **3.792 inch face to face**.

F. Finish: Baked enamel or powder coating.

1.4 GATE POSTS

A. Square tubes**, 2 inch by 2 inch** with a wall thickness of **0.125 inch**.

B. Post Caps measure **2 inch by 2 inch** and flat aluminum.

C. Picket Size, Configuration, and Spacing: Comply with requirements for adjacent fence.

D. Finish: Baked enamel or powder coating.

PART 2 - EXECUTION

2.1 INSTALLATION

A. Install fences by setting posts as indicated and fastening rails and infill panels to posts. Peen threads of bolts after assembly to prevent removal.

B. Post Excavation: Excavate holes to a diameter of not less than four times post size and a depth of not less than **24 inches** plus **3 inches** for each foot or fraction of a foot that fence height exceeds **4 feet**.

C. Post Setting: Set posts in concrete or by mechanically driving into soil at indicated spacing into firm, undisturbed soil.

1. Posts Set in Concrete: Extend post to within 6 inches of specified excavation depth, but not closer than **3 inches** to bottom of concrete.
2. Mechanically Driven Posts: Drive into soil to depth of **30 inches**. Protect post top to prevent distortion.
3. Space posts uniformly at **6 feet o.c**.

D. Install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.

END OF SECTION 323119

MASTER HALCO®

A Tradition of Fencing Solutions

Colonial Aluminum®

Classically Styled Aluminum Fencing

Colonial ALUMINUM®

MASTER HALCO®

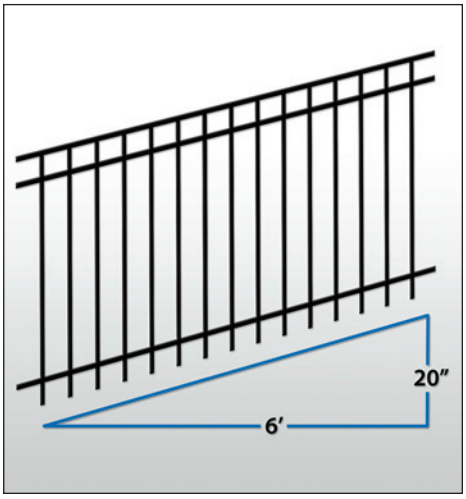
A Tradition of Fencing Solutions

About Colonial Aluminum® Fencing

Colonial Aluminum Fencing

Colonial Aluminum® fences offer a variety of design styles to customize the look of your property. All panels come in 6' rackable sections, which beautifully adjust to the contours of most landscapes. They also offer the beauty of a screwless design for that desired "good neighbor" look.

Colonial Aluminum fences are an attractive ornamental fence with the classic look of wrought iron, and the low maintenance of aluminum. The added benefit of a Lifetime Limited Warranty provides the peace of mind in knowing your investment will last for years to come.



Adjusts 20 inches over 6 feet

Features & Benefits

- Aluminum panels and posts that never develop red rust, cost less to maintain, and are ideal for poolside installations
- Easy rackability up to 20" over 6' for flexibility over uneven terrain
- Durable Polyester TGIC powder coating resists fading and scratches for a lasting look
- Architectural grade powder coating meets or exceeds AAMA 2603 specifications
- Screwless panels for a clean "good neighbor" look
- Gates have welded rails and pickets for added strength and durability
- Assembled sections for quick and easy installation
- Lifetime Limited Warranty
- Many styles available to suit your needs: Universal, Spear, Universal Spear, Picket, and Staggered Spear
- Made in the USA

Colonial ALUMINUM®

Powder Coating

MADE IN U.S.A

10 Step Powder Coating Process

Pre-treatment

All Colonial Aluminum® fences are given an 8-step pre-treatment process that cleans and prepares the aluminum to assure complete adhesion of the powder coating.

Step 1 Our raw premium grade aluminum is inspected to be free of blemishes and is not exposed to outdoor elements.

Step 2 Product enters heated acidic cleaner stage to remove extrusion and fabrication oils.

Step 3 Clean – City water rinse.

Step 4 Cleaner – Recycling reverse osmosis water rinse.

Step 5 Cleanest – Pure reverse osmosis water rinse. Final rinse is of the same quality as bottled drinking water. Clean water removes contaminates which will hinder coating performance.

Step 6 Primer/sealer conversion coating which provides a strong adhesion of coating to the aluminum.

Step 7 A 200 MPH air blast removes water drops from the pre-treated product.

Step 8 A convection oven completes the dry-off process for a clean dry surface to powder coat.

Powder Coating

Step 9 Powder application is automated. Compressed process air is dried to -35°F Dew Point for superior adhesion and aesthetics. The powder booth contains powder coating overspray with no emissions to the surrounding environment.

Step 10 The final step of the powder coating process is the cure oven where the powder coating gels and bonds to the aluminum.

Testing

Ten pre-treat system titration checks twice per shift maintain system parameters, and ten QC checks are completed every hour on product coming off the production line.

Automated Chemical Test – Pre-treatment chemicals are monitored and added automatically

System Titration Test – Ph levels are checked twice per shift as part of the pre-treatment titration testing

Cure Oven Temperature Test – Ensures proper curing of powder coating

Coating Thickness Test – Coating thickness is measured and plotted every hour

ASTM D3359 Crosshatch Test – Hourly crosshatch testing is done to test coating adhesion

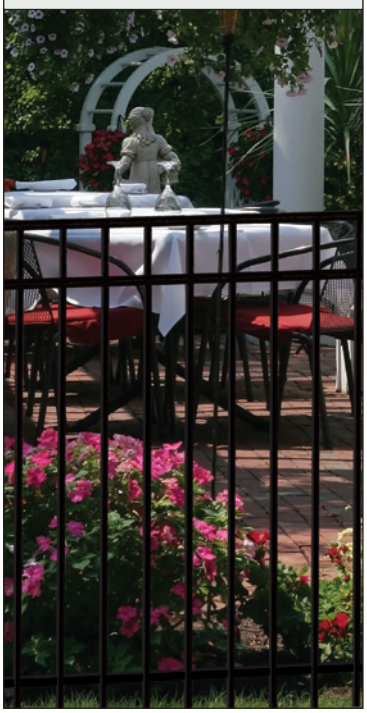
PCI#8 Solvent Cure Test – Solvent testing is completed every hour to test for complete cure

MASTER HALCO®

A Tradition of Fencing Solutions

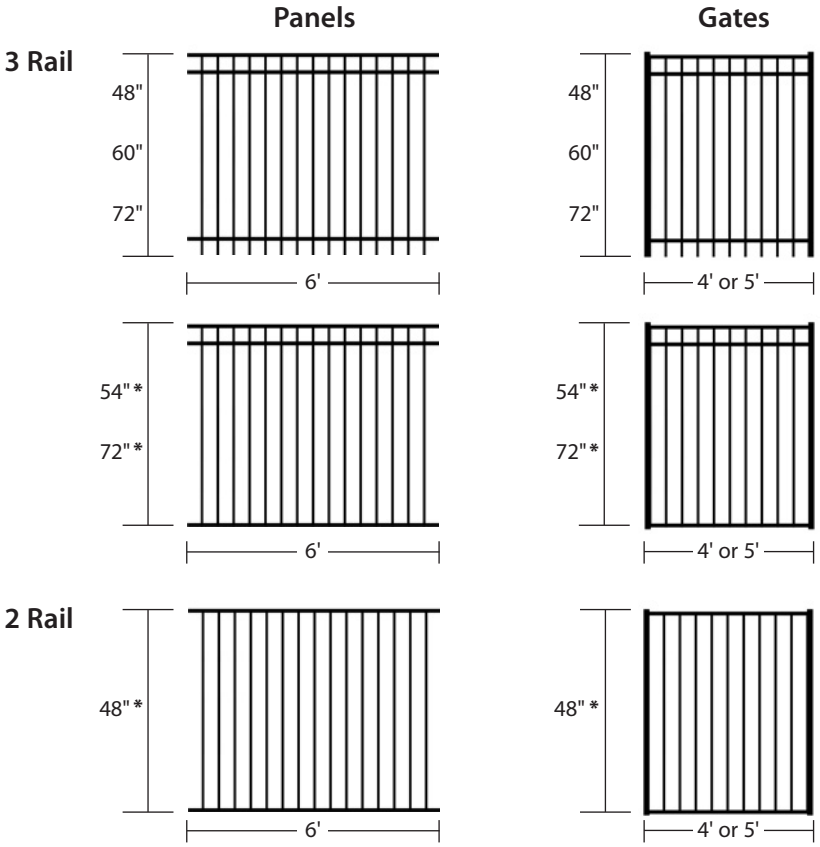
Panels & Gates

When you're searching for a great value in an elegant fence, Colonial Aluminum® provides you a wide variety of styles to choose from. Their lasting beauty and easy installation are combined with quality construction and outstanding durability.



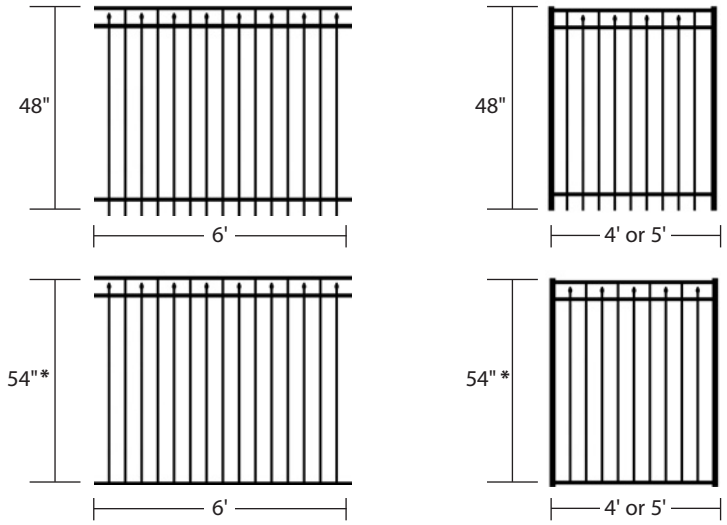
Universal

1" Rails & 5/8" Pickets



Universal Spear

1" Rails & 5/8" Pickets



Colonial ALUMINUM®

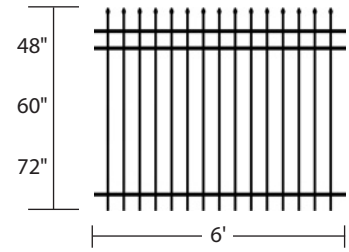
Panels & Gates

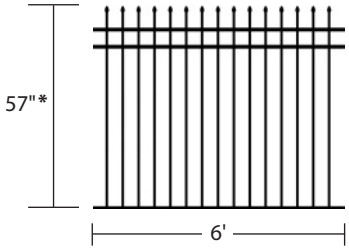
MADE IN U.S.A

Spear

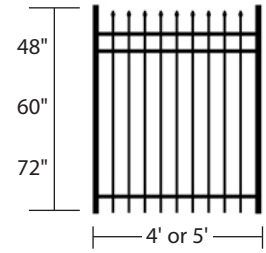
1" Rails & 5/8" Pickets

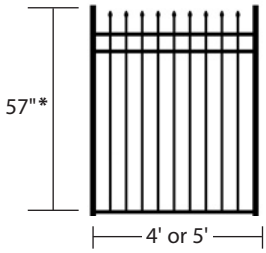
Panels





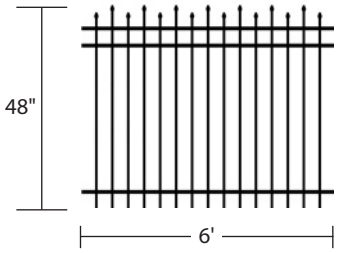
Gates

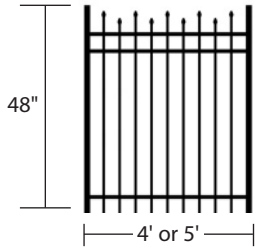




Staggered Spear

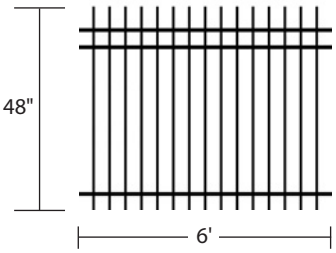
1" Rails & 5/8" Pickets

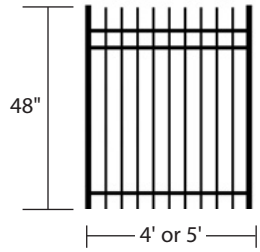




Picket

1" Rails & 5/8" Pickets with Aluminum Picket Plugs Pre-Installed





* Panel/Gate meets 1993 BOCA pool code. Check local pool enclosure codes for compliance.

Note: Other items and sizes may be available through our special order program. See your local Master Halco branch representative for availability and leadtime.

Colonial Aluminum® fencing surrounds your property with a secure structure that requires very little maintenance. Its lasting looks come with the peace of mind of a Lifetime Limited Warranty making Colonial Aluminum fencing an excellent choice.

MASTER HALCO®

A Tradition of Fencing Solutions

Accessories

Posts

Style	Length			
	78"	84"	90"	102"
Universal & Universal Spear	x		x	x
Universal Flat Bottom	x	x		x
Spear & Staggered Spear	x		x	x
Picket	x		x	x
Blank (.06 and .125)	x	x	x	x

Post Caps

2" Flat Cap

2" Ball Cap

Specifications

1.1 SCOPE: This specification covers materials and construction requirements for Colonial Aluminum® Fence.

1.2 MATERIALS:

A. PICKETS: 5/8" x 5/8" square, .045" wall thickness, 6063 T52 aluminum tubular members, having an ultimate tensile strength of at least 26,000 psi (152 MPa) and yield strength of at least 20,000 psi (110 MPa). Space pickets 3.792" face to face.

B. RAILS: 1" W (.055 wall thickness) x 1" H (.082 wall thickness), 6063 T6 aluminum "U" channel, having an ultimate tensile strength of at least 30,000 psi (207 MPa) and yield strength of at least 25,000 psi (172 MPa).

C. POSTS: 2" x 2" square, .060" wall thickness, 6063 T6 aluminum tubular members, having an ultimate tensile strength of at least 30,000 psi (207 MPa) and yield strength of at least 25,000 psi (172 MPa).

D. GATE POSTS: 2" x 2" square, .125" wall thickness, 6063 T6 aluminum tubular members, having an ultimate tensile strength of at least 30,000 psi (207 MPa) and yield strength of at least 25,000 psi (172 MPa).

E. POST CAPS: 2" x 2", flat, aluminum die cast. 2" x 2", ball, aluminum die cast.

1.3 ASSEMBLY:

A. All panels are pre-assembled with nylon screwless fasteners.

B. Rails are notched for screwless installation.

1.4 COATING:

Colonial Aluminum fencing utilizes polyester powder coating that will meet or exceed AAMA 2603-03 specifications. All fence sections and components are given an 8-step pre-treatment process that cleans and prepares the aluminum to assure complete adhesion of the powder coating.

Step 1 - Raw aluminum is inspected to be free of blemishes and is not exposed to outdoor elements.

Step 2 - Product enters heated acidic cleaner stage to remove extrusion and fabrication oils.

Step 3 - City water rinse.

Step 4 - Recycling reverse osmosis water rinse.

Step 5 - Pure reverse osmosis water rinse. Final rinse is of the same quality as bottled drinking water. Clean water removes contaminates which will hinder coating performance.

Step 6 - Primer/sealer conversion coating, which provides a strong adhesion of coating to the aluminum.

Step 7 - A 200 MPH air blast removes water drops from the pre-treated product.

Step 8 - A convection oven completes the dry-off process for a clean dry surface to powder coat.

Powder application is automated. Compressed process air is dried to -35°F Dew Point for superior adhesion and aesthetics. The powder booth contains powder coating overspray with no emissions to the surrounding environment.

The final step of the powder coating process is the cure oven where the powder coating gels and bonds to the aluminum.

COLOR- Black.

1.5 WARRANTY:

Provide Master Halco's lifetime limited warranty that its ornamental fence system is free from defects in material or workmanship including cracking, peeling, blistering and rust. The Lifetime Limited Warranty applies only to living entities. Non-living entities shall include but not be limited to governments, municipalities, corporations, and commercial operations. All non-living entities shall receive a 30-year limited warranty from the date of purchase. This Limited Warranty applies only to systems constructed entirely of components manufactured and/or supplied by Master Halco.

Heritage & Commitment

Master Halco is the master of security, innovation and style. As North America's leading manufacturer and wholesale distributor of fencing systems, we are the provider of choice for thousands of professional fence and security contractors and quality building material retailers. Since 1961, we have been the industry's premier fencing provider.

Full Fencing Solutions

Master Halco distributes a broad range of fencing solutions for commercial and residential applications, including:

- Chain-link
- Ornamental fence (steel & aluminum)
- Welded wire
- Wood
- PVC
- Composite

For more information about Master Halco products and services, call **1.888.MH.FENCE** toll-free or visit us online at **www.masterhalco.com.**

MASTER HALCO®

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Orange, CA 92868

MasterHalco.com
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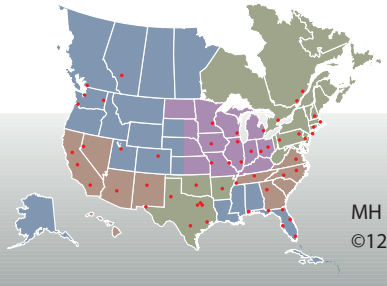
Branch service centers are located throughout North America.



MH 046025

SECTION 323223 - SEGMENTAL RETAINING WALL

PART 1: GENERAL

1.01 Description

A. Work includes furnishing and installing segmental retaining wall (SRW) units to the lines and grades designated on the project's final construction drawings or as directed by the Architect/Engineer. Also included is furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 Reference Standards

A. Segmental Retaining Wall Units

1. **ASTM C 1372 -** Standard Specification for Segmental Retaining Wall Units
2. **ASTM C 140 -** Standard Test Methods of Sampling and Testing Concrete Masonry Units

B. Geosynthetic Reinforcement

1. **ASTM D 4595 -** Tensile Properties of Geotextiles by the Wide-Width Strip Method
2. **ASTM D 5262 -** Test Method for Evaluating the Unconfined Creep Behavior of Geosynthetics
3. **GRI:GG1** – Single-Rib Geogrid Tensile Strength
4. **GRI:GG5 -** Geogrid Pullout

C. Soils

1. **ASTM D 698 -** Moisture Density Relationship for Soils, Standard Method
2. **ASTM D 422 -** Gradation of Soils
3. **ASTM D 424 -** Atterberg Limits of Soil

D. Drainage Pipe

1. **ASTM D 3034 -** Specification for Polyvinyl Chloride (PVC) Plastic Pipe
2. **ASTM D 1248 -** Specification for Corrugated Plastic Pipe

E. Engineering Design

1. "NCMA Design Manual for Segmental Retaining Walls," Second Edition

F. Where specifications and reference documents conflict, the Architect/Engineer shall make the final determination of applicable document.

1.03 Submittals

A. Materials Submittals: The Contractor shall submit manufacturers' certifications two weeks prior to start of work stating that the SRW units and geosynthetic reinforcement meet the requirements of Section 2 of this specification.

B. Design Submittal: The Contractor shall submit two sets of detailed design calculations and final

retaining wall plans for approval at least two weeks prior to the beginning of wall construction. All calculations and drawings shall be prepared and sealed by a professional Civil Engineer (P.E.) – (Wall Design Engineer) experienced in SRW design and licensed in the state where the wall is to be built.

1.04 Delivery, Storage and Handling

A. Contractor shall check materials upon delivery to assure that specified type and grade of materials have been received and proper color and texture of SRW units have been received.

B. Contractor shall prevent excessive mud, wet concrete, epoxies and like materials that may affix themselves from coming in contact with materials.

C. Contractor shall store and handle materials in accordance with manufacturer's recommendations.

D. Contractor shall protect materials from damage. Damaged materials shall not be incorporated into the retaining wall.

PART 2: MATERIALS

2.01 Segmental Retaining Wall Units

A. SRW units shall be machine formed, Portland cement concrete blocks specifically designed for retaining wall applications. SRW units currently approved for this project are:

<u>VERSA-LOK Retaining Wall Units.</u>

B. Finish of SRW units shall be split-face.

C. SRW unit faces shall be of straight geometry.

D. SRW unit height shall be 6 inches.

E. SRW units (not including aggregate fill in unit voids) shall provide a minimum weight of 105 psf wall face area.

F. SRW units shall be solid through the full depth of the unit.

G. SRW units shall have a depth (front face to rear) to height ratio of 2:1, minimum.

I. SRW units shall be interlocked with connection pins, designed with proper setback to provide 8:1 vertical-to-horizontal batter (a 7-degree cant from vertical).

J. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8 inch.

K. SRW units shall be capable of providing overlap of units on each successive course so that walls meeting at corner are interlocked and continuous. SRW units that require corners to be mitered shall not be allowed.

L. SRW units shall be capable of providing a split-face, textured surface for all vertical surfaces that will be exposed after completion of wall, including any exposed sides and backs of units.

M. SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Cracking or excessive chipping may be grounds for rejection. Units showing cracks longer than ½ inch shall not be used within the wall. Units showing chips visible at a distance of 30 feet from the wall shall not be used within the wall.

N. Concrete used to manufacture SRW units shall have a minimum 28 days compressive strength of 3,000 psi and a maximum moisture absorption rate, by weight, of 8% as determined in accordance with ASTM C1372. Compressive strength test specimens shall conform to the saw-cut coupon provisions of ASTM C140.

O. SRW units' molded dimensions shall not differ more than ± 1/8 inch from that specified, in accordance with ASTM C1372.

2.02 Segmental Retaining Wall Unit Connection Pins

A. SRW units shall be interlocked with VERSA-Tuff connection pins. The pins shall consist of glass-reinforced nylon made for the expressed use with the SRW units supplied.

2.03 Geosynthetic Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids or geotextiles manufactured as a soil reinforcement element. The manufacturers/suppliers of the geosynthetic reinforcement shall have demonstrated construction of similar size and types of segmental retaining walls on previous projects.

The geosynthetic type must be approved one week prior to bid opening. Geosynthetic types currently approved for this project are:

VERSA-Grid Geogrids

B. The type, strength and placement location of the reinforcing geosynthetic shall be as determined by the Wall Design Engineer, as shown on the final, P.E.-sealed retaining wall plans.

2.04 Leveling Pad

A. Material for leveling pad shall consist of compacted sand, gravel, or combination thereof (USCS soil types GP,GW, SP, & SW) and shall be a minimum of 6 inches in depth. Lean concrete with a strength of 200-300 psi and 3 inches thick maximum may also be used as a leveling pad material. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.

2.05 Drainage Aggregate

A. Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D422

Sieve Size	Percent Passing
1 inch	100
3/4 inch	75-100

No. 4	0-60
No. 40	0-50
No. 200	0-5

2.06 Drainage Pipe

A. The drainage collection pipe shall be a perforated or slotted PVC, or corrugated HDPE pipe. The drainage pipe may be wrapped with a geotextile to function as a filter.

B. Drainage pipe shall be manufactured in accordance with ASTM D 3034 and/or ASTM D 1248.

2.07 Reinforced (Infill) Soil

A. The reinforced soil material shall be free of debris. Unless otherwise noted on the final, P.E.-sealed, retaining wall plans prepared by the Wall Design Engineer, the reinforced material shall consist of the inorganic USCS soil types GP, GW, SW, SP, SM, meeting the following gradation, as determined in accordance with ASTM D422:

Sieve Size	Percent Passing
4 inch	100
No. 4	20-100
No. 40	0-60
No. 200	0-35

B. The maximum particle size of poorly-graded gravels (GP) (no fines) should not exceed 3/4 inch unless expressly approved by the Wall Design Engineer and the long-term design strength (LTDS) of the geosynthetic is reduced to account for additional installation damage from particles larger than this maximum.

C. The plasticity of the fine fraction shall be less than 20.

PART 3: DESIGN PARAMETERS

3.01 Design

A. The design analysis for the final, P.E.-sealed retaining wall plans prepared by the Wall Design Engineer shall consider the external stability against sliding and overturning, internal stability and facial stability of the reinforced soil mass and shall be in accordance with acceptable engineering practice and these specifications. The internal and external stability analysis shall be performed in accordance with the “NCMA Design Manual for Segmental Retaining Walls,” using the recommended minimum factors of safety in this manual.

B. External stability analysis for bearing capacity, global stability, and total and differential settlement shall be the responsibility of the Owner and the Owner's Geotechnical Engineer. Geotechnical Engineer shall perform bearing capacity, settlement estimates, and global stability analysis based on the final wall design provided by the Wall Design Engineer and coordinate any

required changes with Wall Design Engineer.

C. While vertical spacing between geogrid layers may vary, it shall not exceed 2.0 feet maximum in the wall design.

D. The geosynthetic placement in the wall design shall have 100% continuous coverage parallel to the wall face. Gapping between horizontally adjacent layers of geosynthetic (partial coverage) will not be allowed.

PART 4: CONSTRUCTION

4.01 Inspection

A. The Owner or Owner's Representative is responsible for verifying that the Contractor meets all the requirements of the specification. This includes all submittals for materials and design, qualifications, and proper installation of wall system.

B. Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.

4.02 Excavation

A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material, or as directed by the Engineer/Architect, at the Contractor's expense.

B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support, if required, is the responsibility of the Contractor.

4.03 Foundation Preparation

A. Following the excavation, the foundation soil shall be examined by the Owner's Engineer to assure actual foundation soil strength meets or exceeds the assumed design bearing strength. Soils not meeting the required strength shall be removed and replaced with infill soils, as directed by the Owner's Engineer.

B. Foundation soil shall be proof-rolled and compacted to 95% standard Proctor density and inspected by the Owner's Engineer prior to placement of leveling pad materials.

4.04 Leveling Pad Construction

A. Leveling pad shall be placed as shown on the final, P.E.-sealed retaining wall plans with a minimum thickness of 6 inches. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.

B. Granular leveling pad material shall be compacted to provide a firm, level bearing surface on which to place the first course of units. Well-graded sand can be used to smooth the top 1/4 inch to 1/2 inch of the leveling pad. Compaction will be with mechanical plate compactors to achieve 95% of maximum standard Proctor density (ASTM D 698).

4.05 SRW Unit Installation

A. All SRW units shall be installed at the proper elevation and orientation as shown on the final, P.E.-sealed wall plans and details or as directed by the Wall Design Engineer. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The specifications and drawings shall govern in any conflict between the two requirements.

B. First course of SRW units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The first course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a string line or offset from base line to the back of the units.

C. All excess debris shall be cleaned from top of units and the next course of units installed on top of the units below.

D. Two VERSA-Tuff connection pins shall be inserted through the pin holes of each upper-course unit into receiving slots in lower-course units. Pins shall be fully seated in the pin slot below. Units shall be pushed forward to remove any looseness in the unit-to-unit connection.

E. Prior to placement of next course, the level and alignment of the units shall be checked and corrected where needed.

F. Layout of curves and corners shall be installed in accordance with the wall plan details or in general accordance with SRW manufacturer’s installation guidelines. Walls meeting at corners shall be interlocked by overlapping successive courses.

G. Procedures C. through F. shall be repeated until reaching top of wall units, just below the height of the cap units. Geosynthetic reinforcement, drainage materials, and reinforced backfill shall be placed in sequence with unit installation as described in Section 4.06, 4.07 and 4.08.

4.06 Geosynthetic Reinforcement Placement

A. All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the final P.E.-sealed retaining wall plan profiles and details, or as directed by the Wall Design Engineer.

B. At the elevations shown on the final plans, (after the units, drainage material and backfill have been placed to this elevation) the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units, to within 1 inch of the front face of the unit below. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer’s recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer’s recommendations. The highest-strength direction of the geosynthetic must be perpendicular to the wall face.

C. Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Splicing of the geosynthetic in the design-strength direction (perpendicular to the wall face) shall not be permitted. Along the length of the wall, horizontally adjacent sections of

geosynthetic reinforcement shall be butted in a manner to assure 100% coverage parallel to the wall face.

D. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).

E. The geosynthetic reinforcement shall be free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes or by hand tensioning until reinforcement is covered by 6 inches of fill.

4.07 Drainage Materials

A. Drainage aggregate shall be installed to the line, grades and sections shown on the final P.E.-sealed retaining wall plans. Drainage aggregate shall be placed to the minimum thickness shown on the construction plans between and behind units (a minimum of 1 cubic foot for each exposed square foot of wall face unless otherwise noted on the final wall plans).

B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced-soil zone. The drainage collection pipe shall daylight into a storm sewer or along a slope, at an elevation lower than the lowest point of the pipe within the aggregate drain.

4.08 Backfill Placement

A. The reinforced backfill shall be placed as shown in the final wall plans in the maximum compacted lift thickness of 10 inches and shall be compacted to a minimum of 95% of standard Proctor density (ASTM D 698) at a moisture content within 2% of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units.

B. Only hand-operated compaction equipment shall be allowed within 3 feet of the back of the wall units. Compaction within the 3 feet behind the wall units shall be achieved by at least three passes of a lightweight mechanical tamper, plate, or roller.

C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing and reinforced backfill to direct water runoff away from the wall face.

D. At completion of wall construction, backfill shall be placed level with final top of wall elevation. If final grading, paving, landscaping and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary grading and drainage shall be provided to ensure water runoff is not directed at the wall nor allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.

4.09 SRW Caps

A. SRW caps shall be properly aligned and glued to underlying units with VERSA-LOK adhesive, a flexible, high-strength concrete adhesive. Rigid adhesive or mortar are not acceptable.

B. Caps shall overhang the top course of units by 3/4 inch to 1 inch. Slight variation in overhang is allowed to correct alignment at the top of the wall.

4.10 Construction Adjacent to Completed Wall

A. The Owner or Owner's Representative is responsible for ensuring that construction by others adjacent to the wall does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of 3 feet behind the back of the wall face. Equipment with wheel loads in excess of 150 psf live load shall not be operated within 10 feet of the face of the retaining wall during construction adjacent to the wall. Care should be taken by the General Contractor to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.

END OF SECTION 323223

NEIGHBORHOOD STABILIZATION PROGRAM

Standard

Our original, most popular unit. Contractors, engineers and landscape architects agree its solid construction and unique pinning system provide an endless array of design options, hardcore durability and the fastest, easiest installation available. Also available in an increasingly-popular Weathered option at selected dealers.

VERSA-LOK® Standard with the Weathered™ option

Standard Unit Measurements:

Height:	6" (152.4mm)
Width (face):	16" (406.4mm)
Width (rear):	14" (355.6mm)
Depth:	12" (304.8mm)
Face area:	2/3 sq. ft. (.062 sq m)
Weight:	82 lbs. (37.19kg)
Weight/Face Area:	123 lbs./sq. ft (599.84kg/sq m)

Cobble

VERSA-LOK® Cobble® with the Weathered™ option

About half the size of the Standard unit, Cobble units are perfect for planters, small walls and garden-variety projects as well as large, expansive commercial and governmental walls. Smaller and conveniently lighter than its big brother Standard unit, a Cobble unit possesses durable characteristics equal to units twice its weight. Of course, Cobble units use the same top-down pinning systems as other VERSA-LOK units, saving you time and installation costs.

Cobble Unit Measurements:	
Height:	6" (152.4mm)
Width (face):	8" (203.2mm)
Width (rear):	6" (152.4mm)
Depth:	12" (304.8mm)
Face area:	1/3 sq. ft. (.031 sq m)
Weight:	38 lbs. (17.24kg)
Weight/Face Area:	114 lbs/sq ft. (556.13 kg/sq m)

SECTION 328400 - PLANTING IRRIGATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. If there is an existing Irrigation system, test and repair if needed.

B. Automatic irrigation systems are not permitted. However, Contractor shall be responsible for the survival of the plants and shrubs while under contract in accordance with the General Conditions.

C. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for further requirements.

D. Minimum System Pressure Rating 60 psi

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Pipe Materials: PE, ASTM F 771; PE 3408 compound; SIDR 15.

1. Insert Fittings: ASTM D 2609, nylon or propylene plastic.

B. Pipe Materials: PVC pipe, ASTM D 2241, PVC 1120, SDR 26.

1. Fittings: PVC plastic pipe fittings, ASTM D 2467, Schedule 80, socket type with ASTM F 656 primer and ASTM D 2564 solvent cement.

C. Curb Valves: Bronze body, ground-key plug or ball with wide tee head.

1. Curb-Valve Casing: Similar to AWWA M44 for cast-iron valve casings.

D. Plastic Ball Valves: MSS SP-122, PVC.

E. Bronze Gate Valves: Solid wedge; non-rising bronze stem; Class 125 bronze body and screw-in bonnet and malleable-iron, bronze, or aluminum hand-wheel.

F. Manual Control Valves: Globe valves fitted for key operation.

G. Automatic Control Valves: plastic diaphragm-type, normally closed, with manual flow adjustment, and operated by 24-V ac solenoid.

H. Automatic Drain Valves: Spring-loaded-ball type of corrosion-resistant construction and designed to open for drainage if line pressure drops below 2-1/2 to 3 psig.

I. Anti-siphon, Pressure-Type Vacuum Breakers: Spring-loaded check valve.

J. Pressure Regulators: Single-seated, direct-operated type with integral Y-pattern strainer.

K. Quick-Couplers: Two-piece assembly, with coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.

L. Sprinklers: Plastic housing; flush, surface, fixed pattern, with screw-type flow adjustment.

M. Bubblers: Fixed pattern, with screw-type flow adjustment.

1. Shrubbery: Fixed pattern, with screw-type flow adjustment.
2. Pop-up, Spray: Fixed pattern, with screw-type flow adjustment and stainless-steel spring.
3. Pop-up, Rotary Spray: Gear drive, full-circle and adjustable part-circle type.
4. Pop-up, Rotary Impact: Impact drive, full circle and part circle as indicated.
5. Aboveground, Rotary Impact: Impact drive, full circle and part circle as indicated.

N. Emitters: Plastic body with single outlet, to deliver flow at approximately 1 gph.

O. Automatic Control System: Low-voltage system made for control of irrigation-system automatic control valves. Controller operates on 120-V ac; provides 24-V ac power to control valves.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install components having pressure rating equal to or greater than system operating pressure.

B. Lay piping on solid sub-base, uniformly sloped without humps or depressions. Slope circuit piping down toward drain valve a minimum of 0.4 percent.

C. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone to 12 inches below grade. Cover with asphalt-saturated felt and excavated material.

D. Minimum Cover: Provide the following minimum cover over top of buried piping:

1. Pressure Piping: 24 inches below frost depth, whichever is greater
2. Circuit Piping: 12 inches
3. Drain Piping: 12 inches
4. Sleeves: 24 inches

E. Install water meters in meter boxes with shutoff valve on meter inlet. Include valve on meter outlet and valve bypass around meter.

F. Install pressure regulators with shutoff valve and strainer on inlet and pressure gage on outlet. Install shutoff valve on outlet and valve bypass.

G. Sprinklers: Flush circuit piping with full head of water and install sprinklers after hydrostatic test is completed.

END OF SECTION 328400

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SECTION REQUIRMENTS

A. The contractor shall fill or grade around the structure and/or building to provide proper drainage of all water from the structure to prevent any standing water.

B. Design the landscape following the Waterwise program and the principles of Xeriscape.

C. See NSP Green Building Practices Handbook, Section 1.3 – Invasive Species and Section 1.4 – Planting Design for further requirements.

1.2 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Certification of grass seed.

1. Certification of each seed mixture for turfgrass sod.

C. Product certificates.

1.4 QUALITY ASSURANCE

A. Installer's shall be familiar and experienced in the practice of preparing, installing, maintaining and establishment of sod.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Sod: Harvest, deliver, store, and handle sod according to requirements in TPI's "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

1.6 MAINTENANCE SERVICE

A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established and accepted, but for not less than the following periods:

1. Sodded Lawns: The date of Final Acceptance.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

A. Turfgrass Sod: Certifie**,** including limitations on thatch, weeds, diseases, nematodes, and insects], complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.

B. Turfgrass Species: Paspalum notatum ‘argentine’ (Argentine Bahia Sod)

2.2 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, free of stones 1 inch (25 mm) or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

a. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources.

PART 3 - EXECUTION

3.1 LAWN PREPARATION

A. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches (100 mm). Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

B. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.

a. Loosen surface soil to a depth of at least 4 inches (100 mm).

2. Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, trash, and other extraneous matter.
3. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

E. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

3.2 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle of slopes exceeding 1:3.

2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38 mm) below sod.

3.3 LAWN MAINTENANCE

A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.

B. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding [**90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm**).

B. Satisfactory Sodded Lawn: At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, open joints, bare areas, and surface irregularities.

C. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

END OF SECTION 329200

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. The front foundation facing the street shall contain enough three (3) gallon shrubs to effectively screen from view.

B. See NSP Green Building Practices Handbook, Section 1.3 – Invasive Species and Section 1.4 – Planting Design for further requirements.

C. Design the Landscape following the Waterwise program principles of Xeriscape.

D. No automatic irrigation system. Hand water only as needed.

E. Remove invasive plant species that will impact native habitats. The effects of these species include increased water demand, reduction of biodiversity and depletion of native soil ecosystem.

1. Remove all existing invasive exotic plants listed on the Florida Exotic Pest Council Category 1 list.
2. Do not lant any plants listed on the Florida Exotic Pest Council Category 1 list.

F. Section Includes:

1. Trees.
2. Shrubs.
3. Ground cover.
4. Plants.

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product certificates.

1.4 QUALITY ASSURANCE

A. Installer's shall be familiar and experienced in the practice of preparing, installing, maintaining and establishment of plant materials.

B. Provide quality, size, genus, species, and variety of exterior plants installed, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery and handling.

B. Handle planting stock by root ball.

C. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants and trees in shade, protect from weather and mechanical damage, and keep roots moist.

1.6 WARRANTY

A. Special Warranty: Installer's standard form in which Installer agrees to repair or replace plantings that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, abuse by Owner, or incidents that are beyond Contractor's control.
b. Structural failures including plantings falling or blowing over.

2. Warranty Periods from Date of Substantial Completion:

a. Trees and Shrubs: One year.
b. Ground Cover and Plants: Six months.

1.7 MAINTENANCE SERVICE

A. Initial Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below.

1. Maintenance Period for Trees and Shrubs: 30 days months from date of Final Completion

2. Maintenance Period for Ground Covers and Plants30 days months from date of Final Completion

PART 2 - PRODUCTS

2.1 TREE AND SHRUB MATERIAL

A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1 and be Florida Number 1 or better, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1Retain one or more of five options in first paragraph below or delete paragraph and indicate requirements for each type of tree or shrub on Drawings.

C. Provide Container Grown trees.

2.2 GROUND COVER PLANTS

A. Ground Cover: Provide ground cover of species indicated, established and well rooted in pots or similar containers, and complying with ANSI Z60.1 and be Florida Number 1 or better

2.3 PLANTS

A. Shrubs: Provide healthy, field-grown plants from a commercial nursery, of species and variety shown or listed, complying with requirements in ANSI Z60.1 and be Florida Number 1 or better.

2.4 TOPSOIL

A. Topsoil: See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for requirements.

2.5 INORGANIC SOIL AMENDMENTS

A. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for requirements.

2.6 ORGANIC SOIL AMENDMENTS

A. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for requirements.

2.7 FERTILIZER

A. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for requirements.

2.8 MULCHES

A. Organic Mulch: Pine Straw, Pine Bark, Mini-nuggets are acceptable. Cypress Mulch is prohibited.

2.9 PLANTING SOIL MIX

A. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for requirements.

PART 3 - EXECUTION

3.1 PLANTING BED ESTABLISHMENT

A. Loosen subgrade of planting beds to a minimum depth of **8 inches (200 mm)**. Remove stones larger than **1 inch (25 mm)** in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

B. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

C. See NSP Green Building Practices Handbook, Section 1.4 – Planting Design for additional requirements.

3.2 TREES AND SHRUBS

A. Excavation of Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.

1. Excavate approximately two times as wide as ball diameter.
2. Excavate at least 12 inches (300 mm) wider than root spread and deep enough to accommodate vertical roots for bare-root stock.

B. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1.

C. Stock with Root Balls: Set trees and shrubs plumb and in center of pit or trench with top of root ball 1 inch (25 mm) above adjacent finish grades.
   1. Container Grown: Carefully remove root ball from container without damaging root ball or plant.
   2. Place planting soil mix around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.

3.3 TREE AND SHRUB PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees and shrubs according to standard horticultural practice. Prune trees to retain required height and spread. Do not cut tree leaders; remove only injured or dead branches from flowering trees. Prune shrubs to retain natural character.

3.4 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and as indicated in the spacing criteria in the NSP Green Building Practices Handbook, Section 1.4.

B. Dig holes large enough to allow spreading of roots and backfill with planting soil.

C. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

D. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

E. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.5 PLANTING BED MULCHING

A. Mulch backfilled surfaces of planting beds and other areas as indicated in the NSP Green Building Practices Handbook, Section 1.4.

B. Organic Mulch: Apply as indicated in the in the NSP Green Building Practices Handbook, Section 1.4 average thickness of mulch, and finish level with adjacent finish grades. Do not place mulch against plant stems.

3.6 PLANT MAINTENANCE

A. Tree and Shrub Maintenance: Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, and resetting to proper grades or vertical position, as

required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

B. Ground Cover and Plant Maintenance: Maintain and establish plantings by watering, weeding, fertilizing, mulching, and other operations as required to establish healthy, viable plantings.

C. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

END OF SECTION 329300

SECTION 332100 - WATER SUPPLY WELLS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. IRRIGATION PUMP - shall be Sta-rite, or approved equal, centrifugal pump. The pump shall match the existing type found on the property, either a deep well jet, shallow well jet, or submersible. The pump shall have a minimum ½ HP motor mounted integrally with the pump. The pump shall be designed to deliver 25 GPM at 40 PSI. The electrical characteristics required to feed the pump shall be modified where required to deliver single phase power at 115V to the pump housing.

B. All homes shall be serviced by city water where available.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with AWWA A100.

PART 2 - PRODUCTS

2.1 WELL CASINGS

A. Steel Casing: AWWA C200, single ply, steel pipe with threaded ends and threaded couplings for threaded joints.

B. PVC Casing: ASTM F 480 and NSF 14, PVC Schedule 80 bell-and-spigot pipe and couplings for solvent-cemented joints. Include NSF listing mark "NSF wc."

C. Pit-less Adapter: Fitting, of shape required to fit onto casing, with waterproof seals.

D. Pit-less Unit: Factory-assembled equipment that includes pitless adapter.

E. Well Seals: Casing cap, with holes for piping and cables that fits into top of casing and is removable, waterproof, and vermin proof.

F. Well Screens: Screen fabricated of ASTM A 666, Type 304 stainless-steel tube, with slotted or perforated surface and designed for well-screen applications.

2.2 WELL PUMP

A. Jet Well Pump: Deep well design, jet well pump; self-priming; centrifugal pump capable of continuous operation.

B. Submersible Pump: Submersible-type, vertical-turbine well pump complying with HI 2.1-2.2 and HI 2.3.

C. Water Piping: ASTM D 2239, SIDR Numbers 5.3, 7, or 9 PE pipe; made with PE compound number required to give pressure rating not less than 160 psig or 200 psig Include NSF listing mark "NSF pw."

D. Pressure Tanks: Pre-charged butyl rubber diaphragm, steel shell, fused polymeric lining, 100-psig working pressure.

1. Insert Fittings for PE Pipe: ASTM D 2609, made of PA, PP, or PVC with serrated, male insert ends matching inside of pipe. Include bands or crimp rings.

E. Capacities and Characteristics:

1. Submersible Pumps:

a. Minimum Capacity: 25 gpm at 40 psi, unless requirements demand larger.
b. Motor size: ½ hp unless requirements demand larger.

2. Jet Pump:

a. Minimum Capacity: 25 gpm at 40 psi, unless requirements demand larger.
b. Motor size: ½ hp unless requirements demand larger.
c. Depth to: 80 feet or as required

3. Compression Tank Capacity: 10 gal minimum

PART 3 - EXECUTION

3.1 INSTALLATION

A. Construct well and install permanent casing, screen, and grout. Set casing and liners round, plumb, and true to line.

B. Take samples of substrata formation at 10-foot intervals and at changes in formation throughout entire depth of each well. Preserve samples on-site in glass jars properly labeled for identification.

C. Prepare reports on static level of ground water, level of water for various pumping rates, and depth to water-bearing strata.

D. Install permanent casing with temporary well cap. Install with top of casing 36 inches above existing grade.

E. Develop wells to maximum yield per foot of drawdown. Extract maximum practical quantity of sand, drill fluid, and other fine materials from water-bearing formation.

F. Install jet well pumps with ejector in or attached to pump housing. Place check valve on suction line.

G. Install jet well pumps and pressure and suction lines. Install ejector where pressure and suction lines connect above well screen. Install check valve in suction line, or install foot valve below ejector.

H. Install submersible well pumps according to HI 2.1-2.4.

I. Test and disinfect wells according to AWWA A100, AWWA C654, and authorities having jurisdiction.

END OF SECTION 332100

SECTION 334100 - STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Coordination Drawings showing piping profiles and elevations at a horizontal scale of 1 inch equals 50 feet and a vertical scale of 1 inch equals 5 feet. Indicate underground structures and show pipe types, sizes, and materials and elevations of other utilities crossing system piping.

B. The Contractor shall fill or grade around the structure(s) and/or building(s) to provide proper drainage of all water from the structure(s) to prevent any standing water and any adverse affect to adjacent properties.

C. If drainage swales are present, Contractor shall insure that they are functioning properly and re-grade as needed.

D. See NSP Green Building Practices Handbook, Section 1.1 – Erosion Control Measures for further requirements.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

A. Hub-and-Spigot, Cast-Iron Soil Pipe and Fittings: ASTM A 74 Service class, gray iron, for gasketed joints. Include ASTM C 564 rubber, compression-type gaskets.

B. Corrugated-Steel Pipe and Fittings: ASTM A 760/A 760M, Type I with fittings of similar form and construction as pipe.

1. Standard-Joint Bands: Corrugated steel.
2. Coating: Aluminum or Zinc as required and conforming to the requirements of ASTM.

C. Corrugated PE Drainage Tubing and Fittings: AASHTO M 252, Type S, with smooth waterway for coupling joints.

1. Soil-tight Couplings: AASHTO M 252, corrugated, matching tube and fittings to form soil-tight joints.

D. Corrugated PE Pipe and Fittings: AASHTO M 294, Type S, with smooth waterway for coupling joints.

1. Soil-tight Couplings: AASHTO M 294, corrugated, matching pipe and fittings to form soil-tight joints.

E. PVC Type PSM Sewer Pipe and Fittings, ASTM D 3034, SDR 35, for gasketed joints. Include ASTM F 477 elastomeric-seal gaskets.

F. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76. Bell-and-spigot or tongue-and-groove ends with ASTM C 443 rubber gaskets.

G. Special Pipe Couplings and Fittings: Rubber or elastomeric sleeve and band assembly fabricated to match OD of pipes to be joined, for non-pressure joints.

H. Gray-Iron Area Drains: ASME A112.21.1M, round, gray-iron body with anchor flange and round, secured, gray-iron grate. Include bottom outlet with inside calk or spigot connection, of sizes indicated. Use units with heavy-duty top-loading classification in vehicle-traffic service areas and medium-duty in paved foot-traffic areas.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream.

B. Install piping pitched at minimum slope of 1 percent and 36-inch minimum cover unless otherwise indicated.

C. Install hub-and-spigot, cast-iron soil pipe and fittings with rubber gaskets according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Volume I. Use gaskets that match class of pipe and fittings.

D. Install PE pipe and fittings according to ASTM D 2321. Join pipe, tubing, and fittings with couplings for soil-tight joints according to manufacturer's written instructions. Install corrugated piping according to CPPA's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."

E. Install PVC pipe and gasketed fittings with gaskets according to ASTM D 2321.

F. Install corrugated steel piping according to ASTM A 798/A 798M.

G. Install reinforced-concrete sewer piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."

END OF SECTION 334100

ADS N-12® HP 12”- 30” STORM PIPE SPECIFICATION

Scope
This specification describes 12- through 30-inch (300 to 750 mm) ADS N-12 HP Storm pipe for use in gravity-flow applications.

Pipe Requirements
- 12- through 30-inch (300 to 750 mm) pipe shall have a smooth interior and annular exterior corrugations.
- 12- through 30-inch (300 to 750 mm) pipe shall have a minimum pipe stiffness of 46 pii when tested in accordance with ASTM D2412.
- Manning’s “n” value for use in design shall be 0.012.

Joint Performance
Pipe shall be joined with a gasketed integral bell & spigot joint.

12- through 30-inch (300 to 750 mm) shall be watertight according to the requirements of ASTM D3212. Spigot shall have two gaskets meeting the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

Fittings
Bell & spigot connections shall utilize a spun-on, welded or integral bell and spigot with gaskets meeting ASTM F477. Fitting joints shall meet the watertight joint performance requirements of ASTM D3212.

Field Pipe and Joint Performance
To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties
Virgin material for pipe and fitting production shall be impact modified copolymer polypropylene conforming to the requirements of ASTM D4101.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 30-inch (300 to 750 mm) diameters shall be one foot (0.3 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% SPD) or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.03. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

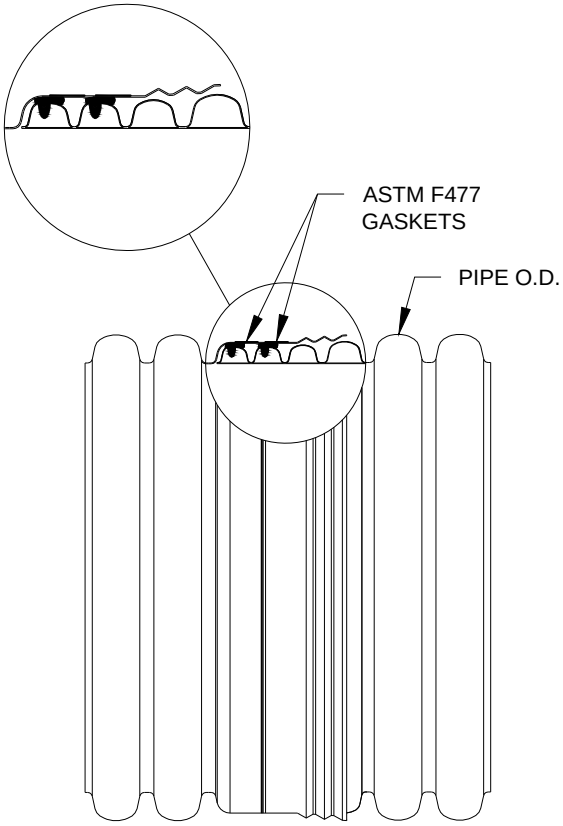
Pipe Dimensions

Nominal Diameter, in (mm)					
Pipe I.D. in (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)
Pipe O.D.* in (mm)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)
Minimum Pipe Stiffness @ 5% Deflection** #/in./in. (kN/m^2)	46 (320)	46 (320)	46 (320)	46 (320)	46 (320)

*Pipe O.D. values are provided for reference purposes only, values stated for 12- through 30-inch are ± 1 inch. Contact a sales representative for exact values.
** Minimum pipe stiffness values listed; contact a representative for maximum values

N-12® HP 12” – 30” STORM PIPE JOINT SYSTEM

(Joint configuration & availability subject to change without notice. Product detail may differ slightly from actual product appearance.)



12" - 30"
(300-750 MM)

Product Note 3.116

Re: Singlewall Pipe Installation Guide
Date: July 1, 1995

Product Notes

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

ADS corrugated polyethylene pipe is a flexible conduit, as is corrugated metal pipe. When properly installed, ADS culvert pipe has excellent load bearing strength. **To ensure maximum performance, ADS pipe should be installed in accordance with the following installation recommendations:**

1. Crushed stone, gravel or compacted soil backfill material should be used as the bedding and envelope material around the culvert. The aggregate size should not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

2. The corrugated pipe should be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it should be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.

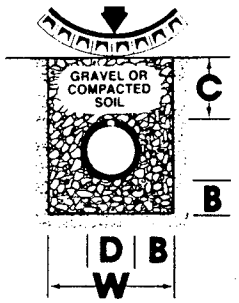
3. Either flexible (asphalt) or rigid (concrete) pavements may be laid as part of the minimum cover requirements.

4. Site conditions and availability of bedding materials often dictate the type of installation method used.

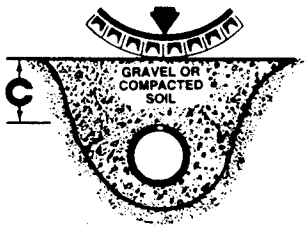
5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 90% is required. This is the same minimum compaction that is recommended by all culvert pipe manufacturers and can be achieved by either hand or mechanical tamping.

Two types of installations are recommended for H-20 live loads -- the heaviest legal highway loads. These are the trench and open ditch installations. The minimum height of cover recommendations are the same for both conditions.

Trench Installation



Open Ditch Installation



Minimum Dimensions -
Trench or Open Ditch Installations

Nominal Diameter D	Minimum Thickness B	Minimum Cover C	Min. Trench Width W
3"	4"	12"	20"
4"	4"	12"	21"
6"	4"	12"	23"
8"	4"	12"	25"
10"	4"	12"	28"
12"	5"	12"	31"
15"	5"	12"	34"
18"	6"	12"	39"
24"	6"	12"	48"

Note 1. ADS pipe also is recommended for residential driveway culverts and field crossings. Because these installations are not subject to repeated heavy truck traffic, the recommended compaction level is 85%. This compaction typically can be achieved by hand tamping the backfill material around the pipe. The minimum heights of cover for these installations are as listed in the above table.

Note 2. For more detailed installation data, contact the nearest ADS sales office.

Applicable Specifications and Installation Guidelines

1. ASTM F 405, Standard Specification for Corrugated Polyethylene Tubing and Fittings
2. ASTM F 667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing and Fittings
3. AASHTO M 252, Standard Specification for Corrugated Polyethylene Drainage Tubing
4. AASHTO M 294, Standard Specification for Corrugated Polyethylene Pipe, 12" to 24" Diameter
5. ASTM D 2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

Neighborhood Stabilization Program

July 6, 2008

Green Building Practices Summary

This summary is a general guide; the Green Building Practices - Specifications and NSP Technical Specifications shall take precedence.

ID #	Topic	Goals & Issues	Minimum Performance Measures
1.0	**Sustainable Sites**		
1.1	Erosion Control Measures	To reduce impacts resulting from erosion of soils by wind and water.	1. Protect all on-site and adjacent inlets and outfalls with hay bales, silt fencing or comparable measures.
			2. Stabilize areas that are disturbed by construction with hydroseeding, sod, rye grass, or comparable measures.
1.2	Minimize Site Disturbance	To minimize long-term environmental damage to the building lot during the construction process	1. Provide tree barricades around all trees to remain during construction.
			2. Where possible limit disturbance and compaction to existing soils to the areas associated with the existing driveway.
			3. Restore all area compacted during construction to natural compaction profile.
1.3	Invasive species	Remove invasive plant species that will impact native habitats. The effects of these species include increased water demand, reduction of biodiversity and depletion of native soil ecosystem.	1. Remove all existing invasive exotic plant species listed on the Florida Exotic Pest Plant Council Category 1 List
			2. Do not plant any invasive exotics plants listed on the Florida Exotic Pest Plant Council Category 1 List
1.4	Planting Design	Design the landscape following the Waterwise program and the principles of Xeriscape	1. Use only drought tolerant turf grass and limit its use in the yard.
			2. Incorporate the right plant in the right place and choose drought tolerant material. (See specs for detail)
			3. No automatic irrigation system. Hand water only as needed
			4. Use 3" min. of mulch from sustainable sources. No cypress mulch allowed.
1.5	Non-Toxic Pest Control	Home improvement features should minimize the need for poisons for control of insects, rodents, and other pests.	1. Remove up to 8" of organic and soil buildup around the building exterior foundation wall (siding, trim, structure).
			2. Seal all external cracks and entry points. For areas that can not be sealed install screens or other devices to deter rodents.

2.0	**Water Efficiency**		
2.1	Indoor Water Use Reduction	Minimize and improve indoor demand for water through the use of source efficient fixtures and fittings.	1. Lavatory faucet avg. flow rate must be ≤ 2.0 gpm
			2. Shower must be ≤ 2.0 gpm per stall
			3. Average flow rate for all toilets ≤ 1.3 gpf
3.0	**Energy and Atmosphere**		
3.1	Insulation	Improve the insulation properties of the home to minimize heat transfer and thermal bridging.	Ceiling/Attic ≥ R-30, Interior Wall ≥ R-11, Ducts ≥ R-8, and Exterior Doors ≥ R-5.
3.2	Windows	Maximize and improve the energy performance of windows.	1. Design and install windows and glass doors that have NFRC ratings that meet or exceed ENERGY STAR U-factor ≤ .55 and SHGC ≤ .30.
			2. Window Coverings are required.
3.3	Heating & Cooling Distribution System	Minimize energy consumption due to leaks, inefficiencies and thermal bridging in association with the heating and cooling distribution system.	1. Do not install ductwork in exterior walls and use at least R-6 insulation around ducts in unconditioned spaces.
			2. Install ENERGY STAR programmable thermostat.
			3. Install Energy efficient ceiling fans
			4. Use mastic compound in lieu of tape at all ductwork connections.
3.4	Water Heating	Incorporate greater energy efficiency the hot water source and distribution.	1. Insulate exposed domestic hot water piping to R-4.
			2. Install hot water heater unit with a minimum value of R-7.
3.5	Lighting	Reduce energy consumption associated with interior and exterior light fixtures.	1. Install compact fluorescent light bulbs (cfl) in high use rooms (kitchen, dining room, living room, hallways & family room)
			2. Exterior porch and access illumination shall be cfl.
			3. Security illumination shall have motion sensor controls or integrated photovoltaic cells.
3.6	Appliances	Reduce energy consumption of domestic appliances	1. Install ENERGY STAR labeled refrigerator.
			2. Install ENERGY STAR labeled ceiling fans
			3. Install ENERGY STAR labeled dishwasher that uses 6.0 gallons or less per cycle.
			4. Install ENERGY STAR labeled clothes washer.
3.7	Refrigerant Management	Select and test air-conditioning refrigerant to minimize environmental effects.	1. Use non-hydrochlorofluorocarbons (HCFC's) in cooling system.

4.0	**Materials and Resources**		
4.1	Environmentally Preferable Products	Increase demand for environmentally preferable products and\or components extracted, processed and manufactured within the region. Products to improve indoor air quality.	1. Architectural paints, coatings and primers applied to interior walls and ceilings: volatile organic compound (voc) content ≤ 50 g/L for flats & 150 g/L for nonflats.
			2. Anticorrosive and antirust paints applied to interior ferrous metal substrates: voc content ≤ 250 g/L.
			3. Clear wood finishes: voc ≤ 350 f/L for varnish & 550 f/L for lacquer.
			4. Floor coatings: voc ≤ 100 g/L.
			5. Sealers: voc ≤ 250 g/L for waterproofing, 275 g/L for sanding & 200 g/L for all others.
			6. Shellacs: voc ≤ 730 g/L for clear & 550 g/L for pigmented.
			7. Stains: voc ≤ 250 g/L.
			8. Multipurpose Construction Adhesives voc ≤ 70 g/L.
			9. See Technical Specifications for additional detail
5.0	**Indoor Environmental Quality**		
5.1	Combustion Venting	Minimize leakage of combustible gases into occupied spaces.	1. No unvented combustion appliances are allowed (e.g., decorative logs).
			2. Install carbon monoxide (CO) monitor on each floor.
			3. All fireplaces and woodstove must have doors.
5.2	Air Exhaust Measures	Reduce moisture and indoor pollutants in kitchens and bathrooms.	1. Design and install local exhaust systems in all bathrooms (including half-baths) and kitchen to meet requirements of section 5 of ASHRAE standard 62.2-2007.
			2. Exhaust all bathroom air to outdoors. (i.e., exhaust to attic, interstitial spaces are not permitted).
			3. Use ENERGY STAR labeled bathroom exhaust fans.
5.3	Air Filtration	Reduce particulate matter from air supply system.	Install air filters with a minimum efficiency reporting value (MERV) ≥ to 8. The air filter housings must be airtight to prevent bypass or leakage.
5.4	Contaminant Control	Reduce indoor airborne contaminants through source control and removal.	1. During construction seal all permanent ducts and vents to minimize contamination during construction. Remove seals after all phases of construction are complete.
			2. Flush home after completion of all construction and prior to occupancy based on standards in specifications…

5.5	Garage Pollutant Protection	Reduce transmission of pollutants from the garage to other occupied spaces.	1. Seal all penetrations to conditioned space. 2. Place CO detectors in adjacent rooms that share a door with the garage.
6.0	**Awareness and Education**		
6.1	Homeowner/Tenant	Educate occupants on sustainable practice and maintenance.	1. Provide homeowner with product manufacturer's manuals. 2. Provide information on efficient use of energy, water, natural resources and sustainable technologies. 3. Operations and maintenance guides shall be provided to homeowner. 4. Guidance on sustainable activities. 5. One-hour walk-through of home.
6.2	Building Manager (Multi-Family only)	Educate building managers about the operations and maintainence of sustainable systems.	1. Provide homeowner with product manufacturer's manuals. 2. Provide information on efficient use of energy, water, natural resources and sustainable technologies. 3. Operations and maintenance guides shall be provided to homeowner. 4. Guidance on sustainable activities. 5. One-hour walk-through of home.

GREEN BUILDING PRACTICES – SPECIFICATIONS
JUNE 24, 2009

1.0 SUSTAINABLE SITES

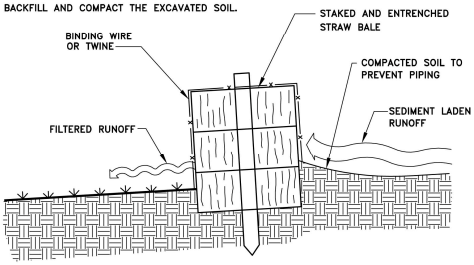
1.1 EROSION CONTROL MEASURES

Protect all on-site and adjacent inlets, outfalls and drainage ways to control run-off from on-site disturbed or unimproved areas. Control of run-off includes any sedimentation, sheet-flow or concentrated discharge to streams, adjacent properties, streets, adjacent drainage improvements or any off-site elements. Acceptable control methods include hay bales, silt fencing or comparable measures as defined below.

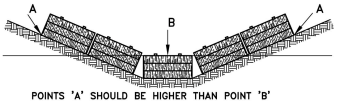
Disturbed areas shall be stabilized by hydro seeding, sod, rye grass, millet or comparable measures. Reference Section 015000 of the NSP Technical Specifcations – Temporary Facilities and Controls for further requirements.

See below for details pertaining to the erosion control measures:

NOTES:
1. EXCAVATE THE TRENCH
2. PLACE AND STAKE STRAW BALES
3. WEDGE LOOSE STRAW BETWEEN BALES
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



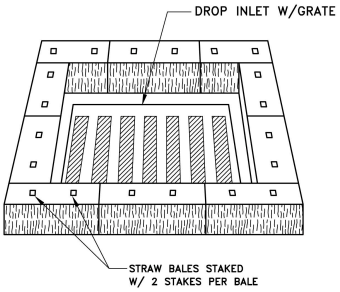
CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

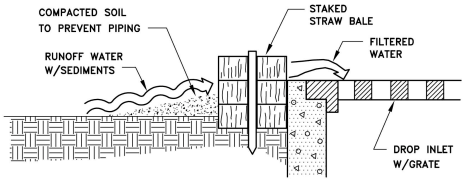


POINTS 'A' SHOULD BE HIGHER THAN POINT 'B'

PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY

STRAW BALE BARRIER

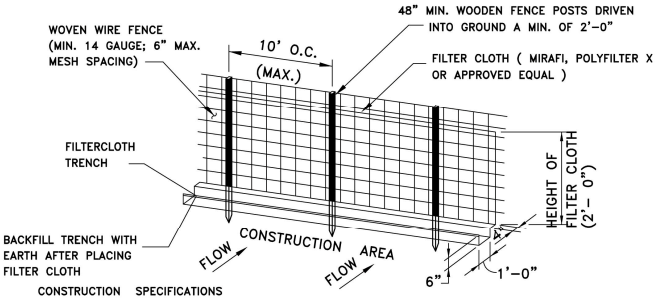




SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

STRAW BALE DROP INLET SEDIMENT FILTER



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS BY USE OF WIRE TIES
2. FILTER CLOTH TO BE FASTEN SECURELY TO WOVEN WIRE FENCE BY USE OF WIRE TIES SPACED EVERY 24"x 24".
3. SILT FENCES TO BE INSTALLED IN LOCATIONS AS SHOWN ON THIS EROSION AND SEDIMENT CONTROL PLAN PRIOR TO BEGINNING OF CONSTRUCTION TO CONTROL SEDIMENT.
4. SILT FENCES TO BE MAINTAINED AND CLEANED AS NECESSARY TO MAINTAIN IN FUNCTIONAL CONDITION.
5. SILT FENCES TO BE REMOVED AND THE AREA TO BE RESTORED TO ITS NATURAL CONDITION WHEN PERMANENT EROSION AND SEDIMENT CONTROL PROCEDURES ARE EFFECTIVE.

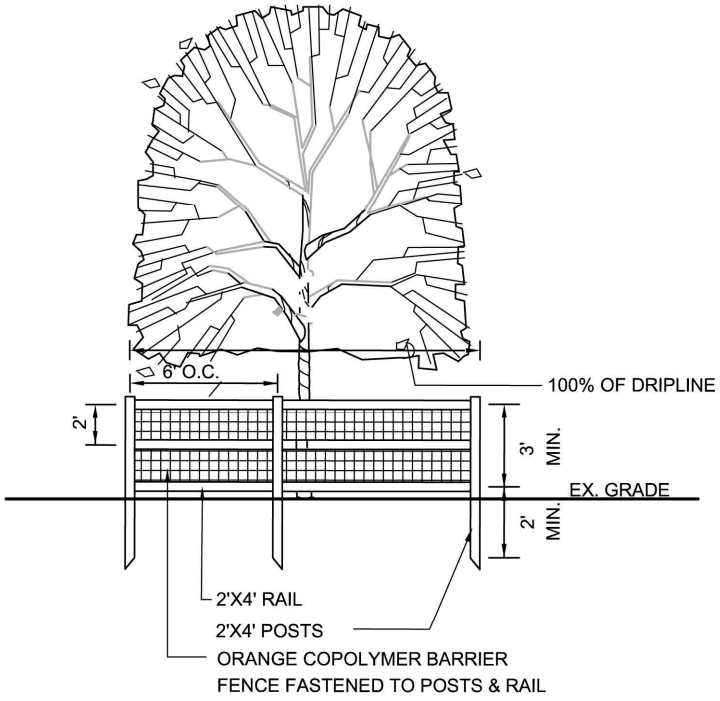
FILTER FENCE

1.2 MINIMIZE SITE DISTRUBANCE

Provide tree barricades around all trees to remain during construction per section 1.2 of the Green Building Practices Summary of the *NSP Green Building Practices Handbook*. The detail below defines acceptable methods for tree protection.

Limit site disturbance from vehicular traffic, equipment, materials storage and any other construction operations to areas that currently exist in a compacted state. These areas may include driveways and existing improved areas. Areas that are planted, undisturbed and\or not compacted that become compacted due to construction operations shall be returned to their original state in terms of soil character.

Provide tree barricades, per detail, around all existing trees to be protected.



NOTES:
1) THIS BARRICADE IS TO BE IN PLACE PRIOR TO LAND CLEARING OR CONSTRUCTION ACTIVITIES.
2) THE PROTECTED TREES TO BE SAVED SHALL BE PROVIDED WITH A PROTECTED TREE BARRICADE FENCE THAT INCLUDES 100 % OF DRIP LINE AND NO LESS THAN 50 % OF THE AVERAGE RADIUS OF THE DRIPLINE ADJUSTED AS NEEDED.

3) WHERE EXISTING TREES TO REMAIN ARE BEHIND SILT FENCE, TREE PROTECTION BARRICADE NOT REQUIRED.
4) CONTRACTOR NOT ALLOWED TO WORK, STORE MATERIALS, OR DISTURB AREA BEHIND SILT FENCE & TREE PROTECTION BARRICADE.

TREE PROTECTION BARRICADE DETAIL

1.3 INVASIVE SPECIES

Remove all existing invasive exotic plant species listed on the Florida Exotic Pest Plant Council Category 1 List (see list below) from the subject site. Planting of species on the list below is prohibited.

Florida Exotic Pest Plant Council Category 1 List

CATEGORY I

Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. *This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.*

Scientific Name	Commom Name	Gov. List	Reg. Dis.
Abrus precatorius	rosary pea	N	C, S
Acacia auriculiformis	earleaf acacia		C, S
Albizia julibrissin	mimosa, silk tree		N, C
Albizia lebbeck	woman's tongue		C, S
Ardisia crenata (=*A. crenulata* misapplied)	coral ardisia		N, C, S
Ardisia elliptica (=*A. humilis* misapplied)	shoebutton ardisia	N	C, S
Asparagus aethiopicus (=*A. sprengeri; A. densiflorus* misapplied)	asparagus-fern		N, C, S
Bauhinia variegata	orchid tree		C, S
Bischofia javanica	bishopwood		C, S
Calophyllum antillanum (=*C. calaba* and *C. inophyllum* misapplied)	santa maria (names "mast wood," "Alexandrian laurel" used in cultivation)		S
Casuarina equisetifolia	Australian-pine, beach sheoak	P, N	N, C, S
Casuarina glauca	suckering Australian-pine, gray sheoak	P, N	C, S
Cinnamomum camphora	camphor tree		N, C, S
Colocasia esculenta	wild taro		N, C, S
Colubrina asiatica	lather leaf	N	S
Cupaniopsis anacardioides	carrotwood	N	C, S
Dioscorea alata	winged yam	N	N, C, S
Dioscorea bulbifera	air-potato	N	N, C, S
Eichhornia crassipes	water-hyacinth	P	N, C, S
Eugenia uniflora	Surinam cherry		C, S
Ficus microcarpa (*F. nitida* and *F. retusa* var. *nitida* misapplied)	laurel fig		C, S
Hydrilla verticillata	hydrilla	P, U	N, C, S
Hygrophila polysperma	green hygro	P, U	N, C, S
Hymenachne amplexicaulis	West Indian marsh grass		C, S
Imperata cylindrica (*I. brasiliensis* misapplied)	cogon grass	N, U	N, C, S
Ipomoea aquatica	waterspinach	P, U	C
Jasminum dichotomum	Gold Coast jasmine		C, S
Jasminum fluminense	Brazilian jasmine		C, S
Lantana camara	lantana, shrub verbena		N, C, S
Ligustrum lucidum	glossy privet		N, C
Ligustrum sinense	Chinese privet, hedge privet		N, C, S
Lonicera japonica	Japanese honeysuckle		N, C, S
Ludwigia peruviana	Peruvian primrosewillow		N, C, S
Lygodium japonicum	Japanese climbing fern	N	N, C, S
Lygodium microphyllum	Old World climbing fern	N	C, S
Macfadyena unguis-cati	cat's claw vine		N, C, S
Manilkara zapota	sapodilla		S
Melaleuca quinquenervia	melaleuca, paper bark	P, N, U	C, S
Mimosa pigra	catclaw mimosa	P, N, U	C, S
Nandina domestica	nandina, heavenly bamboo		N, C
Nephrolepis cordifolia	sword fern		N, C, S
Nephrolepis multiflora	Asian sword fern		C, S
Neyraudia reynaudiana	Burma reed, cane grass	N	S
Paederia cruddasiana	sewer vine, onion vine	N	S
Paederia foetida	skunk vine	N	N, C, S
Panicum repens	torpedo grass		N, C, S
Pennisetum purpureum	Napier grass		N, C, S
Pistia stratiotes	waterlettuce	P	N, C, S
Psidium cattleianum (=*P. littorale*)	strawberry guava		C, S
Psidium guajava	guava		C, S
Pueraria montana var. *lobata* (=*P. lobata*)	kudzu	N	N, C, S
Rhodomyrtus tomentosa	downy rose-myrtle	N	C, S
Rhynchelytrum repens (=*Melinis repens*)	Natal grass		N, C, S
Ruellia tweediana (=*R. brittoniana; R. coerulea*)	Mexican petunia		N, C, S
Sapium sebiferum (=*Triadica sebifera*)	popcorn tree, Chinese tallow tree	N	N, C, S
Scaevola taccada (=*S. sericea; S. frutescens*)	scaevola, half-flower, beach naupaka	N	C, S
Schefflera actinophylla (=*Brassaia actinophylla*)	schefflera, Queensland umbrella tree		C, S
Schinus terebinthifolius	Brazilian pepper	P, N	N, C, S
Senna pendula var. *glabrata* (=*Cassia coluteoides*)	climbing cassia, Christmas cassia, Christmas senna		C, S
Solanum tampicense (=*S. houstonii*)	wetland nightshade, aquatic soda apple	N, U	C, S
Solanum viarum	tropical soda apple	N, U	N, C, S
Syngonium podophyllum	arrowhead vine		N, C, S
Syzygium cumini	jambolan plum, Java plum		C, S
Tectaria incisa	incised halberd fern		S
Thespesia populnea	seaside mahoe		C, S
Tradescantia fluminensis	white-flowered wandering jew		N, C
Urochloa mutica (=*Brachiaria mutica*)	Para grass		C, S

1.4 PLANTING DESIGN

TURF GRASS

Use only drought tolerant turf grass and limit its use in the yard, acceptable turf grass includes *Paspalum notatum* 'argentine' (bahia grass). Turf grass shall be provided by sod only, seed is not acceptable.

Turf shall be installed in all areas disturbed by construction and along new bed lines. If existing turf is in sufficient condition to remain it shall be fertilized and maintained during construction. See Section 329200 of the NSP Technical Specifications – Turf and Grasses for further requirements.

PLANTS

Incorporate the right plant in the right place and choose drought tolerant material listed below, section 1.4 - I. No automatic irrigation system. Hand water only as needed. Use 3" min. of mulch from sustainable sources. Use of cypress mulch is not allowed.

A. Existing trees and plant material shall be preserved to the greatest extent possible. Prune existing plant material to regain proper shape as needed.

B. 100% home frontage along the street frontage structural foundation wall and any extensions or protrusions (i.e. porches) shall have a continuous single row of shrubs – species: election from section I or approved equal.

C. 50% of both sides of the home along the facing frontage at the base of the foundation wall or any extensions or protrusion (i.e. condensing units) shall have a continuous single row of shrubs along the structure: species selection from I or approved equal.

D. If any home is on a corner lot or has one side of the home facing a street 100% of the foundation wall along the street frontage including any extensions or protrusions (i.e. condensing units) shall be planted with a continuous row of shrubs from: species selection from I or approved equal. Excludes planting at the base of fences.

E. Turf shall be installed in all areas disturbed by construction and along new bed lines. If existing turf is in sufficient condition to remain it shall be fertilized and maintained during construction.

F. If an existing irrigation system is present the system shall be adapted to irrigate the turf areas during the establishment period.

G. Shrubs shall be planted no closer than 2 feet from the foundation of the structure.

H. 3" of mulch shall be applied in planting beds using only sustainable sources (no cypress mulch).

I. Plant material shall be selected from the following list:

Shrubs – 3 gal (spaced 24" on center)

Dwarf Buford Holly
Mrs. Schillers Delight Holly
Schillings Holly
Indian Hawthorne
'Plum' Loropetalum
Boxwood

Groundcovers – 1 gal (spaced 18" on center)

Blue Lily of the Nile
Liriope
Aztec Grass
Trailing Lantana
Asiatic Jasmine
Parsons Juniper

Turf grass- Sod
Argentine Bahia grass

J. Hand watering of installed plant material and turf grass shall commence immediately upon installation.

K. Watering shall continue to occur for 3 months after installation at a minimum of twice weekly or until occupancy of the home has occurred, whichever is first.

L. See Section 329300 of the NSP Technical Specifications – Plants for further requirements

PREPARATION OF PLANTING SOIL FOR TREES, SHRUBS AND GROUNDCOVERS

M. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.

N. Mix specified soil amendments and fertilizers as recommended by soils tests with topsoil at rates specified. Add iron sulphate or ground limestone to the mixture as required by the soil analysis in quantities necessary to bring the soil to pH rating of between 5.5 and 6.5. Minerals used for pH correction shall be commercially produced for this purpose. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.

1. Planting Soil Mixture: Provide in all backfill areas as indicated on the details and drawings.

2. Mix: 1/3 parts organic soil amendment to 1/3 parts peat humus to 1/3 existing topsoil or washed builder's sand and commercial fertilizer as required to bring the pH to 5.5 and 6.5.

O. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.

P. For planting beds and lawns, mix planting soil mixture either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

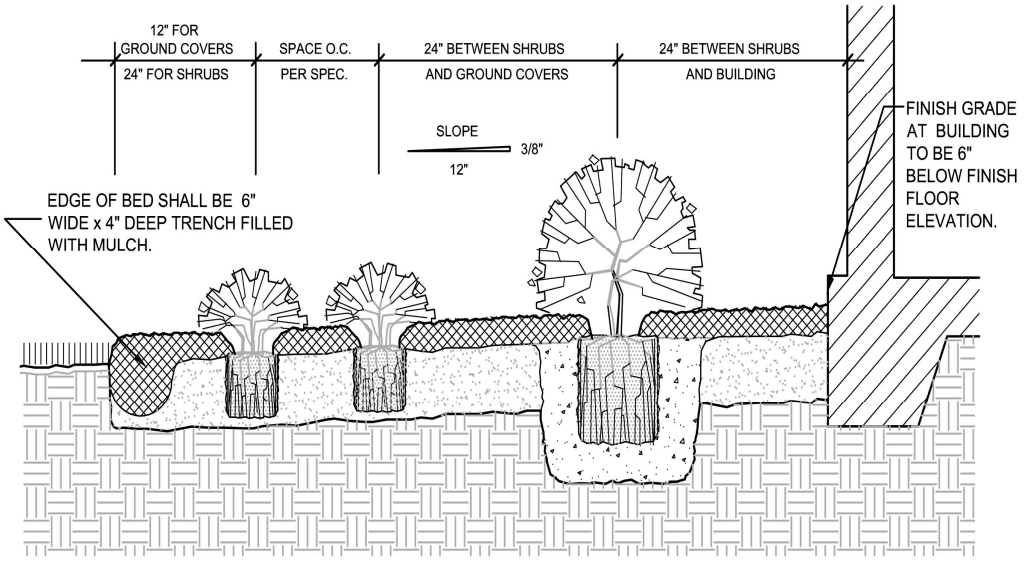
1. Mix lime with dry soil prior to mixing of fertilizer.

2. Prevent lime from contacting roots of acid-loving plants.

3. Apply phosphoric acid fertilizer (other than that constituting a portion of complete fertilizers) directly to subgrade before applying planting soil and tilling.

PREPARATION OF PLANTING BEDS

Dig beds not less than 8 inches deep and mix with specified soil amendments and fertilizers. Remove sticks, stones, rubbish and other extraneous matter.

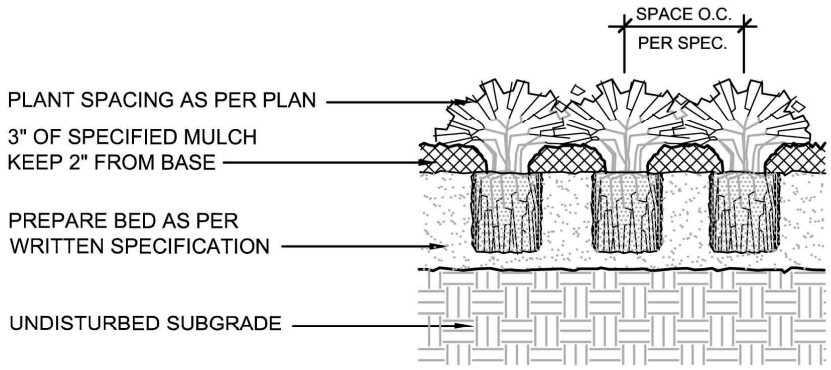


NOTES:

- FINISH GRADE AT BUILDING TO BE 6" BELOW FINISH FLOOR ELEVATION.
- BED GRADE TO SLOPE AT 3/8" PER FOOT AWAY FROM BUILDING.
- SEE DETAILS AND SPECIFICATIONS FOR PLANTING INSTRUCTIONS.

BED PREPARATION

N.T.S.

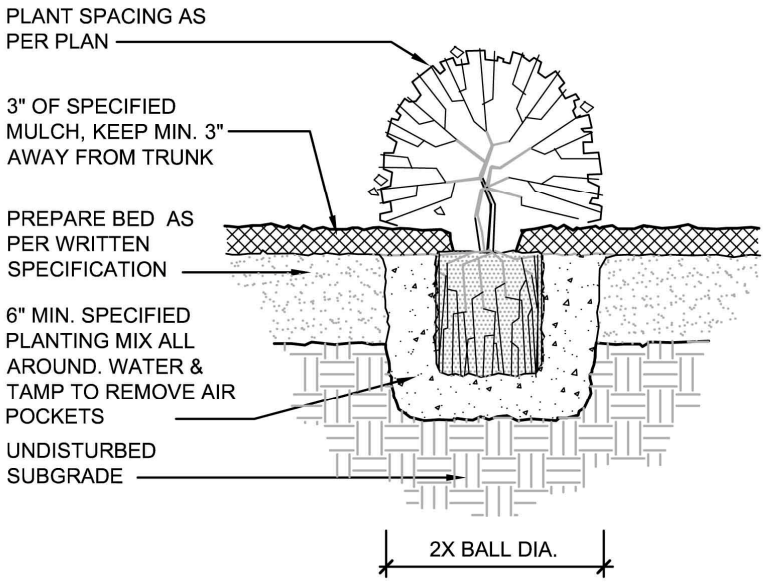


NOTES:

- GROUND COVER PLANTS ARE TO BE SPACED AS INDICATED IN SECTION I.
- 3" MIN. SPECIFIED PLANTING MIX UNDER AND AROUND - WATER AND TAMP TO AIR POCKETS.

GROUNDCOVER PLANTING

N.T.S.



NOTES:

- PLANT SO THAT TOP OF ROOT BALL IS FLUSH WITH FINISHED GRADE.

SHRUB PLANTING

N.T.S.

1.5 NON-TOXIC PEST CONTROL

Remove up to 8" of organic and soil buildup around building exterior foundation wall (siding, trim, structure) and regrade the first 10' away from the foundation to provide positive drainage where possible. Seal all external cracks and entry points utilizing the appropriate sealants, see section 4.1. For areas that can not be sealed install screens or other devices to deter rodents.

2.0 WATER EFFICIENCY

2.1 INDOOR WATER USE REDUCTION

Contractor shall install all fixtures that comply with Neighborhood Stabilization Program Green Building Practices. All faucets and showerheads shall have ≤ 2.0 gpm and ≤ 1.3 gpf for toilets. The following are approved fixtures that can be used or a comparable fixture can be submitted for approval.

See Section 220000 of the NSP Technical Specifications – Plumbing Systems for further requirements.

3.0 ENERGY AND ATMOSPHERE

3.1 INSULATION

The installer shall assure the correct size, shape, and type of insulation that is appropriate for its location. Any walls that leak water must be repaired before insulating. Caulk where wiring runs through the ceiling joist and around the top of the wall.

See Division 7 and 23 of the NSP Technical Specifications for requirements.

3.2 WINDOWS

Install windows and glass doors that have NFRC ratings that meet or exceed ENERGY STAR U-factor ≤ .55 and SHGC ≤ .30. Rating confirmation shall be furnished by the contractor in the form of certifications and\or window labels.

Windows which are acceptable to remain shall incorporate protective film as dictated in the NSP Technical Specifications.

See Division 8 of the NSP Technical Specifications – for further requirements.

3.3 HEATING AND COOLING DISTRIBUTION SYSTEM

Do not install ductwork in exterior walls and use at least R-6 insulation around ducts in unconditioned spaces. Install ENERGY STAR programmable thermostat as well as energy efficient ceiling fans. Use mastic compound in lieu of tape at all ductwork connections.

See Division 23 NSP Technical Specifications - for selections and additional procedures.

3.4 WATER HEATING

Insulate exposed (post-construction) domestic hot water piping to R-4. In cases where internal hot water piping is exposed as a result of construction or replaced, provide piping insulation to a value of R-4.

See Division 22 NSP Technical Specifications - for additional requirements.

3.5 LIGHTING

Install compact fluorescent light bulbs (cfl) in high use rooms (kitchen, dining room, living room, hallways & family room), exterior porch and access illumination. Security illumination shall have motion sensor controls or integrated photovoltaic cells.

See Division 26 of the NSP Technical Specifications – for further requirements.

3.6 APPLIANCES

Install ENERGY STAR labeled refrigerator, ceiling fans, clothes washer, and dishwasher (uses 6.0 gallons or less per cycle).

See Division 11 of the NSP Technical Specifications – for further requirements.

3.7 REFRIGERANT MANAGEMENT

Use either hydrochlorofluorocarbons (HCFC's) or hydroflurocarbons as the refrigerants within the cooling system. The use of chlorofluorocarbons (CFC's) is prohibited. An example of two acceptable refrigerants are: Puron (R-410a) or R-22.

Remove CFC-based refrigerants from existing HVAC&R equipment indicated to remain and replace with refrigerants that are not CFC based. Replace or adjust existing equipment to accommodate new refrigerant

See Division 23 of the NSP Technical Specifications – for further requirements.

4.0 <u>MATERIALS AND RESOURCES</u>

4.1 ENVIRONMENTALLY PREFERABLE PRODUCTS

Use adhesives, sealants, compounds, coatings and primers with the following limits for VOC content:

1. Wood Glues: 30 g/L.
2. Metal-to-Metal Adhesives: 30 g/L.

3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: ≤ 70 g/L.
14. Stains: ≤ 250 g/L
15. Shellacs ≤ 730 g/L for clear and 550 g/L for pigmented.
16. Fiberglass Adhesives: 80 g/L.
17. Contact Adhesive: 80 g/L.
18. Structural Glazing Adhesives: 100 g/L.
19. Wood Flooring Adhesive: 100 g/L.
20. Structural Wood Member Adhesive: 140 g/L.
21. Special-Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, PTFE, ultra-high molecular weight polyethylene, rubber or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
22. Top and Trim Adhesive: 250 g/L.
23. Plastic Cement Welding Compounds: 350 g/L.
24. ABS Welding Compounds: 400 g/L.
25. CPVC Welding Compounds: 490 g/L.
26. PVC Welding Compounds: 510 g/L.
27. Adhesive Primer for Plastic: 650 g/L.
28. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
29. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
30. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
31. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
32. Other Adhesives: 250 g/L.
33. Architectural Sealants: 250 g/L.
34. Nonmembrane Roof Sealants: 300 g/L.
35. Single-Ply Roof Membrane Sealants: 450 g/L.
36. Other Sealants: 420 g/L.
37. Sealant Primers for Nonporous Substrates: 250 g/L.
38. Sealant Primers for Porous Substrates: 775 g/L.
39. Modified Bituminous Sealant Primers: 500 g/L.
40. Other Sealant Primers: 750 g/L.

Low-emitting Materials: Provide doors, composites, agri-fiber products, wood assemblies or any materials that do not contain urea formaldehyde.

5.0 INDOOR ENVIRONMENT QUALITY

5.1 COMBUSTION VENTING

Install a carbon monoxide detector on the ceiling and within 10 feet of each bedroom door. In the case of having more than one story home, a minimum of one CO detector will be placed on every floor. Do not place the detector right next to or over a fireplace or flame-producing appliance. All fireplaces and woodstoves must have doors. No un-vented combustion appliances are allowed unless appropriately vented to the outside.

See Division 10, 23 and 28 of the NSP Technical Specifications – for further requirements.

5.2 AIR EXHAUST MEASURES

Design and install local exhaust systems in all bathrooms (including half-baths) and kitchen to meet requirements of section 5 of ASHRAE standard 62.2-2007. Use ENERGY STAR labeled bathroom exhaust fans that are vented to the outdoors. Kitchen exhaust measures through non-vented hoods are acceptable to meet this requirement.

See Division 26 of the NSP Technical Specifications – for further requirements.

5.3 AIR FILTERATION

Install air filters with a minimum efficiency reporting value (MERV) > to 8. The air filter housings must be airtight to prevent bypass or leakage.

5.4 CONTAMINANT CONTROL

During construction seal all permanent ducts and vents to minimize contamination during construction. Remove seals after all phases of construction are complete and flush home for 18 continuous hours minimum after completion of all construction and prior to occupancy based on standards in specifications.

Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."

If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 1 of the NSP Technical Specifications - Temporary Facilities and Controls, install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.

Replace all air filters immediately prior to occupancy.

After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14000 cu. ft. of outdoor air per sq. ft. of floor area while maintaining an

internal temperature of at least 60 deg F and a relative humidity no higher than 60 percent.

5.5 GARAGE POLLUTION PROTECTION

Seal all penetrations to conditioned space including attic space above garage and place one CO detector on the wall of an adjacent room that share a door with the garage. This detector is in addition to those required in Section 5.1 – Combustion Venting

6.0 AWARENESS AND EDUCATION

6.1 HOMEOWNER/TENANT

Provide homeowner with product manufacturer's manuals and information on efficient use of energy, water, natural resources and sustainable technologies. Operations and maintenance guides shall be provided to homeowner as well as guidance on sustainable activities. One-hour walk-through of home will be done after completion of home.

6.2 BUILDING MANAGER (MULTI-FAMILY ONLY)

Provide building manager with product manufacturer's manuals and information on efficient use of energy, water, natural resources and sustainable technologies. Operations and maintenance guides shall be provided to manager as well as guidance on sustainable activities. One-hour walk-through of home will be done after completion of units.