

A New Multi-Family Development for:
Knoxville's Community Development Corporation
Austin Homes Redevelopment – Phase 1A

Burge Drive & Harriet Tubman Street
Knoxville, Tennessee 37915

TABLE OF CONTENTS – Revision #2, dated May 26, 2020

BIDDING REQUIREMENTS

00 01 15	LIST OF CONTRACT DRAWINGS	REV 02
00 62 00	DIGITAL FILES RELEASE FORM	
00 63 25	SUBSTITUTION REQUEST FORM	REV 02

CONTRACT SPECIFICATIONS

DIVISION 1 GENERAL REQUIREMENTS

01 10 00	SUMMARY OF THE WORK	
01 16 00	REGULATORY REQUIREMENTS	
01 23 00	ALTERNATES	REV 02
01 25 00	SUBSTITUTION PROCEDURES	
01 31 00	PROJECT MANAGEMENT AND COORDINATION	
01 33 00	SUBMITTALS	
01 33 20	SUBMITTAL COVER SHEET	
01 35 00	SPECIAL PROJECT PROCEDURES	
01 40 00	QUALITY CONTROL	
01 45 00	SPECIAL INSPECTIONS	
01 45 01	SPECIAL INSPECTION AND TEST AGREEMENT	
01 45 02	SPECIAL INSPECTION DAILY REPORT	
01 45 03	SPECIAL INSPECTION DISCREPANCY NOTICE	
01 45 04	SPECIAL INSPECTION WEEKLY REPORT	
01 45 05	SPECIAL INSPECTION FINAL REPORT	
01 45 06	SPECIAL INSPECTION RECORD	
01 50 00	CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS	
01 60 00	PRODUCT REQUIREMENTS	
01 77 00	CONTRACT CLOSEOUT	
01 77 10	CLEANING	
01 77 23	FINAL CLEANING	
01 77 24	CONTRACTORS REQUEST FOR INFORMATION	

DIVISION 2 EXISTING CONDITIONS (NOT USED)

DIVISION 3 CONCRETE

03 05 16	UNDER SLAB VAPOR BARRIER
03 10 00	CONCRETE FORMING AND ACCESSORIES
03 15 21	TERMITE BARRIER
03 20 00	CONCRETE REINFORCING
03 30 00	CAST IN PLACE CONCRETE
03 30 01	MIX DESIGN SUBMITTAL FORM

DIVISION 4 MASONRY

04 05 11	MORTAR AND MASONRY GROUT
04 20 00	UNIT MASONRY

DIVISION 5 METALS

05 12 00	STRUCTURAL STEEL FRAMING
05 31 00	STEEL DECKING
05 40 00	COLD FORMED METAL FRAMING
05 50 00	METAL FABRICATIONS
05 51 00	METAL STAIRS
05 52 13	PIPE AND TUBE RAILINGS
05 52 20	ROOF GUARD PROTECTION SYSTEM

DIVISION 6 WOOD, PLASTICS AND COMPOSITES

06 05 73	WOOD TREATMENT	
06 10 00	ROUGH CARPENTRY	
06 15 00	WOOD DECKING	
06 15 01	LUMBER FRAMING AND FINISH CARPENTRY (LANDSCAPE)	REV 02
06 17 33	WOOD I-JOISTS	
06 17 53	SHOP FABRICATED WOOD TRUSSES	
06 20 00	FINISH CARPENTRY	
06 41 00	ARCHITECTURAL WOOD CASEWORK	REV 02
06 61 00	CAST POLYMER FABRICATIONS	
06 83 16	FIBERGLASS REINFORCED PANELING	

DIVISION 7 THERMAL AND MOISTURE PROTECTION

07 05 53	FIRE AND SMOKE ASSEMBLY IDENTIFICATION	
07 11 13	BITUMINOUS DAMPPROOFING	
07 13 00	SHEET WATERPROOFING	
07 21 00	THERMAL INSULATION	
07 21 19	FOAMED-IN-PLACE INSULATION	
07 21 29	SPRAYED ACOUSTICAL INSULATION	
07 25 00	WEATHER BARRIERS	REV 02
07 27 20	VAPOR PERMEABLE FLUID APPLIED AIR BARRIER	
07 31 13	ASPHALT SHINGLES	
07 42 13	METAL WALL PANELS	
07 46 16	ALUMINUM SIDING	
07 46 46	FIBER CEMENT SIDING	REV 02
07 54 00	FULLY ADHERED THERMOPLASTIC MEMBRANE ROOFING	
07 62 00	FLASHING AND SHEET METAL	
07 65 00	PEEL AND STICK FLASHING	
07 71 00	ROOF SPECIALTIES	

07 71 23	MANUFACTURED GUTTERS AND DOWNSPOUTS
07 72 00	ROOFING ACCESSORIES
07 81 00	APPLIED FIREPROOFING
07 81 23	INTUMESCENT FIRE PROTECTION
07 84 00	FIRE STOPPING
07 92 00	JOINT SEALANTS
07 95 13	EXPANSION JOINT COVER ASSEMBLIES

DIVISION 8 OPENINGS

08 11 13	HOLLOW METAL DOORS AND FRAMES
08 12 13	HOLLOW METAL FRAMES
08 14 23.19	MOLDED-HARDBOARD FACED WOOD DOORS
08 14 33	STILE AND RAIL WOOD DOORS
08 16 13	FIBERGLASS ENTRY DOORS
08 31 00	ACCESS DOORS AND PANELS
08 31 13	ACCESS DOORS AND PANELS
08 33 23	OVERHEAD DOOR
08 43 13	ALUMINUM-FRAMED STOREFRONTS
08 54 13	FIBERGLASS WINDOWS
08 71 00	DOOR HARDWARE
08 80 00	GLAZING
08 91 00	LOUVERS

REV 02

DIVISION 9 FINISHES

09 05 61	COMMON WORK RESULTS FOR FLOORING PREPARATION
09 21 16	GYP SUM BOARD ASSEMBLIES
09 22 16	NON-STRUCTURAL METAL FRAMING
09 22 26	METAL SUSPENSION SYSTEMS
09 30 00	TILING
09 51 00	ACOUSTICAL CEILINGS
09 54 26	SUSPENDED WOOD CEILINGS
09 65 00	RESILIENT FLOORING
09 65 19	RESILIENT TILE FLOORING (OMIT)
09 65 66	RESILIENT ATHLETIC FLOORING
09 68 13	TILE CARPETING
09 80 00	GYP SUM CEMENT UNDERLAYMENT - GYP CRETE
09 91 13	EXTERIOR PAINTING
09 91 23	INTERIOR PAINTING
09 93 00	STAINING AND TRANSPARENT FINISHING

REV 02

DIVISION 10 SPECIALTIES

10 14 00	SIGNAGE
10 26 00	WALL AND DOOR PROTECTION
10 28 00	TOILET, BATH, AND LAUNDRY ACCESSORIES
10 44 00	FIRE PROTECTION SPECIALTIES
10 51 43	WIRE MESH STORAGE LOCKERS
10 51 13	POSTAL SPECIALTIES
10 56 17	WALL MOUNTED STANDARDS AND SHELVING
10 56 23	WIRE STORAGE SHELVING
10 57 23	CLOSET AND UTILITY SHELVING
10 82 00	GRILLS AND SCREENS

DIVISION 11 EQUIPMENT

11 31 13 RESIDENTIAL APPLIANCES

DIVISION 12 FURNISHINGS

12 21 13 HORIZONTAL LOUVER BLINDS

12 24 00 WINDOW SHADES

12 36 00 COUNTERTOPS

12 36 40 GRANITE COUNTERTOP

12 93 00 SITE FURNISHINGS

12 93 13 BICYCLE RACKS

REV 02

REV 02

REV 02

DIVISION 13 SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 CONVEYING EQUIPMENT

14 21 00 TRACTION ELEVATOR

REV 02

DIVISION 21 FIRE SUPPRESSION

21 05 00 COMMON WORK RESULTS FOR FIRE SUPPRESSION

21 10 00 FIRE-SUPPRESSION SYSTEMS BUILDING #1

21 10 10 FIRE PROTECTION AND SPRINKLER – NFPA 13 R BUILDINGS #2 - #9

DIVISION 22 PLUMBING

22 05 00 COMMON WORK RESULTS FOR PLUMBING

22 05 05 GENERAL-DUTY VALVES FOR DOMESTIC WATER

22 05 10 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

22 05 15 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

22 05 20 PLUMBING INSULATION

22 05 25 DOMESTIC WATER PIPING AND APPURTENANCES

22 05 30 DRAINAGE, WASTE, VENT PIPING & APPURTENANCES

22 05 35 FACILITY STORM DRAINAGE PIPING AND APPURTENANCES

22 05 40 ELECTRIC DOMESTIC WATER HEATERS

22 05 50 PLUMBING FIXTURES

DIVISION 23 HEATING, VENTING & AIR CONDITIONING

23 05 00 GENERAL PROVISIONS - HVAC

23 05 10 BASIC MATERIALS AND METHODS - HVAC

23 05 29 SUPPORTS AND ANCHORS - HVAC

23 07 00 INSULATION - HVAC

23 23 00 REFRIGERANT PIPING

23 30 00 AIR-DISTRIBUTION

23 34 24 A-SERIES VERTICAL PACKAGED AIR CONDITIONERS & HEAT PUMPS

23 81 26 SPLIT SYSTEM HEAT PUMP SYSTEM

23 81 29 MULTIPLE INDOOR UNIT DUCTLESS SPLIT SYSTEM

23 81 50 DUCTLESS SPLIT SYSTEM HEAT PUMPS

DIVISION 26 ELECTRICAL

26 05 00	COMMON WORK RESULTS FOR ELECTRICAL
26 05 10	POWER SERVICE
26 05 19	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
26 05 26	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
26 05 29	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 33	RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
26 05 53	IDENTIFICATION FOR ELECTRICAL SYSTEMS
26 09 23	LIGHTING CONTROL DEVICES
26 09 23.1	LIGHTING CONTROL RELAY PANEL
26 24 16	PANELBOARDS
26 27 26	WIRING DEVICES
26 28 13	FUSES
26 32 13	GENERATOR SPECIFICATION
26 32 14	AUTOMATIC TRANSFER SWITCHES
26 41 13	LIGHTNING PROTECTION FOR STRUCTURES
26 43 13	SURGE PROTECTION FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS
26 51 19	LED INTERIOR LIGHTING
26 56 00	EXTERIOR LIGHTING

DIVISION 27 COMMUNICATIONS

27 05 00	COMMON WORK RESULTS FOR COMMUNICATIONS
27 05 28	PATHWAYS FOR COMMUNICATION SYSTEMS
27 10 20	COMMUNICATIONS WIRING BUILDING NO. 1
27 10 21	COMMUNICATIONS WIRING BUILDING NO. 2 THRU 9
27 11 00	COMMUNICATIONS EQUIPMENT ROOM FITTINGS

DIVISION 28 ELECTRONIC SAFETY & SECURITY

28 05 00	COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY
28 16 43	RADIO SIGNAL BOOSTER SYSTEM
28 31 11	DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM BUILDING NO. 1
28 31 12	FIRE ALARM SYSTEM BUILDING NO. 2 THRU 9

DIVISION 31 EARTHWORK

31 00 00	EARTHWORK
32 20 00	SITE CLEARING
31 22 19	FINISH GRADING
31 23 00	EXCAVATION AND FILL
31 23 13	EXCAVATION, BACKFILL AND COMPACTION FOR PAVEMENT
31 23 16.13	FACILITY UTILITIES, EXCAVATION AND BACKFILL
31 25 13	SLOPE PROTECTION AND EROSION CONTROL

DIVISION 32 EXTERIOR IMPROVEMENTS

32 11 00	PAVING BASE COURSE
32 11 23	AGGREGATE MATERIALS
32 12 16	ASPHALT CONCRETE PAVING
32 16 00	CURBS AND SIDEWALKS
32 17 23	PAVEMENT MARKINGS
32 91 00	PLANTING PREPARATION
32 92 00	TURF AND GRASSES
32 93 00	PLANTS

DIVISION 33 UTILITIES

33 11 00	WATER DISTRIBUTION
33 31 00	SANITARY SEWERAGE
33 41 00	STORM SEWERS AND PIPE CULVERTS
33 49 00	STORM DRAINAGE STRUCTURES

END OF TABLE OF CONTENTS

SECTION 00 01 15
LIST OF CONTRACT DRAWINGS

SHEET NO.	SHEET NAME
------------------	-------------------

00.0 - COVER

T0.0	COVER SHEET
T0.1	DRAWING INDEX

02.0 - CIVIL

C001	GENERAL SITE NOTES
C100	EXISTING SITE CONDITIONS
C200	SITE LAYOUT PLAN
C300	SITE GRADING PLAN
C400	SITE DRAINAGE PLAN
C500	SITE UTILITY PLAN
C800	DETAILS
C801	DETAILS
C802	DETAILS
C803	DETAILS
C804	DETAILS
C900	INITIAL EPSC PLAN
C901	FINAL EPSC PLAN
C902	EPSC DETAILS
C903	EPSC DETAILS

03.0 - LANDSCAPE

L0.1	LANDSCAPE NOTES & LEGENDS
L1.1	LANDSCAPE LAYOUT & MATERIALS PLAN
L1.2	LANDSCAPE PLANTING PLAN
L2.1	ENTRY MONUMENT ENLARGEMENTS & DETAILS
L2.2	LANDSCAPE PAVING DETAILS
L2.3	LANDSCAPE WALL AND FENCE DETAILS
L2.4	LANDSCAPE AMENITY DETAILS
L2.5	LANDSCAPE PLANTING DETAILS
L2.6	LANDSCAPE PLANTING DETAILS

04.0 - PROJECT GENERAL NOTES

G0.1	ABBREVIATIONS, SYMBOLS, GENERAL NOTES AND DETAILS
G1.0	WALL LEGEND
G1.1	ACCESSIBLE NOTES AND DETAILS
G1.2	ARCHITECTURAL SITE PLAN
G1.3	ARCHITECTURAL SITE SECTIONS
G1.4	MULTIFAMILY - ADDRESSING
G1.5	TOWNHOMES - ADDRESSING
G2.1	UL ASSEMBLIES - U376
G2.2	UL ASSEMBLIES - U305
G2.3	UL ASSEMBLIES - L506
G2.4	UL ASSEMBLIES - L528
G2.5	UL ASSEMBLIES - X701
G2.6	UL ASSEMBLIES - U344
G2.7	UL ASSEMBLIES - U905
G2.8	UL ASSEMBLIES - U301
G4.1	INTERIOR ROOM FINISH LEGEND & FINISH NOTES
G4.2	TYPICAL UNIT MILLWORK & CASEWORK DETAILS
G4.3	TYPICAL MILLWORK & CASEWORK DETAILS - BUILDING 1

04.1 - B1 - MF - GENERAL

MF - A0.1	PROJECT INFORMATION
MF - A0.2	CODE ANALYSIS
MF - A0.3	EXIT ANALYSIS
MF.G0.0	MULTIFAMILY NET AREA USABLE PLANS
MF.G0.1	MULTIFAMILY GROSS LIVING AREA PLANS
MF - LS1.0	LIFE SAFETY PLAN - LEVEL 00
MF - LS1.1	LIFE SAFETY PLAN - LEVEL 01
MF - LS1.2	LIFE SAFETY PLAN - LEVEL 02
MF - LS1.3	LIFE SAFETY PLAN - LEVEL 03
MF - LS1.4	LIFE SAFETY PLAN - LEVEL 04
MF - LS1.5	LIFE SAFETY PLAN - LEVEL 05

04.2 - B1 - MF - ARCHITECTURAL

MF - A1.0	FLOOR PLAN - LEVEL 00
MF - A1.1A	FLOOR PLAN - LEVEL 01 PARKING
MF - A1.1B	FLOOR PLAN - LEVEL 01
MF - A1.2	FLOOR PLAN - LEVEL 02
MF - A1.3	FLOOR PLAN - LEVEL 03
MF - A1.4	FLOOR PLAN - LEVEL 04
MF - A1.5	FLOOR PLAN - LEVEL 05
MF - A1.6	FLOOR PLAN - ROOF LEVEL

MF - A2.0	REFLECTED CEILING PLAN - LEVEL 00
MF - A2.1	REFLECTED CEILING PLAN - LEVEL 01
MF - A2.2	REFLECTED CEILING PLAN - LEVEL 02-05
MF - A3.1	BUILDING ELEVATIONS
MF - A3.2	BUILDING ELEVATIONS
MF - A3.3	BUILDING ELEVATIONS
MF - A3.4	BUILDING ELEVATIONS
MF - A3.5	AXONOMETRIC VIEWS
MF - A4.1	BUILDING SECTIONS
MF - A4.2	BUILDING SECTIONS
MF - A4.3	WALL SECTIONS
MF - A4.4	WALL SECTIONS
MF - A4.5	WALL SECTIONS
MF - A4.6	DETAILS
MF - A4.7	DETAILS
MF - A4.8	DETAILS
MF - A4.9	DETAILS
MF - A4.10	TYPICAL DETAILS
MF - A4.11	TYPICAL DETAILS
MF - A5.1	ENLARGED STAIR PLANS AND SECTIONS
MF - A5.2	DETAILS - STAIRS
MF - A5.3	DETAILS - STAIRS
MF - A5.4	ENLARGED ELEVATOR PLAN AND HOISTWAY
MF - A5.5	DETAILS - ELEVATOR
MF - A6.1	DOOR SCHEDULES AND ELEVATIONS
MF - A6.2	WINDOW ELEVATIONS
MF - A6.3	DETAILS - WINDOW ASSEMBLIES
MF - A6.4	DETAILS - WINDOW ASSEMBLIES
MF - A6.5	STOREFRONT ELEVATIONS
MF - A6.6	DETAILS - STOREFRONT ASSEMBLIES
MF - A7.0	OVERALL FINISH FLOOR PLAN 00
MF - A7.1	OVERALL FINISH FLOOR PLAN - LEVEL 01
MF - A7.2	OVERALL FINISH FLOOR PLAN - LEVELS 02 - 05
MF - A7.3	ENLARGED PLAN & INTERIOR ELEVATIONS - COMMUNITY ROOM
MF - A7.4	ENLARGED PLAN & RCP - ENTRIES AND AMENITY ROOM
MF - A7.5	FINISH PLAN AND ELEVATIONS - ENTRIES AND AMENITY ROOM
MF - A7.6	ENLARGED PLAN & INTERIOR ELEVATIONS - FITNESS ROOM
MF - A7.7	ENLARGED PLANS AND ELEVATIONS - UNIT A
MF - A7.8	ENLARGED PLANS AND ELEVATIONS - UNIT B
MF - A7.9	ENLARGED PLANS AND ELEVATIONS - UNIT C
MF - A7.10	ENLARGED PLANS AND ELEVATIONS - UNIT D
MF - A7.11	ENLARGED PLANS AND ELEVATIONS - UNIT E
MF - A7.12	ENLARGED PLANS AND ELEVATIONS - UNIT F

MF - A7.13	ENLARGED PLANS AND ELEVATIONS - UNIT G
MF - A7.14	ENLARGED PLANS AND ELEVATIONS - UNIT H
MF - A7.15	ENLARGED PLANS AND ELEVATIONS - UNIT J
MF - A7.16	ENLARGED PLANS AND ELEVATIONS - ADA UNIT 103
MF - A7.17	ENLARGED PLANS AND ELEVATIONS - ADA UNIT 208
MF - A7.18	ENLARGED PLANS AND ELEVATIONS - ADA UNIT 311
MF - A7.19	GAZEBO DETAILS

04.3 - B1 - MF - STRUCTURAL

MF.S1.100	STRUCTURAL NOTES
MF.S1.101	FOUNDATION PLAN
MF.S1.102	LEVEL 01 - FLOOR FRAMING PLAN
MF.S1.103	LEVEL 02 - FLOOR FRAMING PLAN / LOWER ROOF
MF.S1.104	LEVEL 03 - FLOOR FRAMING PLAN
MF.S1.105	LEVEL 04 - FLOOR FRAMING PLAN
MF.S1.106	LEVEL 05 - LOW ROOF FRAMING PLAN
MF.S1.107	UPPER ROOF FRAMING PLAN
MF.S2.100	STRUCTURAL DETAILS
MF.S2.101	STRUCTURAL DETAILS
MF.S2.102	STRUCTURAL DETAILS
MF.S2.103	STRUCTURAL DETAILS
MF.S2.104	STRUCTURAL DETAILS

04.4 - B1 - MF - MECHANICAL

MF - M1.0	BLDG 1A - LEVEL 00 (PARKING) - HVAC
MF - M1.1	BLDG 1A - LEVEL 01 (LOBBY) - HVAC
MF - M1.2	BLDG 1A - LEVEL 02 - HVAC
MF - M1.3	BLDG 1A - LEVEL 03 - HVAC
MF - M1.4	BLDG 1A - LEVEL 04 - HVAC
MF - M1.5	BLDG 1A - LEVEL 05 - HVAC
MF - M1.6	BLDG 1A - ROOF - HVAC
MF - M2.0	SCHEDULES & DETAILS - HVAC
MF - M2.1	DETAILS - HVAC

04.5 - B1 - MF - PLUMBING

MF - P1.0	BLDG 1A - LEVEL 00 - UNDERGROUND PLUMBING
MF - P1.1	BLDG 1A - LEVEL 00 - WASTE AND VENT
MF - P1.2	BLDG 1A - LEVEL 01 - WASTE & VENT
MF - P1.3	BLDG 1A - LEVEL 02 - WASTE & VENT
MF - P1.4	BLDG 1A - LEVEL 03 - WASTE & VENT
MF - P1.5	BLDG 1A - LEVEL 04 - WASTE & VENT
MF - P1.6	BLDG 1A - LEVEL 05 - WASTE & VENT

MF - P2.1	BLDG 1A - LEVEL 00 - SERVICES
MF - P2.2	BLDG 1A - LEVEL 01 - SERVICES
MF - P2.3	BLDG 1A - LEVEL 02 - SERVICES
MF - P2.4	BLDG 1A - LEVEL 03 - SERVICES
MF - P2.5	BLDG 1A - LEVEL 04 - SERVICES
MF - P2.6	BLDG 1A - LEVEL 05 - SERVICES
MF - P3.1	LEGEND, SCHEDULES & DETAILS - PLUMBING
MF - P3.2	FIRE STOPPING DETAILS
MF - P4.1	RISER DIAGRAMS
MF - P4.2	RISER DIAGRAMS
MF - P4.3	RISER DIAGRAMS
MF - P4.4	RISER DIAGRAMS

04.6 - B1 - MF - FIRE PROTECTION

MF - FP1.1	BLDG 1A - LEVEL 00 - FIRE PROTECTION
MF - FP1.2	BLDG 1A - LEVEL 01 - FIRE PROTECTION
MF - FP1.3	BLDG 1A - LEVEL 02 - FIRE PROTECTION
MF - FP1.4	BLDG 1A - LEVEL 03 - FIRE PROTECTION
MF - FP1.5	BLDG 1A - LEVEL 04 - FIRE PROTECTION
MF - FP1.6	BLDG 1A - LEVEL 05 - FIRE PROTECTION
MF - FP2.1	CALCS AND DETAILS - FIRE PROTECTION
MF - FP2.2	DETAILS - FIRE PROTECTION
MF - FP2.3	FIRE STOPPING DETAILS

04.7 - B1 - MF - ELECTRICAL

MF-E0.1	SITE PLAN - ELECTRICAL
MF-E0.2	SITE PLAN – LIGHTING CALCULATIONS
MF-E1.0	BLDG 1A - LEVEL 00 - LIGHTING
MF-E1.1	BLDG 1A - LEVEL 01 - LIGHTING
MF-E1.2	BLDG 1A - LEVEL 02 - LIGHTING
MF-E1.3	BLDG 1A - LEVEL 03 - LIGHTING
MF-E1.4	BLDG 1A - LEVEL 04 - LIGHTING
MF-E1.5	BLDG 1A - LEVEL 05 - LIGHTING
MF-E2.0	BLDG-1A - LEVEL 00 - POWER
MF-E2.1	BLDG 1A - LEVEL 01 - POWER
MF-E2.2	BLDG 1A - LEVEL 02 - POWER
MF-E2.3	BLDG 1A - LEVEL 03 - POWER
MF-E2.4	BLDG 1A - LEVEL 04 - POWER
MF-E2.5	BLDG 1A - LEVEL 05 - POWER
MF-E2.6	BLDG 1A - ROOF LEVEL - POWER
MF-E3.0	BLDG 1A - LEVEL 00 - COMMUNICATIONS
MF-E3.1	BLDG 1A - LEVEL 01 - COMMUNICATIONS

MF-E3.2	BLDG 1A - LEVEL 02 - COMMUNICATIONS
MF-E3.3	BLDG 1A - LEVEL 03 - COMMUNICATIONS
MF-E3.4	BLDG 1A - LEVEL 04 - COMMUNICATIONS
MF-E3.5	BLDG 1A - LEVEL 05 - COMMUNICATIONS
MF-E4.0	LEGEND_ SCHEDULES_ DETAILS
MF-E4.1	ELECTRICAL DETAILS
MF-E4.2	PANELBOARDS
MF-E4.3	PANELBOARDS
MF-E4.4	PANELBOARDS
MF-E4.5	PANELBOARDS
MF-E4.6	PANELBOARDS
MF-E4.7	PANELBOARDS
MF-E4.8	FEEDER RISER DIAGRAM

06.0 - B2 - TH - LIFE SAFETY

TH2.LS1.0	BUILDING 2 - LIFE SAFETY PLANS
TH2.LS1.1	BUILDING 2 - ACCESSIBILITY INFORMATION

06.1 - B2 - TH - ARCHITECTURAL

TH2.A1.1	BUILDING 2 - FIRST FLOOR PLAN
TH2.A1.2	BUILDING 2 - SECOND FLOOR PLAN
TH2.A1.3	BUILDING 2 - THIRD FLOOR PLAN
TH2.A2.1	BUILDING 2 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES
TH2.A3.1	BUILDING 2 - EXTERIOR ELEVATIONS
TH2.A3.2	BUILDING 2 - 3D VIEWS
TH2.A4.1	BUILDING 2 - BUILDING SECTIONS
TH2.A4.2	BUILDING 2 - WALL SECTIONS
TH2.A4.3	BUILDING 2 - WALL SECTIONS
TH2.A4.4	BUILDING 2 - WALL SECTIONS

06.2 - B2 - TH - STRUCTURAL

TH2.S1.1	BUILDING 2 - STRUCTURAL PLANS
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06.3 - B2 - TH - MECHANICAL

TH2.M1.1	BUILDING 2 - FIRST FLOOR PLAN -HVAC
TH2.M1.2	BUILDING 2 - SECOND FLOOR PLAN - HVAC
TH2.M1.3	BUILDING 2 - THIRD FLOOR PLAN - HVAC
TH2.M1.4	BUILDING 2 - ROOF PLAN - HVAC

06.4 - B2 - TH - PLUMBING

TH2.P1.1	BUILDING 2 - FIRST FLOOR PLAN - PLUMBING
----------	--

06.5 - B2 - TH - FIRE PROTECTION

TH2.FP1.1 BUILDING 2 - FLOOR PLANS - FIRE PROTECTION

06.6 - B2 - TH - ELECTRICAL

TH2.E1.1 BUILDING 2 - FIRST FLOOR PLAN - ELECTRICAL
TH2.E1.2 BUILDING 2 - SECOND FLOOR PLAN - ELECTRICAL
TH2.E1.3 BUILDING 2 - THIRD FLOOR PLAN - ELECTRICAL

07.0 - B3 - TH - LIFE SAFETY

TH3.LS1.0 BUILDING 3 - LIFE SAFETY PLANS

07.1 - B3 - TH - ARCHITECTURAL

TH3.A1.1 BUILDING 3 - FIRST FLOOR PLAN
TH3.A1.2 BUILDING 3 - SECOND FLOOR PLAN
TH3.A2.1 BUILDING 3 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES
TH3.A3.1 BUILDING 3 - EXTERIOR ELEVATIONS
TH3.A3.2 BUILDING 3 - 3D VIEWS
TH3.A4.1 BUILDING 3 - BUILDING SECTIONS
TH3.A4.2 BUILDING 3 - WALL SECTIONS
TH3.A4.3 BUILDING 3 - WALL SECTIONS
TH3.A4.5 BUILDING 3 - WALL SECTIONS
TH3.A4.6 BUILDING 3 - WALL SECTIONS

07.2 - B3 - TH - STRUCTURAL

TH3.S1.1 BLDG.3 STRUCTURAL PLANS

07.3 - B3 - TH - MECHANICAL

TH3.M1.1 BUILDING 3 - FIRST FLOOR PLAN - HVAC
TH3.M1.2 BUILDING 3 - SECOND FLOOR PLAN - HVAC
TH3.M1.3 BUILDING 3 - ROOF PLAN - HVAC

07.4 - B3 - TH - PLUMBING

TH3.P1.1 BUILDING 3 - FLOOR PLANS - PLUMBING

07.5 - B3 - TH - FIRE PROTECTION

TH3.FP1.1 BUILDING 3 - FLOOR PLANS - FIRE PROTECTION

07.6 - B3 - TH - ELECTRICAL

TH3.E1.1 BUILDING 3 - FIRST FLOOR PLAN - LIGHTING & COMMUNICATIONS
TH3.E1.2 BUILDING 3 - FIRST FLOOR PLAN - POWER
TH3.E1.3 BUILDING 3 - SECOND FLOOR PLAN - LIGHTING & COMMUNICATIONS

TH3.E1.4 BUILDING 3 - SECOND FLOOR PLAN - POWER

08.0 - B4 - TH - LIFE SAFETY

TH4.LS1.0 BUILDING 4 - LIFE SAFETY PLANS

TH4.LS1.1 BUILDING 4 - ACCESSIBILITY INFORMATION

08.1 - B4 - TH - ARCHITECTURAL

TH4.A1.1 BUILDING 4 - FIRST FLOOR PLAN

TH4.A1.2 BUILDING 4 - SECOND FLOOR PLAN

TH4.A1.3 BUILDING 4 - THIRD FLOOR PLAN

TH4.A2.1 BUILDING 4 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES

TH4.A3.1 BUILDING 4 - EXTERIOR ELEVATIONS

TH4.A3.2 BUILDING 4 - 3D VIEWS

TH4.A4.1 BUILDING 4 - BUILDING SECTIONS

TH4.A4.2 BUILDING 4 - WALL SECTIONS

TH4.A4.3 BUILDING 4 - WALL SECTIONS

TH4.A4.4 BUILDING 4 - WALL SECTIONS

08.2 - B4 - TH - STRUCTURAL

TH4.S1.1 BLDG. 4 STRUCTURAL PLANS

TH4.S1.2 BLDG. 4 STRUCTURAL PLANS

08.3 - B4 - TH - MECHANICAL

TH4.M1.1 BUILDING 4 - FIRST FLOOR PLAN - HVAC

TH4.M1.2 BUILDING 4 - SECOND FLOOR PLAN - HVAC

TH4.M1.3 BUILDING 4 - THIRD FLOOR PLAN - HVAC

TH4.M1.4 BUILDING 4 - ROOF PLAN - HVAC

08.4 - B4 - TH - PLUMBING

TH4.P1.1 BUILDING 4 - FLOOR PLANS - PLUMBING

08.5 - B4 - TH - FIRE PROTECTION

TH4.FP1.1 BUILDING 4 - FLOOR PLANS - FIRE PROTECTION

08.6 - B4 - TH - ELECTRICAL

TH4.E1.1 BUILDING 4 - FIRST FLOOR PLAN - LIGHTING & COMMUNICATIONS

TH4.E1.2 BUILDING 4 - FIRST FLOOR PLAN - POWER

TH4.E1.3 BUILDING 4 - SECOND FLOOR PLAN - LIGHTING & COMMUNICATIONS

TH4.E1.4 BUILDING 4 - SECOND FLOOR PLAN - POWER

TH4.E1.5 BUILDING 4 - THIRD FLOOR PLAN - LIGHTING & COMMUNICATIONS

TH4.E1.6 BUILDING 4 - THIRD FLOOR PLAN - POWER

09.0 - B5 - TH - LIFE SAFETY

TH5.LS1.0 BUILDING 5 - LIFE SAFETY PLANS

09.1 - B5 - TH - ARCHITECTURAL

TH5.A1.1 BUILDING 5 - FIRST FLOOR PLAN
TH5.A1.2 BUILDING 5 - SECOND FLOOR PLAN
TH5.A2.1 BUILDING 5 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES
TH5.A3.1 BUILDING 5 - EXTERIOR ELEVATIONS
TH5.A3.2 BUILDING 5 - 3D VIEWS
TH5.A4.1 BUILDING 5 - BUILDING SECTIONS
TH5.A4.2 BUILDING 5 - WALL SECTIONS
TH5.A4.3 BUILDING 5 - WALL SECTIONS
TH5.A4.4 BUILDING 5 - WALL SECTIONS

09.2 - B5 - TH - STRUCTURAL

TH5.S1.1 BUILDING 5 - STRUCTURAL PLANS

09.3 - B5 - TH - MECHANICAL

TH5.M1.1 BUILDING 5 - FIRST FLOOR PLAN - HVAC
TH5.M1.2 BUILDING 5 - SECOND FLOOR PLAN - HVAC
TH5.M1.3 BUILDING 5 - ROOF PLAN - HVAC

09.4 - B5 - TH - PLUMBING

TH5.P1.1 BUILDING 5 - FLOOR PLANS - PLUMBING

09.5 - B5 - TH - FIRE PROTECTION

TH5.FP1.1 BUILDING 5 - FLOOR PLANS - FIRE PROTECTION

09.6 - B5 - TH - ELECTRICAL

TH5.E1.1 FIRST FLOOR PLAN - ELECTRICAL
TH5.E1.2 SECOND FLOOR PLAN - ELECTRICAL

10.0 - B6 - TH - LIFE SAFETY

TH6.LS1.0 BUILDING 6 - LIFE SAFETY PLANS

10.1 - B6 - TH - ARCHITECTURAL

TH6.A1.1 BUILDING 6 - FIRST FLOOR PLAN
TH6.A1.2 BUILDING 6 - SECOND & THIRD FLOOR PLAN
TH6.A2.1 BUILDING 6 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES
TH6.A3.1 BUILDING 6 - EXTERIOR ELEVATIONS
TH6.A3.2 BUILDING 6 - 3D VIEWS

TH6.A4.1 BUILDING 6 - BUILDING SECTIONS

TH6.A4.2 BUILDING 6 - WALL SECTIONS

TH6.A4.3 BUILDING 6 - WALL SECTIONS

TH6.A4.4 BUILDING 6 - WALL SECTIONS

TH6.A4.5 BUILDING 6 - WALL SECTIONS

10.2 - B6 - TH - STRUCTURAL

TH6.S1.1 BUILDING 6 - STRUCTURAL PLANS

10.3 - B6 - TH - MECHANICAL

TH6.M1.1 BUILDING 6 - FIRST FLOOR PLAN - HVAC

TH6.M1.2 BUILDING 6 - SECOND FLOOR PLAN - HVAC

TH6.M1.3 BUILDING 6 - THIRD FLOOR PLAN - HVAC

TH6.M1.4 BUILDING 6 - ROOF PLAN - HVAC

10.4 - B6 - TH - PLUMBING

TH6.P1.1 BUILDING 6 - FLOOR PLANS - PLUMBING

10.5 - B6 - TH - FIRE PROTECTION

TH6.FP1.1 BUILDING 6 - FLOOR PLANS - FIRE PROTECTION

10.6 - B6 - TH - ELECTRICAL

TH6.E1.1 FIRST FLOOR PLAN - ELECTRICAL

TH6.E1.2 SECOND FLOOR PLAN - ELECTRICAL

TH6.E1.3 THIRD FLOOR PLAN - ELECTRICAL

11.0 - B7 - TH - LIFE SAFETY

TH7.LS1.0 BUILDING 7 - LIFE SAFETY PLANS

11.1 - B7 - TH - ARCHITECTURAL

TH7.A1.1 BUILDING 7 - FIRST FLOOR PLAN

TH7.A1.2 BUILDING 7 - SECOND & THIRD FLOOR PLAN

TH7.A2.1 BUILDING 7 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES

TH7.A3.1 BUILDING 7 - EXTERIOR ELEVATIONS

TH7.A3.2 BUILDING 7 - 3D VIEWS

TH7.A4.1 BUILDING 7 - BUILDING SECTIONS

TH7.A4.2 BUILDING 7 - WALL SECTIONS

TH7.A4.3 BUILDING 7 - WALL SECTIONS

TH7.A4.4 BUILDING 7 - WALL SECTIONS

11.2 - B7 - TH - STRUCTURAL

TH7.S1.1 BUILDING 7 - STRUCTURAL PLANS

11.3 - B7 - TH - MECHANICAL

TH7.M1.1	BUILDING 7 - FIRST FLOOR PLAN - HVAC
TH7.M1.2	BUILDING 7 - SECOND FLOOR PLAN - HVAC
TH7.M1.3	BUILDING 7 - THIRD FLOOR PLAN - HVAC
TH7.M1.4	BUILDING 7 - ROOF PLAN - HVAC

11.4 - B7 - TH - PLUMBING

TH7.P1.1	BUILDING 7 - FLOOR PLANS - PLUMBING
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11.5 - B7 - TH - FIRE PROTECTION

TH7.FP1.1	BUILDING 7 - FLOOR PLANS - FIRE PROTECTION
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11.6 - B7 - TH - ELECTRICAL

TH7.E1.1	FIRST FLOOR PLAN - ELECTRICAL
TH7.E1.2	SECOND FLOOR PLAN - ELECTRICAL
TH7.E1.3	THIRD FLOOR PLAN - ELECTRICAL

12.0 - B8 - TH - LIFE SAFETY

TH8.LS1.0	BUILDING 8 - LIFE SAFETY PLANS
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12.1 - B8 - TH - ARCHITECTURAL

TH8.A1.1	BUILDING 8 - FIRST FLOOR PLAN
TH8.A1.2	BUILDING 8 - SECOND FLOOR PLAN
TH8.A2.1	BUILDING 8 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES
TH8.A3.1	BUILDING 8 - EXTERIOR ELEVATIONS
TH8.A3.2	BUILDING 8 - 3D VIEWS
TH8.A4.1	BUILDING 8 - BUILDING SECTIONS
TH8.A4.2	BUILDING 8 - WALL SECTIONS
TH8.A4.3	BUILDING 8 - WALL SECTIONS
TH8.A4.4	BUILDING 8 - WALL SECTIONS
TH8.A4.5	BUILDING 8 - WALL SECTIONS

12.2 - B8 - TH - STRUCTURAL

TH8.S1.1	BUILDING 8 - STRUCTURAL PLANS
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12.3 - B8 - TH - MECHANICAL

TH8.M1.1	BUILDING 8 - FIRST FLOOR PLAN - HVAC
TH8.M1.2	BUILDING 8 - SECOND FLOOR PLAN - HVAC
TH8.M1.3	BUILDING 8 - ROOF PLAN - HVAC

12.4 - B8 - TH - PLUMBING

TH8.P1.1 BUILDING 8 - FLOOR PLANS - PLUMBING

12.5 - B8 - TH - FIRE PROTECTION

TH8.FP1.1 BUILDING 8 - FLOOR PLANS - FIRE PROTECTION

12.6 - B8 - TH - ELECTRICAL

TH8.E1.1 FIRST FLOOR PLAN - COMMUNICATIONS & LIGHTING

TH8.E1.2 FIRST FLOOR PLAN - POWER

TH8.E1.3 SECOND FLOOR PLAN - COMMUNICATIONS & LIGHTING

TH8.E1.4 SECOND FLOOR PLAN - POWER

13.0 - B9 - TH - LIFE SAFETY

TH9.LS1.0 BUILDING 9 - LIFE SAFETY PLANS

13.1 - B9 - TH - ARCHITECTURAL

TH9.A1.1 BUILDING 9 - FIRST FLOOR PLAN

TH9.A1.2 BUILDING 9 - SECOND & THIRD FLOOR PLAN

TH9.A2.1 BUILDING 9 - REFLECTED CEILING PLAN, ROOF PLAN & NOTES

TH9.A3.1 BUILDING 9 - EXTERIOR ELEVATIONS

TH9.A3.2 BUILDING 9 -3D VIEWS

TH9.A4.1 BUILDING 9 - BUILDING SECTIONS

TH9.A4.2 BUILDING 9 - WALL SECTIONS

TH9.A4.3 BUILDING 9 - WALL SECTIONS

TH9.A4.4 BUILDING 9 - WALL SECTIONS

13.2 - B9 - TH - STRUCTURAL

TH9.S1.1 BLDG. 9 STRUCTURAL PLANS

13.3 - B9 - TH - MECHANICAL

TH9.M1.1 BUILDING 9 - FIRST FLOOR PLAN - HVAC

TH9.M1.2 BUILDING 9 - SECOND FLOOR PLAN - HVAC

TH9.M1.3 BUILDING 9 - THIRD FLOOR PLAN - HVAC

TH9.M1.4 BUILDING 9 - ROOF PLAN - HVAC

13.4 - B9 - TH - PLUMBING

TH9.P1.1 BUILDING 9 - FLOOR PLANS - PLUMBING

13.5 - B9 - TH - FIRE PROTECTION

TH9.FP1.1 BUILDING 9 - FLOOR PLANS - FIRE PROTECTION

13.6 - B9 - TH - ELECTRICAL

TH9.E1.1 FIRST FLOOR PLAN - ELECTRICAL

TH9.E1.2 SECOND FLOOR PLAN - ELECTRICAL

TH9.E1.3 THIRD FLOOR PLAN - ELECTRICAL

14 - B2 - B9 - TH - GENERAL DETAILS

TH.G1.1	TOWNHOMES DOOR & WINDOW ELEVATIONS, DTLS., NOTES
TH.G1.2	TOWNHOMES DOOR DETAILS
TH.G1.3	TOWNHOME WINDOW DETAILS
TH.G1.4	TOWNHOME WINDOW DETAILS
TH.G1.5	TOWNHOMES WINDOW DETAILS
TH.G2.1	ENLARGED EXTERIOR STAIR PLANS
TH.G2.2	ENLARGED EXTERIOR STAIR SECTIONS AND DETAILS
TH.G2.3	ENLARGED INTERIOR EGRESS STAIR PLANS - BUILDING 2
TH.G2.4	ENLARGED INTERIOR EGRESS STAIR SECTIONS - BUILDING 2
TH.G2.5	ENLARGED INTERIOR EGRESS STAIR - BUILDING 4
TH.G2.6	ENLARGED INTERIOR EGRESS STAIR - BUILDING 5
TH.G2.7	ENLARGED INTERIOR EGRESS STAIR PLANS - BUILDING 6
TH.G2.8	ENLARGED INTERIOR EGRESS STAIR SECTIONS - BUILDING 6
TH.G2.9	ENLARGED INTERIOR EGRESS STAIR PLANS - BUILDING 7
TH.G2.10	ENLARGED INTERIOR EGRESS STAIR SECTIONS - BUILDING 7
TH.G2.11	ENLARGED INTERIOR EGRESS STAIRS - BUILDING 9
TH.G2.12	ENLARGED INTERIOR EGRESS STAIR DETAILS
TH.G2.13	ENLARGED INTERIOR STAIR PLANS -WINDERS IN TOWNHOMES 3, 4, 9
TH.G2.14	ENLARGED INTERIOR STAIR PLANS - WINDERS IN TOWNHOME 8
TH.G2.15	ENLARGED INTERIOR STAIR DETAILS
TH.G3.1	TYPICAL ROOF DETAILS
TH.G4.1	FIBER CEMENT PANEL - TYPICAL DETAILS
TH.G4.2	TYPICAL FIRE PARTITION WALL DETAILS
TH.G5.1	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - ACCESSIBLE UNIT PLAN 'J1'
TH.G5.2	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'J2'
TH.G5.3	ENLARGED FLOOR PLAN & INTERIOR ELEVATIONS - ACCESSIBLE UNIT 'K1'
TH.G5.4	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'K2'
TH.G5.5	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'L'
TH.G5.6	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'M'
TH.G5.7	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'N'
TH.G5.8	ENLARGED FLOOR PLANS INTERIOR ELEVATIONS - ACCESSIBLE UNIT 'O'
TH.G5.9	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'P'
TH.G5.10	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAME 'Q'
TH.G5.11	ENLARGED UNIT FLOOR PLANS & INTERIOR ELEVATIONS - UNIT NAMES 'R' AND 'S'
TH.G5.12	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - UNIT TYPE 'T'
TH.G5.13	ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS - TYPE 'U'
TH.G6.1	DUMPSTER ENCLOSURE DETAILS

15 - TH GENERAL STRUCTURAL

TH.S1.0	STRUCTURAL NOTES
TH.S2.1	STRUCTURAL DETAILS

16 - TH GENERAL MECHANICAL

THM.M2.1	SCHEDULES - HVAC
THM.M2.2	DETAILS - HVAC

17 - TH GENERAL PLUMBING

THP.P2.1	PLUMBING SCHEDULES AND DETAILS
THP.P3.1	PLUMBING RISERS
THP.P3.2	PLUMBING RISERS
THP.P3.3	PLUMBING RISERS

18 - TH GENERAL FP

THFP.FP2.1	FIRE PROTECTION DETAILS
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19 - TH GENERAL ELECTRICAL

THE.E1.1	SITE PLAN - LIGHTING
THE.E2.1	LEGEND
THE.E2.2	DETAILS
THE.E2.3	BUILDING 2 PANELBOARDS & FEEDER DIAGRAM
THE.E2.4	BUILDING 3 PANELBOARDS & FEEDER DIAGRAM
THE.E2.5	BUILDING 4 PANELBOARDS & FEEDER DIAGRAM
THE.E2.6	BUILDING 4 PANELBOARDS & FEEDER DIAGRAM
THE.E2.7	BUILDING 5 PANELBOARDS & FEEDER DIAGRAM
THE.E2.8	BUILDING 6 PANELBOARDS & FEEDER DIAGRAM
THE.E2.9	BUILDING 7 PANELBOARDS & FEEDER DIAGRAM
THE.E2.10	BUILDING 8 PANELBOARDS & FEEDER DIAGRAM
THE.E2.11	BUILDING 9 PANELBOARDS & FEEDER DIAGRAM

SUBSTITUTION REQUEST

TO: _____

PROJECT: "A New Multi-Family Development for: Knoxville's Community Development Corporation
Austin Homes Redevelopment – Phase 1A"

SPECIFIED ITEM:

Section	Page	Paragraph	Description
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The undersigned request consideration of the following:

PROPOSED SUBSTITUTION: _____

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The undersigned certifies that the following statements, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on Drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

Submitted by: _____ For use by the A/E: _____

Signature: _____

Firm: _____ Approved _____ Approved as noted _____

Address: _____ Not Approved _____ Received too late _____

By: _____

Date: _____ Date: _____

Telephone: _____ Remarks: _____

Attachments

SECTION 01 23 00 – ALTERNATES

PART I - GENERAL

1.01 GENERAL:

Each bidder shall submit a proposal of the following described alternates in the space provided on the Bid Form. The work under the alternates shall conform to all applicable provisions of the drawings and specifications, except as specifically noted otherwise. The amounts quoted for alternates shall include the cost of all incidental omissions, additions, adjustments required because of each change, and the modification and/or removal of existing items as necessary for the new work. All items not specifically identified as alternate items shall be included in the Base Bid.

1.02 ALTERNATE “1” – CONCRETE WALL FINISHING AT PARKING GARAGE:

Description: If **Alternate ‘1’** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Standard Brushed Concrete Finish at base of Parking Garage in lieu of the 6” Board Formed Concrete Base.***

1.03 ALTERNATE “2” – EXTERIOR WALL VENEER:

Description: If **Alternate ‘2’** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Swisspearl on all buildings in lieu of ‘Equitone Fiber Cement Panel’ as called out in Construction Documents and section 07 46 46 – Fiber Cement Siding; www.swisspearl.com; 1-636-698-4976***

1.04 ALTERNATE ‘3’ – EXTERIOR WALL VENEER:

Description: If **Alternate ‘3’** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***American Fiber Cement Corporation ‘AFCC’ - Cembrit Patina on all buildings in lieu of ‘Equitone Fiber Cement Panel’ as called out in Construction Documents and section 07 46 46 – Fiber Cement Siding; www.americanfibercement.com ; 1-800-688-8677.***

1.05 ALTERNATE ‘4’ – ENTRY EXTERIOR DOORS

Description: If **Alternate ‘4’** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Hollow Metal Doors in lieu of Pre-Hung Fiberglass Exterior doors as called out in the Construction Documents and Specification Section 08 16 13. Refer to specification section 08 11 13 for hollow metal frames and doors. Hollow Metal Doors and Frames to be painted as part of Alternate.***

1.07 ALTERNATE '5' – FIRE PROTECTION

Description: If **Alternate '5'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Cementitious Spray Fire-Protection in lieu of Intumescent Fire Protection as called out in the Construction Documents and specification section 07 81 23 – Intumescent Fire Protection. Cementitious Spray Fire Protection to meet the same rating and STC requirements. Refer to 07 81 00 – Applied Fireproofing for requirements.***

1.08 ALTERNATE '6' – VAPOR BARRIER

Description: If **Alternate '6'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Black or dark colored paper vapor barrier in lieu of fluid applied vapor barrier for Townhome Buildings 2-9 only. Refer to revised specification section 07 25 00 – Weather Barriers for approved alternate material.***

1.09 ALTERNATE '7' – INTERIOR UNIT DOORS:

Description: If **Alternate '7'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Interior Pre-Hung Hollow Core Wood Doors in lieu of Stile and Rail Wood Interior Doors as called out as interior unit doors in the Construction Documents and Specification Section 08 14 33. Refer to added specification section for pre-hung hollow core wood doors.***

1.10 ALTERNATE '8' – WINDOW TREATMENT:

Description: If **Alternate '8'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Composite Blinds in lieu of Faux Wood Blinds, per Finish Schedule & Legend.***

1.11 ALTERNATE '9' – RUBBER BASE:

Description: If **Alternate '9'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Johnsonite / Tarkett 'Standard Profile' vinyl base 'VB-1' in lieu of 'Perceptions Flex Profile', as indicated as RB-1 in Finish Schedule.***

1.12 ALTERNATE '10' – CABINETS:

Description: If **Alternate '10'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: ***Merillat Cabinets; Collection Series; "CAB-1" standard stained finish and "CAB-2" standard painted finish, in lieu of Echelon Cabinets as indicated in Construction Drawings and specification section 06 41 00 – Architectural Wood Casework. www.merillat.com; 1-866-850-8557***

1.13 ALTERNATE '11' – CABINETS:

Description: If **Alternate '11'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: **Master Woodcraft Cabinetry; Solid Wood Veneer Collection, "Roma" Series; "CAB-1" standard stained finish and "CAB-2" standard painted finish, in lieu of Echelon Cabinets as indicated in Construction Drawings and specification section 06 41 00 – Architectural Wood Casework.**
www.mwccabinetry.com ; 1-903-935-0500

1.14 ALTERNATE '12' – COUNTERTOPS:

Description: If **Alternate '12'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: **3cm Granite in lieu of Quartz Kitchen Countertops, as indicated in the Construction Documents at TOP-1. Refer to added specification section 12 36 40 – Granite Countertops for requirements.**

1.15 ALTERNATE '13' – LVL FLOORING:

Description: If **Alternate '13'** is accepted, the Contractor shall provide all material, equipment, labor and supervision necessary to construct / install: **'LVT-2' with acoustical underlayment in all units of Townhomes in lieu of, as indicated as 'LVT-1' in Finish Schedule.**

End of Section

SECTION 06 15 00
LUMBER FRAMING AND FINISH CARPENTRY (LANDSCAPE)

PART 1 - GENERAL

1.01 SUMMARY

- A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section

1.02 DESCRIPTION OF WORK

- A. Work includes installation of 6' height privacy screen fences at the townhomes as shown in the plan. Work also includes the installation of an 8' height privacy screen fence along the property line adjacent to the alley.
- B. Drawings identify design intent for layout, grades and elevations, appearance and finishes. Request guidance and direction where appropriate and/or necessary.

1.03 REFERENCES

- A. AFPA, American Forest & Paper Association
 - i. Prescriptive Residential Wood Deck Construction Guide (PRWDCG), 2010:
<http://www.awc.org/publications/dca/dca6/dca6-09.pdf>
- B. International Code Council (ICC)
 - a. IRC, 2012 International Residential Code for One and Two-Family Dwellings (IRC):
 - b. IBC, 2012 International Building Code (IBC)
- C. AWWA, American Wood Protection Association: Book of Standards
 - a. P17 - Fire Retardant Formulations.
 - b. P23 - Standard for Chromated Copper Arsenate Type C (CCA-C).
 - c. P50 Standard for Fire Retardant FR-2 (FR-2).
 - d. T1 - Use Category System: Processing and Treatment Standard.
 - e. U1 - Use Category System: User Specification for Treated Wood.
- D. AWQS: Architectural Woodwork Quality Standards, 1973-2005 by the American Woodwork Institute
- E. ALSC: American Lumber Standard Committee: Grade Rules Writing Organizations
- F. ASTM International, standards as applicable
- G. D3201 Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products.
- H. D5516 Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures.

- I. D5664 Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber.
- J. D6305 Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire retardant Treated Plywood Roof Sheathing.
- K. E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- L. D1238 – Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.
- M. D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- N. D638 Standard Test Method for Tensile Properties of Plastics
- O. D256 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- P. D648 Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.

- Q. FSC: Forest Stewardship Council: <http://ic.fsc.org/about-us.1.htm>

- R. National Fire Protection Association (NFPA) 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

- S. Southern Pine Council (SPC) - Permanent Wood Foundations - Design and Construction Guide.

- T. Underwriters Laboratories, Inc. (UL) 723 - Tests for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

- A. Submittals shall be made in accordance with Division 01 SUBMITTAL PROCEDURES.
- B. Submit the following:
- C. Framing Plan, showing layout and elevations of posts location of all connections and fasteners, dimensions and materials conforming to design intent. Describe the placement of Western Red Cedar wood members and connections required to fulfill the design intent in accordance with all applicable codes and standards.
- D. Manufacturer's product literature for hardware and fasteners with written certification these materials are sized for loads and spans.
- E. Written certification for lumber meets the requirements of this Section.
- F. Fire-Retardant Treatment Certification: Treatment plant's certification of compliance with specified requirements.
- G. Western Red Cedar lumber manufacturer information.

1.05 QUALITY ASSURANCE:

- A. Wood Treatment Plant Qualifications:
- B. Minimum 5 years experience in work of this Section.
- C. Licensed by wood treatment manufacturer.

- D. Obtain treated wood products from single source.

- E. Mark each piece of lumber indicating compliance with specified requirements.

F. Provide fire retardant treatment complying with following:

- a. ICC IBC.
- b. ICC IRC.
- c. ICC Evaluation Report 2645.

G. Independent Third Party Inspection: Provide inspections of wood treatment plant.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Prevent damage of all kinds. Do not deliver finish carpentry materials until all other operations that could damage or stain wood are complete. Protect lumber against moisture by all means necessary.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Wood: Nominal Sizes are indicated, except as shown by detailed dimensions.
2. Provide Western Red Cedar lumber for finished carpentry..
3. Moisture Content of Softwood Lumber: Provide kiln-dried (KD) lumber having a moisture content from time of manufacture until time of installation not greater than values requires by the applicable grading rules of the respective grading and inspecting agency for species indicated.
4. Lumber: Identified by grade mark of, or certificate of inspection issued by an approved lumber grading or inspection bureau or agency www.alsc.org.
5. Structural members hidden from view: pressure-impregnated flame retardant treated Southern Yellow Pine with an approved process meeting the following requirements:
6. Southern yellow pine shall be pressure impregnated with chemicals during manufacture to achieve a flame spread classification of 25 or less for a time period of 10 minutes and shall show no evidence of significant progressive combustion when testing is continued for an additional period of 20 minutes. In addition, the flame front shall not progress more than 10.5 feet beyond the center line of the burners at any time when tested in accordance with ASTM E 84 in accordance with BIBC Section 2303 and IRC Section R802.1.3)
7. Fire retardant treated lumber shall be properly labeled to include the identification mark of an approved agency, treating manufacturer, name of fire-retardant treatment, wood species, flame spread and smoke developed rating, method of drying after treatment and conformance with ASTM Standards in accordance with IBC Section 2302.2.1 and IRC Section R802.1.3.1.
8. Fire-retardant treated Southern Yellow Pine shall be identified as 'Exterior' indicating there is no increase in the listed classification when subject to ASTM D 2898 Standard Rain Test in accordance with IBC 2303.2.1; IBC 2303.2.3 and IRC R802.1.3.3
9. Fire-retardant treated Southern Yellow Pine lumber shall meet the requirements of ASTM D 5664. At the request of the Landscape Architect provide manufacturer's published modification factors for service at temperatures of not less than 80o F.
10. Prior to use, fire-retardant treated Southern Yellow Pine lumber shall be dried to a moisture content of 19 percent or less. Wood kiln dried after treatment (DAT) shall not exceed the kiln or drying temperatures used previously to dry the lumber.

11. All boards as shown on the Plans and Detailed Drawings and all materials above and concealing the Southern Yellow Pine shall be considered exterior finish carpentry.
12. Exterior Finish Carpentry shall be rough sawn Western Red Cedar Square Edge Boards

2.02 FASTENERS, CONNECTORS AND HARDWARE

- A. Fasteners and Anchorages for Exterior Finished Carpentry: Provide 304 or 316 stainless steel nails, screws and other anchoring devices of the proper type, size, material and finish for application indicated to provide secure attachment, concealed where possible, and complying with applicable Federal Specifications.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Establish accurate lines, levels and pattern.
- B. Finished elevations are shown on the Plans and Elevations.
- C. Establish starting point and finished elevations of the wood surfaces. Utilize standard survey equipment or laser leveling devices to establish finished deck elevations. Take all measurements required to accurately define deck areas in both horizontal and vertical planes.

3.02 PREPARATION

- A. Establish accurate lines, levels and pattern.
- B. Finished elevations are shown on the Elevations and Sections.
- C. Establish starting point and finished elevations of the wood deck surfaces. Utilize standard survey equipment or laser leveling devices to establish finished deck elevations. Take all measurements required to accurately define deck areas in both horizontal and vertical planes.

3.03 INSTALLATION

- A. Install all lumber and finished surface wood in accordance with all building code requirements.
- B. Cut, drill and rout wood using carbide tipped blades.
- C. Pre-drill fastener holes located closer than 1 inch from edge.
- D. Cut ends square and true.
- E. Do not exceed maximum spans recommended by industry standards.
- F. Place boards perpendicular or diagonal to supports, according to Contract documents.
- G. Leave expansion spaces between abutting boards, and between boards and adjacent construction.

- a. Use shim segments as necessary to adjust the elevation to accommodate slight variations in wood dimensioning.
- H. End gaps between boards: 1/8 inch at ambient temperatures of 60 degrees F and above and 3/16 inch at ambient temperatures below 60 degrees F.
- I. Side gaps between boards: 1/4 inch at ambient temperatures of 60 degrees F and above and 3/8 inch at ambient temperatures below 60 degrees F.
- J. Gaps between boards and adjacent construction: 1/4 inch at ambient temperatures of 60 degrees F and above and 1/2 inch at ambient temperatures below 60 degrees F.
- K. Place each end of each board on support.
- L. Fasten each board using stainless steel star tamper proof screws. Align all screws to joists in straight lines for aesthetic reasons. Note, straight joists must be maintained during framing to ensure that screws will be evenly spaced along joists in a perpendicular arrangement.
- M. Make all adjustments necessary during the installation of the beam and galvanized steel saddle anchor to insure precise top of deck elevations. Confirm elevations frequently and consistently.
- N. Install all post plumb. Install of horizontal members level and true.

3.04 FIELD QUALITY CONTROL

- A. Inspect often during installation to assure that boards are level and not rocking.

3.05 POSTS

- A. Install posts plumb and at spacing as noted in the details.
- B. Install Simpson Strong Tie components with galvanized or stainless steel SDS screws.

3.06 INSTALLATION OF EXTERIOR FINISHED CARPENTRY

- A. Discard wood units that are unsound, marred, cracked, loosely knotted, split, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate work with a minimum of joint or optimum jointing arrangements, or which of defective manufacture with respect to surfaces, sizes or patterns.
- B. Install the work plumb level, true and straight with no distortions. All cuts shall be clean, straight and square. Shim as required using concealing shims. Install all work to tolerance of 1/8" in 8'-0" for plumb and level conditions; and with 1/32" maximum offset in flush adjoining surfaces.
- C. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
- D. Standing and Running Trim and Fascia, Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible.
- E. Stagger joints in adjacent and related members. Cope at returns, miter at corners, to produce tight fitting joints with full surface contact throughout length of joint. Use scarf joints for end-to-end joints at intermediate joints only.
- F. Make exterior joints water-resistant by careful fitting.

- G. Anchor finished carpentry work to anchorage devices or blocking built-in or directly attached to substrate of deck joists. Secure with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nail for exposed nailing, countersunk and filled flush with finished surface, and matching final finish where transparent is indicated.

3.07 INSPECTIONS

- A. Work will be rejected as nonconforming due to substandard materials, hammer or other tool marks, dents, nailing splits, unmatched grains or patterns, uneven or over sanding.
- B. Correct nonconforming work by replacing damaged or defective materials with new, re-sand any unfinished or unsmoothed surfaces, and make repairs so they are undetectable.

END OF SECTION

SECTION 06 41 00
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Hardware.
- D. Factory finishing.
- E. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 10 00 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 12 36 00 - Countertops.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2018).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2016, with Errata (2018).
- C. BHMA A156.9 - American National Standard for Cabinet Hardware; 2015.
- D. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2016.
- E. KCMA – Kitchen Cabinet Manufacturers Association
- F. THDA – Tennessee Housing Development Agency

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide the information required by AWI/AWMAC/WI (AWS).
 - 3. Include certification program label.
- C. Product Data: Provide data for hardware accessories.
- D. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
- E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
 - 1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
 - 2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
- B. Quality Certification:

1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
2. Provide designated labels on shop drawings as required by certification program.
3. Provide designated labels on installed products as required by certification program.
4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
5. Replace, repair, or rework all work for which certification is refused.

1.07 MOCK-UP

- A. Provide mock-up of typical base cabinet, wall cabinet, and countertop, including hardware, finishes, and plumbing accessories.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.

1.09 FIELD CONDITIONS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Base Bid: Echelon Cabinetry, <http://www.echeloncabinetry.com>. Style as indicated on drawings. Finish to be chosen by Architect.

Alternate: Merillat Cabinets; Collection Series; "CAB-1" standard stained finish and "CAB-2" standard painted finish, in lieu of Echelon Cabinets as indicated in Construction Drawings and specification section 06 41 00 – Architectural Wood Casework. www.merillat.com; 1-866-850-8557

Alternate: Master Woodcraft Cabinetry; Solid Wood Veneer Collection, "Roma" Series; "CAB-1" standard stained finish and "CAB-2" standard painted finish, in lieu of Echelon Cabinets as indicated in Construction Drawings and specification section 06 41 00 – Architectural Wood Casework. www.mwccabinetry.com ; 1-903-935-0500
- B. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 CABINETS

- A. Quality Standard:
 1. Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
 2. Certification, approved and in compliance with KCMA manufacturing industry programs
- B. Wood Veneer Faced Cabinet:
 1. Exposed Surfaces: HPVA HP-1 Grade A, Ash, plain sliced, random-matched.
 2. Semi-Exposed Surfaces: HPVA HP-1 Grade B, Ash, plain sliced, random-matched.
- C. Plastic Laminate Faced Cabinets: Custom grade.
- D. Cabinets:
 1. Cabinet Design Series: As indicated on drawings.
 2. Adjustable Shelf Loading: 50 lbs. per sq. ft.
 3. Cabinet Style: As scheduled.
 4. Cabinet Doors and Drawer Fronts: Style as scheduled.

2.03 LAMINATE MATERIALS

- A. Manufacturers:

1. Wilsonart LLC: www.wilsonart.com

2.04 COUNTERTOPS

- A. Countertops are specified in Section 12 36 00.

2.05 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
 1. Manufacturers:
 - a. Franklin International, Inc; Titebond Original Wood Glue: www.titebond.com
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.

2.06 HARDWARE

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self-rests, polished chrome finish, for nominal 1 inch spacing adjustments.
- C. Fixed Americans with Disabilities Act (ADA)-Compliant Vanity and Countertop Brackets:
 1. Material: Steel.
 2. Color: Selected by Architect from manufacturer's standard range.
 3. Products:
 - a. A&M Hardware, Inc ; ADA Vanity Brackets: <http://www.aandmhardware.com>
 - b. Rakks/Rangine Corporation; ADA Compliant Rakks EHV Vanity Supports: www.rakks.com
 - c. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Fixed Specialty Vanity Brackets:
 1. Material: Steel.
 2. Finish: Manufacturer's standard, factory-applied, textured powder coat.
 3. Manufacturers:
 - a. A&M Hardware, Inc; Floating Vanity Brackets: <http://www.aandmhardware.com>
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Countertop Supports:
 1. Material: Aluminum
 2. Finish/Color: Clear anodized.
 3. Manufacturers:
 - a. Rakks/Rangine Corporation; Sill Supports: www.rakks.com
- F. Drawer and Door Pulls: per drawings.
- G. Drawer Slides:
 1. Type: Extension types as indicated.
 2. Mounting: Side mounted.
 3. Stops: Integral type.
 4. Features: Provide self -closing/stay closed type.
 5. Manufacturers:
 - a. per manufacturer's specifications.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.
- H. Drawer Systems: Integrated drawer slide and side.
 1. Side Type: Single Wall.
 2. Drawer Side Height: 3-1/2 inches.
 3. Extension Type: Extension types as indicated.

4. Static Load Capacity: Residential/Light Commercial grade.
5. Mounting: Side mounted.
6. Stops: Integral type.
7. Features: Provide self -closing/stay closed and white epoxy finish type.
- I. Hinges: European style concealed self-closing type, steel with polished finish.
- J. Soft Close Adapter: Concealed, frame-mounted, screw-adjustable damper ; steel with polished finish.
 1. Manufacturers:
 - a. Echelon Cabinets, <http://www.echeloncabinetry.com>

2.07 SITE FINISHING MATERIALS

- A. Stain, Shellac, Varnish, and Finishing Materials: In compliance with AWI/AWMAC/WI (AWS), unless noted otherwise.

2.08 FABRICATION

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

2.09 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.
- C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
 1. Opaque:
 - a. Color: As selected by Architect.
 - b. Sheen: Flat.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- F. Secure cabinets to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

**SECTION 07 25 00
WEATHER BARRIERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water-Resistive Barrier: Under exterior wall cladding, over sheathing or other substrate; not air tight or vapor retardant.
- B. Vapor Retarders: Materials to make exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls water vapor resistant and air tight.
- C. Air Barriers: Materials that form a system to stop passage of air through exterior walls, joints between exterior walls and roof, joints around frames of openings in exterior walls, and ____.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Vapor retarder under concrete slabs on grade.
- B. Section 07 24 00 - Exterior Insulation and Finish Systems: Water-resistive barrier under exterior insulation.
- C. Section 07 54 00 - Thermoplastic Membrane Roofing: Vapor retarder installed as part of roofing system.
- D. Section 07 92 00 - Joint Sealants: Sealing building expansion joints.
- E. Section 09 21 16 - Gypsum Board Assemblies: Water-resistive barrier under exterior cladding.

1.03 DEFINITIONS

- A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.
- B. Air Barrier: Air tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.
- C. Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
 - 1. Water Vapor Permeance: For purposes of conversion, $57.2 \text{ ng}/(\text{Pa s sq m}) = 1 \text{ perm}$.
- D. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture resistant, to the degree specified, intended to be installed to shed water without sealed seams.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics.
- C. Manufacturer's Installation Instructions: Indicate preparation.

1.05 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Water-Resistive Barrier: Provide on exterior walls under exterior cladding.
- B. Exterior Vapor Retarder:
 - 1. On outside surface of inside wythe of masonry cavity wall use vapor retarder coating.
 - 2. On outside surface of sheathing use vapor retarder coating.
 - 3. On under side of elevated floors over enclosed soffit space use vapor retarder coating.

2.02 WATER-RESISTIVE BARRIER MATERIALS (NEITHER AIR BARRIER OR VAPOR RETARDER)

2.03 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

- A. Air Barrier, Fluid Applied: Vapor permeable, elastomeric waterproofing.
 - 1. Air Barrier Coating:
 - a. Material: Acrylic.
 - b. Acceptable Substrates: Stated by manufacturer as suitable for installation on visibly damp surfaces and concrete that has hardened but is not full cured ("green" concrete) without requiring a primer.
 - c. Adhesion to Paper and Glass Mat Faced Sheathing: Sufficient to ensure failure due to delamination of sheathing.
 - d. Dry Film Thickness (DFT): 10 mil, 0.010 inch, minimum.
 - e. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - f. Water Vapor Permeance: 18 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure B (Water Method) at 73.4 degrees F.
 - g. Ultraviolet (UV) and Weathering Resistance: Approved in writing by manufacturer for up to six months of weather exposure after application.
 - h. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
 - i. Code Acceptance: Comply with applicable requirements of ICC-ES AC212.
 - j. Sealants, Tapes and Accessories: As recommended by coating manufacturer.
 - k. Manufacturers:
 - 1) 3M Company; ____: www.3M.com/construction/#sle.
 - 2) Master Wall, Inc; Rollershield LAB System: www.masterwall.com/#sle.
 - 3) Parex USA, Inc; Parex USA WeatherSeal Spray & Roll-on: www.parexusa.com/#sle.
 - 4) PROSOCO, Inc; R-GUARD Spray Wrap MVP: www.prosoco.com/r-guard/#sle.
 - 5) Substitutions: See Section 01 60 00 - Product Requirements.

2.04 AIR BARRIER MATERIALS (AIR AND VAPOR BARRIER)

- A. Air and Vapor Barrier Sheet, Fluid-Applied:
 - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - 2. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M Procedure A (Desiccant Method) at 73.4 degrees F.
 - 3. Water Penetration Resistance Around Nails: Pass, when tested in accordance with ASTM D1970/D1970M.
 - 4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less (Class A), when tested in accordance with ASTM E84.
 - 5. Seam and Perimeter Tape: As recommended by sheet manufacturer.
 - 6. Manufacturers:
 - a. Carlisle Coatings and Waterproofing, Inc; Fire Resist Barritech NP: www.carlisleccw.com/#sle.
 - b. Tremco Commercial Sealants & Waterproofing; ExoAir 130: www.tremcosealants.com/#sle.
 - c. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

2.06 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.
- B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.
- C. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- D. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- E. Mechanically Fastened Sheets - On Exterior:
 - 1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
 - 2. Overlap seams as recommended by manufacturer but at least 6 inches.
 - 3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches.
 - 4. Install air barrier and vapor retarder underneath the jamb flashings.
 - 5. Install head flashings under weather barrier.
 - 6. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.
- F. Coatings:
 - 1. Prepare substrate in manner recommended by coating manufacturer; treat joints in substrate and between dissimilar materials as recommended by manufacturer.
 - 2. Use flashing to seal to adjacent construction and to bridge joints.
- G. Openings and Penetrations in Exterior Weather Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 - 3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
 - 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
 - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 46 46
FIBER-CEMENT SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiber-cement siding.

1.02 RELATED REQUIREMENTS

- A. Section 05 40 00 - Cold-Formed Metal Framing: Siding substrate.
- B. Section 05 40 00 - Cold-Formed Metal Framing: Water-resistive barrier under siding.
- C. Section 06 10 00 - Rough Carpentry: Siding substrate.
- D. Section 06 10 00 - Rough Carpentry: Water-resistive barrier under siding.
- E. Section 07 25 00 - Weather Barriers: Weather barrier under siding.
- F. Section 07 92 00 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.
- G. Section 09 91 13 - Exterior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008 (Reapproved 2016).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's requirements for related materials to be installed by others.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods, including nail patterns.
- C. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.
- D. Warranty: Submit copy of manufacturer's warranty, made out in KCDC's name, showing that it has been registered with manufacturer.
- E. Warranty Documentation for Installation of Building Rainscreen Assembly: Submit installer warranty and ensure that forms have been completed in KCDC's name and registered with installer.

1.05 MOCK UP

- A. Construct mock-up, [4] feet long by [4] feet wide; include panel and soffit system, glazing, attachments to building frame, associated vapor retarder and air seal materials, weep drainage system, sealants and seals, related insulation, and [abutting differ wall finish veneer types] in mock-up.
- B. Locate where directed by Architect.
- C. Mock-up may remain as part of the Work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products under waterproof cover and elevated above grade, on a flat surface.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Installation Warranty for Building Rainscreen Assembly: Installer of exterior rainscreen assembly (including air/vapor barrier and attachments, framing, and exterior panels) to provide 10-year warranty that includes coverage for defective materials and/or workmanship. This warranty will also clearly include materials, labor, necessary activity to access these areas, and

removal of any materials to effect repairs and restore to watertight conditions.
www.edacontractors.com/#sle

PART 2 PRODUCTS

2.01 FIBER-CEMENT SIDING

- A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying to ASTM C1186, Type A, Grade II; with machined edges, for nail attachment.
 - 1. Style: as indicated on drawings.
 - 2. Texture: Smooth.
 - 3. Width (Height): as indicated on drawings inches.
 - 4. Thickness: 5/16 inch, nominal.
 - 5. Finish: Factory applied primer.
 - 6. Color: As indicated on drawings.
 - 7. Warranty: 30 year limited; transferable.
 - 8. Manufacturers:
 - a. Allura, a division of Plycem USA, Inc; _____: www.allurausa.com/#sle.
 - b. James Hardie Building Products, Inc; _____: www.jameshardie.com/#sle.
 - c. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Panel Siding: Vertically oriented panels made of cement and cellulose fiber formed under high pressure with integral surface texture, complying to ASTM C1186, Type A, Grade II; with machined edges, for nail attachment.
 - 1. Texture: Smooth.
 - 2. Length (Height): random, as indicated on drawings inches, nominal.
 - 3. Width: random, as indicated on drawings inches.
 - 4. Finish: Factory applied stain.
 - 5. Color: As indicated on drawings.
 - 6. Warranty: 30 year limited; transferable.
 - 7. Manufacturers:
 - a. Base Bid: Equitone Fiber Cement Facade Materials; <https://www.equitone.com/>.
 - b. Alternate: Swisspearl Facade Panels; Largo Carat <https://www.swisspearl.com/>; 1-636-698-4976
 - c. Alternate: American Fiber Cement Corporation; Cembrit Patina www.americanfibercement.com; 1-800-688-8677.
- C. Soffit Panels: Smooth panels of same material and finish.

2.02 ACCESSORIES

- A. Furring Strips: Galvanized metal channels.
- B. Trim: Same material and texture as siding.
- C. Fasteners: Eco-cladding brackets; <http://www.ecocladding.com/alpha-v-bracket-vertical>
- D. Sealant: Elastomeric, polyurethane or silyl-terminated polyether/polyurethane, and capable of being painted.
- E. Finish Paint: Latex house paint acceptable to siding manufacturer; primer recommended by paint manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Verify that water-resistive barrier has been installed over substrate completely and correctly.
- C. Do not begin until unacceptable conditions have been corrected.

- D. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Install Sheet Metal Flashing:
 - 1. Above door and window trim and casings.
 - 2. Above horizontal trim in field of siding.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and recommendations.
 - 1. Read warranty and comply with terms necessary to maintain warranty coverage.
 - 2. Use trim details indicated on drawings.
 - 3. Touch up field cut edges before installing.
 - 4. Pre-drill nail holes if necessary to prevent breakage.
- B. Simulated Masonry Panels: Install with manufacturer's recommended clips leaving no fasteners visible.
- C. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.
- D. Over Masonry Walls: Install furring strips of adequate thickness to accept full length of nails and spaced at 16 inches on center; leave space at top and bottom open; top may be behind soffit; at bottom install insect screen over opening by wrapping a strip of screen over bottom ends of vertical furring strips.
- E. Over Steel Studs: Use hot-dipped galvanized self-tapping screws, with the points of at least three screws penetrating each stud the panel crosses and at panel ends.
- F. Allow space for thermal movement between both ends of siding panels that butt against trim; seal joint between panel and trim with specified sealant.
- G. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- H. Joints in Vertical Siding: Install Z-flashing in horizontal joints between successive courses of vertical siding.
- I. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.
- J. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations indicated on drawings, and provide vent area specified.
- K. After installation, seal joints except lap joints of lap siding; seal around penetrations, and paint exposed cut edges.
- L. Finish Painting: Within one week after installation, paint siding and trim with one coat primer and two coats finish paint.

3.04 PROTECTION

- A. Protect installed products until Date of Substantial Completion.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 07 81 00
APPLIED FIREPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fireproofing of interior structural steel not exposed to damage or moisture.
- B. Fireproofing of structural steel exposed to damage or moisture.
- C. Preparation of fireproofing for application of exposed finish specified elsewhere.

1.02 RELATED REQUIREMENTS

- A. Section 05 12 00 - Structural Steel Framing.
- B. Section 05 21 00 - Steel Joist Framing.
- C. Section 05 31 00 - Steel Decking.
- D. Section 07 05 53 - Fire and Smoke Assembly Identification.
- E. Section 07 81 23 - Intumescent Fire Protection.
- F. Section 07 84 00 - Firestopping.
- G. Section 09 21 16 - Gypsum Board Assemblies: Gypsum board fireproofing.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.
- B. ASTM E605/E605M - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 1993, with Editorial Revision (2015).
- C. ASTM E736/E736M - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members; 2017.
- D. ASTM E760/E760M - Standard Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members; 1992, with Editorial Revision (2015).
- E. ASTM E859/E859M - Standard Test Method for Air Erosion of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 1993, with Editorial Revision (2015).
- F. ASTM E937/E937M - Standard Test Method for Corrosion of Steel by Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 1993, with Editorial Revision (2015).
- G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015.
- H. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with placement of ceiling hanger tabs, mechanical component hangers, and electrical components.
- B. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide data indicating product characteristics.
- C. Manufacturer's Certificate: Certify that applied fireproofing products meet or exceed requirements of Contract Documents.
- D. Test Reports: Reports from reputable independent testing agencies for proposed products, indicating compliance with specified criteria, conducted under conditions similar to those on project, as follows:
 - 1. Bond strength.

2. Bond impact.
 3. Compressive strength.
 4. Fire tests using substrate materials similar those on project.
- E. Manufacturer's Installation Instructions: Indicate special procedures.
- F. Field Quality Control Submittals: Submit field test report.
- G. Manufacturer's Qualification Statement.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

1.07 FIELD CONDITIONS

- A. Do not apply fireproofing when temperature of substrate material and surrounding air is below 40 degrees F or when temperature is predicted to be below said temperature for 24 hours after application.
- B. Provide ventilation in areas to receive fireproofing during application and 24 hours afterward, to dry applied material.
- C. Provide temporary enclosure to prevent spray from contaminating air.
- D. Do not allow roof traffic during installation of roof fireproofing and drying period.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a two year period after Date of Substantial Completion.
1. Include coverage for fireproofing to remain free from cracking, checking, dusting, flaking, spalling, separation, and blistering.
 2. Reinstall or repair failures that occur within warranty period.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Applied Fireproofing:
1. GCP Applied Technologies; ____: www.gcpat.com/#sle.
 2. Isolatek International Corp; ____: www.isolatek.com/#sle.
 3. Southwest Fireproofing Products Company; ____: www.sfrm.com/#sle.
 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FIREPROOFING ASSEMBLIES

- A. Provide assemblies as indicated on drawings.
- B. UL listings with a Load Restriction are not allowed.
- C. Provide fire resistance ratings for following building elements as required by local building code:
1. Primary structural frame, including columns, girders, and trusses, Rating and UL # per drawings hours.
 2. Bearing walls, exterior, Rating and UL # per drawings hours.
 3. Bearing walls, interior, Rating and UL # per drawings hours.
 4. Nonbearing walls and partitions, exterior, Rating and UL # per drawings hours.
 5. Nonbearing walls and partitions, interior, Rating and UL # per drawings hours.
 6. Floor construction, including supporting beams and joists, Rating and UL # per drawings hours.
 7. Roof construction, including supporting beams and joists, Rating and UL # per drawings hours.

2.03 MATERIALS

- A. Applied Fireproofing Material for Interior Applications, Concealed: Manufacturer's standard factory mixed material, which when combined with water is capable of providing indicated fire resistance, and complying with following requirements:
 - 1. Bond Strength: 150 pounds per square foot, minimum, when tested in accordance with ASTM E736/E736M when set and dry.
 - 2. Compressive Strength: 8.33 pounds per square inch, minimum.
 - 3. Effect of Impact on Bonding: No cracking, spalling or delamination, when tested in accordance with ASTM E760/E760M.
 - 4. Corrosivity: No evidence of corrosion, when tested in accordance with ASTM E937/E937M.
 - 5. Surface Burning Characteristics: Maximum flame spread index of 0 (zero) and maximum smoke developed index of 0 (zero), when tested in accordance with ASTM E84.
 - 6. Fungal Resistance: No growth after 28 days when tested according to ASTM G21.
- B. Applied Fireproofing Material Exposed to Damage or Moisture: Manufacturer's standard factory mixed material, which when combined with water is capable of providing indicated fire resistance, and complying with following requirements:
 - 1. Recommended by manufacturer for permanent exterior exposure.
 - 2. Composition: Portland cement-based; not mineral fiber-based.
 - 3. Bond Strength: 1,000 psf, minimum, when tested in accordance with ASTM E736/E736M when set and dry.
 - 4. Effect of Impact on Bonding: No cracking, spalling or delamination, when tested in accordance with ASTM E760/E760M.
 - 5. Corrosivity: No evidence of corrosion, when tested in accordance with ASTM E937/E937M.
 - 6. Air Erosion Resistance: Weight loss of 0.025 g/sq ft, maximum, when tested in accordance with ASTM E859/E859M after 24 hours.
 - 7. Surface Burning Characteristics: Maximum flame spread index of 0 (zero) and maximum smoke developed index of 0 (zero), when tested in accordance with ASTM E84.
 - 8. Fungal Resistance: No growth after 28 days when tested according to ASTM G21.
 - 9. Manufacturers:
 - a. GCP Applied Technologies; Monokote Z-106/HY: www.gcpat.com/#sle.
 - b. GCP Applied Technologies; Monokote Z-146: www.gcpat.com/#sle.
 - c. GCP Applied Technologies; Monokote Z-156: www.gcpat.com/#sle.
 - d. _____.

2.04 ACCESSORIES

- A. Primer Adhesive: Of type recommended by applied fireproofing manufacturer.
- B. Overcoat: As recommended by manufacturer of applied fireproofing material.
- C. Water: Clean, potable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive fireproofing.
- B. Verify that clips, hangers, supports, sleeves, and other items required to penetrate fireproofing are in place.
- C. Verify that ducts, piping, equipment, or other items that would interfere with application of fireproofing have not been installed.
- D. Verify that voids and cracks in substrate have been filled.
- E. Verify that projections have been removed where fireproofing will be exposed to view as a finish material.

3.02 PREPARATION

- A. Perform tests as recommended by fireproofing manufacturer in applications where adhesion of fireproofing to substrate is in question.
- B. Remove incompatible materials that could effect bond by scraping, brushing, scrubbing, or sandblasting.
- C. Prepare substrates to receive fireproofing in strict accordance with instructions of fireproofing manufacturer.
- D. Apply fireproofing manufacturer's recommended bonding agent on primed steel.
- E. Protect surfaces not scheduled for fireproofing and equipment from damage by overspray, fall-out, and dusting.
- F. Close off and seal duct work in areas where fireproofing is being applied.

3.03 APPLICATION

- A. Apply primer adhesive in accordance with manufacturer's instructions.
- B. Apply fireproofing in uniform thickness and density as necessary to achieve required ratings.
- C. Apply overcoat at the rate recommended by fireproofing manufacturer.

3.04 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with Section 01 40 00 - Quality Requirements.
- B. Inspect installed fireproofing after application and curing for integrity, prior to its concealment.
 - 1. Submit field test reports promptly to Contractor and Architect.
- C. Ensure that actual thicknesses, densities, and bond strengths meet requirements for specified ratings and requirements of authorities having jurisdiction (AHJ).
- D. Repair or replace applied fireproofing at locations where test results indicate fireproofing does not meet specified requirements.
- E. Re-inspect installed fireproofing for integrity of fire protection, after installation of subsequent Work.

3.05 CLEANING

- A. Remove excess material, overspray, droppings, and debris.
- B. Remove fireproofing from materials and surfaces not required to be fireproofed.
- C. At exposed fireproofing, clean surfaces that have become soiled or stained, using manufacturer's recommended procedures.

END OF SECTION

SECTION 08 14 23.19
Molded – Hardboard Faced Wood Door

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Multifamily dwelling interior door applications.

1.02 RELATED REQUIREMENTS

- A. Section 08 71 00 - Door Hardware.
- B. Section 09 91 23 - Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ANSI/ WDMA I.S – 1A – Window and Door Manufacture Association Industry Standard for Interior Architectural Wood Doors.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
- D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Maintain at project site copies of reference standards relating to installation of products specified.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied finish.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Five year minimum warranty.

PART 2 PRODUCTS

2.01 MOLDED PANEL DOORS

- A. Molded Panel doors shall be fabricated using loose lay up assembly that includes molded wood fiber facings, wood or MDF stiles, wood or MDF rails and corrugated cell core. Door facings are to be bonded to stiles, rails and core forming a 3-ply structural attachment. Water based latex primer used on door facings (stile and rails per request) unless factory pre-finished.
 - 1. Mounting surface for latching hardware to be reinforced with solid internal support. Hinge preparations for 1-3/8" thick doors to be machined for standard weight radius mortise 3-1/2" hinges and 1-3/4" thick doors to be machined to accept 4" hinges. Latch preparations are to be placed in the area of solid internal supports. Face bore(s) for cylindrical lock and deadbolt are to be 2-1/8" diameter at 2-3/4" or 2-3/8" backset.

2. Vertical edge of door to be square, beveled both sides or lock stile only. Edge preparation should be clearly noted when the product is ordered.

2.02 BIFOLD PANEL DOORS

Molded Panel bifolds shall be fabricated using loose lay up assembly that includes molded wood fiber facings with optional flush facings on backside, wood or MDF stiles, wood or MDF rails and corrugated cell. Bifold facings are to be bonded to stiles, rails and core forming a 3-ply structural attachment.

2.03 DOOR FRAME

Wood jambs shall be fabricated as a flat jamb with doorstop applied or 2-piece split jamb. Hinge jamb preparations for 1-3/8" thick doors to be machined for standard weight radius mortise 3-1/2" hinges and 1-3/4" thick doors to be machined to accept 4" hinges. Strike jamb preparations are to be machined for full lip cylindrical strike plate. Double door units shall include preparations for ball catch located at the top of door on both door panels designed to strike into the head jamb.

2.04 PERFORMANCE REQUIREMENTS

- A. Requirements Molded-Hardboard Faced Wood Doors:
 1. Accessibility: Comply with ICC A117.1 and ADA Standards.
 2. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115 in accordance with specified requirements
 3. Finish: Factory primed for field finishing.

2.05 MANUFACTURERS

1. Masonite; Molded Panel Series Hollow Core Interior Doors; Logn: Surface: Smooth Panel Type: Recessed. <https://residential.masonite.com/>
2. Jeld-wen; 2-panel, smooth, www.jeld-wen.com
3. Mastercraft; 2-panel, smooth, www.mastercraftdoors.com
4. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

- A. Installation: Remove protective packaging just prior to installation. Installer shall be experienced in performing work required and shall be specialized in the installation of work similar to that required for this project. Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product packaging instructions for installation.

3.03 FINISHES

- A. Seal and inspect all 6 surfaces of door (top, hinge side, bottom, lock side, front face and back face) with two coat minimum on operable panel(s). Finishing and/or re-finishing must be completed immediately after door has acclimated to the environment where it is to be installed and within a maximum of 7 days. Avoid finishing after a rain or damp and during periods of higher than average humidity. Conduct periodic inspections of all coated surfaces to insure that door components are not exposed. Inspections should occur at least once a year. Reseal the surface as needed.

END OF SECTION

SECTION 12 36 00
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for manufactured casework.
- B. Wall-hung counters and vanity tops.
- C. Sinks molded into countertops.

1.02 RELATED REQUIREMENTS

- A. Section 06 41 00 - Architectural Wood Casework.
- B. Section 09 30 00 - Tiling: Tile for countertops.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2018).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2016, with Errata (2018).
- D. IAPMO Z124 - Plastic Plumbing Fixtures; 2017.
- E. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
- F. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material; 2013.
- G. KCMA - Kitchen Cabinet Manufacturing Association
- H. MIA (DSDM) - Dimensional Stone Design Manual, Version VIII; 2016.
- I. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- J. PS 1 - Structural Plywood; 2009.
- K. THDA - Tennessee Housing Development Agency

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- F. Certificate: Submit labels and certificates required by quality assurance and quality control programs.
- G. Installation Instructions: Manufacturer's installation instructions and recommendations.
- H. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.
- B. Quality Certification:

1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
2. Provide designated labels on shop drawings as required by certification program.
3. Provide designated labels on installed products as required by certification program.
4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
 1. Laminate Sheet: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
 - a. Manufacturers:
 - 1) Formica Corporation: www.formica.com
 - 2) Wilsonart: www.wilsonart.com
 - b. Finish: as indicated on drawings
 - c. Surface Color and Pattern: As indicated on drawings.
 2. Exposed Edge Treatment: Post formed laminate; front edge substrate built up to minimum 1-1/4 inch thick with raised radiused edge, integral coved backsplash with radiused top edge.
 3. Exposed Edge Treatment: Molded rubber edge with T-spline, sized to completely cover edge of panel.
 4. Back and End Splashes: Same material, same construction.
- C. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 1. Flat Sheet Thickness: 1/2 inch, minimum.
 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers:
 - 1) Avonite Surfaces: www.avonitesurfaces.com
 - 2) Formica Corporation: www.formica.com
 - 3) Wilsonart: www.wilsonart.com
 - b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - c. Sinks and Bowls: Integral castings; minimum 3/4 inch wall thickness; comply with IAPMO Z124.
 - d. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
 3. Other Components Thickness: 1/2 inch, minimum.
 4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

- D. Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.
 - 1. Flat Sheet Thickness: 1-1/4 inch, minimum.
 - 2. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA 3-01 and NEMA LD 3; orthophthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers:
 - 1) Cambria Company LLC: www.cambriausa.com
 - b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with the MIA Dimension Stone Design Manual.
 - c. Finish on Exposed Surfaces: Polished.
 - 3. Other Components Thickness: 3/4 inch, minimum.
 - 4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

2.02 MATERIALS

- A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- B. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes. Provide grommet where required
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches, unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops and wall panels up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
 - 1. Integral sinks: Shop-mount securely to countertop with adhesives, using flush configuration, as per manufacturer's instructions, and as detailed on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Install tile as specified in Section 09 30 00.
- D. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 12 36 40 GRANITE COUNTERTOP

PART 1 - GENERAL

1.1 SUMMARY:

- A. Section includes:
 - 1. Stone countertops.
 - 2. Stone side and backsplashes.
- B. Related Sections:
 - 1. Division 05 Section "Metal Fabrications" for steel countertop supports.
 - 2. Division 12 Section "Cabinets and Fixtures".

1.2 REFERENCES:

- A. ASTM C 119-04: Terminology Relating to Dimension Stone
- B. ASTM C 170-90 (1999): Test Method for Compressive Strength of Dimension Stone
- C. ASTM C 615-03: Specification for Granite Dimension Stone
- D. ASTM C 880-98: Test Method for Flexural Strength of Dimensional Stone

1.3 SUBMITTALS:

- A. Product Data: For Granite, Granite accessory, and other manufactured products.
 - 1. Each Granite type: Physical properties
- B. Shop Drawings: Include plans, sections, details, and attachments to other work. Show fabrication and installation details for dimension stone cladding:
 - 1. Include dimensions and profiles of Granite units.
 - 2. Show locations and details of joints.
 - 3. Show locations and details of anchors and supports.
- C. Samples: (2) Sets for each style required, exhibiting the full range of color characteristics expected; not less than 12 inches square.
 - 1. Grout Samples: Full range of exposed color and texture.
 - 13. Sealant Samples: For each type and color of joint sealant required.
- D. Sealant Compatibility Test Report: Submit test report from sealant manufacturer, in accordance with Division 07 Section "Joint Sealants" stating that sealants will not stain stone.
- E. Maintenance Data: Provide maintenance manuals for stone countertops. Include granite-care products recommended by stone source.

1.4 QUALITY ASSURANCE:

- A. Fabricator Qualifications: Skilled workers who custom-fabricate stone countertops similar to work of this Project.
- B. Source Limitations for Granite: Obtain each variety of Granite from a single quarry.
 - 1. Obtain each variety of stone from a single quarry, whether specified in this Section or in another Section of the Specifications.

2. Make Granite slabs available for Architect to examine for appearance characteristics.
- C. Mockup: Build mockup to demonstrate aesthetic effects and set quality standards for materials and execution.
 1. Build mockup of typical countertop as shown on Drawings.
 2. Approved mockup may become part of the completed Work.

1.5 PROJECT CONDITIONS:

- A. Field Measurements: Verify dimensions of construction to receive stone countertops by field measurements before fabrication.

PART 2 – PRODUCTS

2.1 GRANITE SOURCE:

- A. Varieties and Source:
 1. Provide Level 1 Granite from reputable manufacturer.

2.2 MATERIAL:

- A. Granite: ASTM C 615.
- B. Cut granite from one block or contiguous, matched blocks in which natural markings occur.
- C. Match Architect's samples.
- D. Granite Type:
 1. As selected by Architect. See Drawings.
 2. As selected by Architect. See Drawings.
 3. Quality Level: As selected by Architect. See Drawings.
 2. Finish: Polished and sealed.

2.3 ACCESSORIES:

- A. General: Use only adhesives formulated for granite and recommended by manufacturer for the application shown on Drawings.
- B. Water-Cleanable Epoxy Adhesive: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Water-Cleanable Epoxy Grout: ANSI A118.3, chemical-resistant, water-cleanable, tile-setting and -grouting epoxy, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Adhesive: 2-part epoxy or polyester adhesive, formulated specifically for bonding stone to stone, with an initial set time of not more than 2 hours at 70 deg F, and with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 1. Color: Match stone.
- E. Sealant for Countertops: Manufacturer's standard sealant of characteristics indicated below that comply with applicable requirements in Division 07 Section "Joint Sealants" and will not stain the stone it is applied to.
 1. Single-component, neutral-curing silicone sealant.

2. Color: As selected by Architect.
 3. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- F. Cleaner: Cleaner specifically formulated for granite types, finishes, and applications indicated, as recommended by stone producer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.
- G. Sealer: Colorless, stain-resistant sealer that does not affect color or physical properties of stone surfaces, as recommended by stone producer for application indicated.

2.4 FABRICATION, GENERAL:

- A. General: Fabricate granite per requirements, including Drawings and Shop Drawings.
1. Granite: NBGQA's "Specifications for Architectural Granite.
- B. Select granite for intended use to prevent fabricated units from containing cracks, seams, and starts that could impair structural integrity or function.
1. Repairs that are characteristic of the varieties specified are acceptable provided they do not impair structural integrity or function and are not aesthetically unpleasing, as judged by Architect.
- C. Grade and mark stone for final locations to produce assembled countertop units with an overall uniform appearance.
- D. Fabricate granite countertops in sizes and shapes needed to comply with requirements indicated, including details on Drawings and Shop Drawings.
1. Clean sawed backs of granite to remove rust stains and iron particles.
 2. Dress joints straight and at right angle to face, unless otherwise indicated.
 3. Cut and drill sinkages and holes in stone for anchors, supports, and attachments.
 4. Provide openings, reveals, and similar features to accommodate adjacent work.
 5. Fabricate molded edges with machines having abrasive shaping wheels made to reverse contour of edge profile to produce uniform shape throughout entire length of edge and with precisely formed arris slightly eased to prevent snipping, and matched at joints between units. Form corners of molded edges as indicated with outside corners slightly eased, unless otherwise indicated.
 6. Finish exposed faces of granite to comply with requirements indicated for finish of each type of granite required and to match approved Samples and mockups. Provide matching finish on exposed edges of countertops, splashes, and cutouts.
- E. Carefully inspect finished granite units at fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units.

2.5 COUNTERTOPS:

- A. General: Comply with recommendations in MIA's "Dimension Stone - Design Manual." B. Nominal Thickness: Gage backs to provide units of identical thickness.
1. Kitchen Cabinet Tops – 3 cm
 2. Vanity Cabinet Tops – 2 cm
- B. Edge: Straight, slightly eased at top.
- C. Splashes: Side and rear splashes

1. Kitchen Cabinets – 3 cm
 2. Vanity Cabinets – 2 cm
 3. Height: As shown on Drawings.
 4. Top-Edge Detail: As shown on Drawings
- D. Joints: Fabricate countertops in sections for joining in field, with joints at locations shown on Drawings and as follows:
1. Joints: 1/16 inch in width.
- E. Cutouts and Holes:
1. Under-counter Fixtures: Make cutouts for under-counter fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.
 2. Counter-Mounted Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations.
 3. Fittings: Drill countertops in shop for plumbing fittings, counter mounted soap dispensers, and similar items.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine substrates indicated to receive stone countertops and conditions under which stone countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Clean dirty or stained granite surfaces by removing soil, stains, and foreign materials before setting. Clean granite by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives. Allow granite to dry before installing.

3.3 CONSTRUCTION TOLERANCES:

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/16 inch in 48 inches.
- B. Variation from Level: Do not exceed 1/8 inch in 96 inches, 1/4 inch maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/4 of nominal joint width.
- D. Variation in Plane at Joints (Lipping): Do not exceed 1/64-inch difference between planes of adjacent units.
- E. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch difference between edges of adjacent units, where edge line continues across joint.

3.4 INSTALLATION OF COUNTERTOPS:

- A. If called for on Drawings, install countertops over plywood sub-tops with full spread of water-cleanable

epoxy adhesive.

- B. Do not cut granite in field. If granite countertops or splashes require additional fabrication not specified to be performed at Project site, return to fabrication shop for adjustment.
- C. Set granite to comply with requirements shown on Drawings and Shop Drawings. Shim and adjust granite to location shown with continuous solid shims. Install countertops with uniform joints of widths shown and with edges and faces aligned.
- D. Bond joints with granite adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
- E. Space joints with 1/16-inch gap for filling with [grout] [sealant]. Use temporary shims to ensure uniform spacing.
- F. Install backsplash and end splash by adhering to wall with water-cleanable epoxy adhesive. Leave 1/16-inch gap between countertop and splash for filling with sealant. Use temporary shims to ensure uniform spacing.
- G. Grout joints to comply with ANSI A108.10. Remove temporary shims before grouting. Tool grout uniformly and smoothly with plastic tool.
- H. Apply sealant to joints; comply with Division 07 Section "Joint Sealants." Remove temporary shims before applying sealant.

3.5 ADJUSTING AND CLEANING:

- A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
- B. Remove and replace granite countertops of the following description:
 - 1. Broken, chipped, stained, or otherwise damaged granite. Granite may be repaired if methods and results are approved by Architect.
 - 2. Defective countertops.
 - 3. Defective joints, including misaligned joints.
 - 4. Interior countertops and joints not matching approved Samples and mockups.
 - 5. Interior countertops not complying with other requirements indicated.
- C. Replace in a manner that results in granite countertops matching approved Samples and mockups, complying with other requirements, and showing no evidence of replacement.
- D. Following installation and after sealants are cured, clean granite countertops using clean water and soft rags.
- E. Sealer Application: Apply granite sealer to comply with granite producer's and sealer manufacturer's instructions.

End of Section

SECTION 12 93 00
SITE FURNISHINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide all labor, equipment, materials, incidental work, and construction methods necessary to furnish and install designated Site Furnishings and related items as indicated on the Contract Documents, as specified in this Section, and includes, but is not limited to, the following Site Furnishings:

1. Free Standing Planters
2. Benches
3. Bike Rack

1.02 REFERENCES

- A. The following standards shall apply to the work of this Section:
1. Tennessee Department of Transportation (TDOT):
 2. Standard Specifications for Road and Bridge Construction, latest edition.
 3. ASTM: American Society for Testing and Materials
 - a. A 36 Carbon Structural Steel
 - b. A 53 Pipe, Steel, Black and Hot-dipped, Zinc-coated
 - c. A 108 Steel Bars, Carbon cold Finished, Standard Quantity
 - d. A 123 Zinc (Hot-dip galvanized) Coatings on Iron and Steel Products
 - e. A 153 Zinc Coating (Hot-dip) on Iron and Steel Hardware
 - f. A 193 Alloy-Steel and Stainless Steel Bolting Materials for High
 - g. A 307 Carbon Steel Bolts and Studs, 60000 PSI Tensile Strength
 - h. A 312 Seamless and Welded Austenitic Stainless Steel Pipes
 - i. A 385 Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
 - j. A500-99 Cold-formed Welded and Seamless Carbon Steel Structural Tubing in
 - k. A510-96 Wire rods and coarse Round Wire, Carbon Steel
 4. AWS: American Welding Society
 - a. D1.1-2000 Structural Welding Code – Steel Rounds and Shapes
 5. AISI: American Iron and Steel Institute
 - a. AISI M1020 Merchant Quality Steel
 - b. AISI BS 1449 Part 4, Standard Mill Surface Finished.

1.03 SUBMITALS

- A. Submittals shall be made in accordance with 01 30 00 ADMINISTRATIVE REQUIREMENTS.
- B. Manufacturer's Literature: Submit copies of each of manufacturer's material descriptions and installation instructions for:
1. Free Standing Planters
 2. Benches
 3. Bike Rack
- C. Material and color samples for Free Standing Planters and Benches.

1.04 QUALITY STANDARDS

- A. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Metal fabrication shall be accomplished using the highest standards of workmanship. All work shall be executed by experienced mechanics, shall conform to the requirements of the Contract Documents, and meet the following requirements.
 - 1. Refer to section 01 45 00 QUALITY CONTROL.
 - 2. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves.
 - 3. Exposed surfaces shall have a smooth finish and sharp, well defined lines and arrises.
 - 4. All surfaces and connections of metal items shall be without visible grinding marks, surface differentiation or variation.
 - 5. All fabricated metal items shall be fine sanded throughout to produce a high standard of surface smoothness.
 - 6. Castings shall have sharp corners and edges and shall be clean, smooth and true to pattern.
 - 7. Welding shall be continuous and shall extend for the entire length of the joints except where specifically indicated on the Contract Documents. All exposed welds shall be ground smooth.
 - 8. All welds shall be water tight.
 - 9. All shop connections shall be full seam welded and ground flush and smooth. Field connections bolted unless otherwise permitted as indicated in this Section. Draw up all threaded connections tightly, after buttering same with pipe joint compound, to exclude water. Deform threads to prevent loosening for all exposed connections subject to vandalism.
- B. Where work fabricated under other Sections has been delivered to the site and has dimensions or fabricated construction that does not fit the field conditions, notify the Landscape Architect of the discrepancy immediately. Follow up voice communication with a written correspondence detailing the discrepancy between delivered work and constructed condition.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Store delivered Site Furnishing items under this Section, in a manner to prevent wracking or stress of components, and to prevent mechanical damage or damage by the elements. All stored materials and items shall be protected from weather, careless handling and vandalism.
- B. Items which become rusted or damaged because of non-compliance with these conditions will be rejected and shall be replaced without additional cost to the owner.

1.06 GENERAL INSTALLATION

- A. Where anchors, bolts or fasteners are exposed, they shall be configured or secured in such a way as to prevent their casual removal by use of vandal-proof heads or fastenings unless otherwise specified on Drawings.
- B. Free-standing site improvement items shall be set plumb and horizontal regardless of the pitch of the finished surrounding grade unless otherwise shown on the Contract Documents.
- C. The Contractor shall be responsible for timing the delivery of site improvement items so as to minimize the on-site storage time prior to installation. All stored materials shall be protected from weather, careless handling and vandalism.
- D. Contractor shall be responsible for the correct location of site improvement items. Take particular care to maintain shapes, plumb and level during the pouring of concrete.
- E. All Work shall be accurately set to established lines and elevations and rigidly set in place to supporting construction.

1.07 COORDINATION

- A. The work of this Section shall be completely coordinated with the work of other Sections. Verify dimensions and work of other trades that adjoin materials of this Section before installing items specified.
- B. Obtain all necessary templates and patterns required from other trades for proper execution of work of this Section. Coordinate the delivery of items, templates, and patterns manufactured by other trades to maintain construction schedule. Receive from other trades items to be installed under this Section.

1.08 GUARANTEE

- A. The Contractor shall furnish and deliver standard written manufacturer's guarantee in Owner's name covering all materials and workmanship under Section in addition to, and not in lieu of, guarantee requirements set forth elsewhere in these Contract Documents, and other liabilities which the Contractor may have by law or other provisions of the Contract Documents.
- B. Supplier shall pay for repairs of any damage to any part of the project caused by defects in his work and for any repair to the materials or equipment caused by replacement. All repairs are to be done to the satisfaction of the Landscape Architect.
- C. Any part of the work installed under this contract requiring excessive maintenance shall be considered as being defective and shall be replaced by the Supplier during the one year guarantee period at no cost to the Owner.

PART 2 - PRODUCTS

2.01 FREE STANDING PLANTERS

- A. Product: Three (3) 38" ht. x 38" dia. tapered color concrete landscape containers with curved rim.
 - 1. Free Standing Planters:
 - a. Product: Kornegay Design Dunes Series Planter; DS-38
 - b. Manufacturer: Kornegay Design or approved equal
 - 1) Product Number: DS-38
 - 2) Color: integral pigment color to be selected and approved by landscape architect. Submit material samples for approval.
 - 3) 2-3/8" standard drainage hole
 - 4) Sandblast finish
 - 5) Approximately 990 lbs.
 - 6) Contact: (877) 252-6323
 - 7) Website: kornegaydesign.com

2.02 BENCHES

- A. Landscape Forms Generation 50 Cantilever Backed Bench or approved equal by Forms + Surfaces, DuMor, Victor Stanley, or approved equal.
 - 1. Product: Two (2) Generation 50 cantilever backed bench, 6-foot length without arm rests. Cast aluminum supports; 28" depth, 32.75" ht., 127 lbs.
 - 2. Manufacturer: Landscape Forms or approved equal
 - a. Bench Product Style: Generation 50 Cantilever Backed
 - b. Wood: Ipe
 - c. Finish: Titanium Panguard II powder-coated finish with TGIC polyester power coatings.
 - d. Surface mount
 - e. Anchors: 3/8-inch stainless steel anchor bolts and tamper resistant nuts, painted black to match bench.
 - f. Grout: as specified in these specifications
 - g. Contact: (800) 521-2546
 - h. Website: <https://www.landscapeforms.com/>

2.03 BIKE RACK

- A. Product requirements for Bike Rack:
 - 1. Product: Dero Hoop Rack, FT- Surface Mount, 2" Dia Schedule 40 Steel Pipe
 - 2. Manufacturer: Dero Bike Rack Company
 - a. Product Number: DERO HOOP BIKE RACK'
 - b. Color: Black Powdercoat
 - c. Surface Mount
 - d. Contact: 1-888-337-6729
 - e. Website: dero.com

2.04 CONCRETE AND REINFORCEMENT FOR POST FOOTINGS

- A. Concrete foundation walls, post holes, concrete infill and reinforcing steel shall be specified, furnished, installed and paid for under the Section 03 3000, CAST-IN-PLACE CONCRETE, of this Specification.

PART 3 - EXECUTION

3.01 EARTHWORK

- A. All excavation, filling, compacting and grading of backfill materials, including base and subbase materials, ordinary borrow, drainage fill and structural associated with and used in the installation of the items of this Section shall be as specified under respective Division 31 Section.

3.02 CONCRETE AND UNIT PAVER BASES

- A. Concrete base slabs and pavement shall be installed under the work of Section 32 1313.
- B. Brick unit pavers shall be installed under the work of Section 32 1400.

3.03 ALL SITE FURNISHINGS SUPPLIED UNDER THE WORK OF THIS SECTION

- A. Install in the locations noted on the Contract Documents, in accordance with the manufacturer's written installation instructions.
- B. The Contractor shall be responsible for timing the delivery of site improvement items, so as to minimize on-site storage time prior to installation. All stored materials and items must be protected from weather, careless handling and vandalism.
- C. All Site Furnishing items, including benches, free standing planters, and bike racks, shall be installed level and plumb.
- D. Install railing in as required and in locations shown on the Drawings.
- E. Coordinate with Landscape Architect for location of each free standing planter, bike rack, and bench prior to installation. Locations shall be reviewed and approved by Landscape Architect prior to installation.

3.04 ACCEPTANCE STANDARDS

- A. Site Improvement items fabricated, provided, delivered and installed under the work of this Section, will be rejected by the Landscape Architect for the following reasons:
 - 1. Site Furnishings do not meet quality standards noted in this Section.
 - 2. Posts are not plumb.
 - 3. Indications of field welding or cutting.
 - 4. Threaded connections are not drawn up tightly. Threads have not been deformed to prevent loosening.
 - 5. Anchorage into pavements is not solid but is perceptibly loose. Anchorage does not meet the requirements of the Contract Drawings.
- B. Metal fabrication shall be accomplished using the highest standards of workmanship. All work shall be executed by experienced metal workers, shall conform to the requirements of the Contract Documents, and meet the following requirements.
 - 1. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves.
 - 2. Exposed surfaces shall have a smooth finish and sharp, well defined lines and arrises.
 - 3. All surfaces and connections of metal items shall be without visible grinding marks, surface differentiation or variation.
 - 4. All fabricated metal items shall be fine sanded throughout to produce a high standard of surface smoothness.
 - 5. Welding shall be continuous and shall extend for the entire length of the joints except where specifically indicated on the Contract Documents. All exposed welds shall be ground smooth.
 - 6. All welds shall be water tight.
 - 7. All shop connections shall be full seam welded and ground flush and smooth.
 - 8. Painting shall be perfect, without scratches, sags or blemishes that would make his mother cry as determined by the Landscape Architect.

END OF SECTION

**SECTION 14 21 00
ELECTRIC TRACTION ELEVATORS**

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies electric traction elevators.
- B. Work Required:
 - 1. The work required under this section consists of all labor, materials and services required for the complete installation (including operational verification) of all the equipment required for the elevator(s) as herein specified.
 - 2. All work shall be performed in a first class, safe and workmanlike manner.
 - 3. In all cases where a device or part of the equipment is herein referred to in the singular, it is intended that such reference shall apply to as many of such devices or parts as are required to make complete installation.
- C. Related work not specified herein: The following sections contain requirements that relate to this section and are performed by trades other than the elevator manufacturer/installer.
 - 1. Construction Facilities and Temporary Controls: protection of floor openings and personnel barriers; temporary power and lighting.
 - 2. Earthwork: excavation for elevator pit.
 - 3. Cast-In-Place Concrete: elevator pit, and elevator machine foundation.
 - 4. Unit Masonry: masonry hoistway enclosure, building-in and grouting hoistway doorframes, and grouting of sills.
 - 5. Metal Fabrications: pit ladder, divider beams, and supports for entrances, rails and hoisting beam at top of elevator machine room.
 - 6. Cementitious Waterproofing: waterproofing of elevator pit.
 - 7. Heating, Ventilating, and Air Conditioning: ventilation and temperature control of elevator equipment areas.
 - 8. Electrical:
 - a. Main disconnects for each elevator.
 - b. Electrical power for elevator installation and testing.
 - c. Disconnecting device to elevator equipment prior to activation of sprinkler system.
 - d. The installation of dedicated GFCI receptacles in the pit and overhead (with Machine room-less).
 - e. Lighting in controller area, machine area and pit.
 - f. Wiring for telephone service to controller.
 - 9. Emergency (Standby) Power Supply Systems: emergency generator for elevator operation.
 - 10. Fire Alarm Systems: The installation of fire and smoke detectors at required locations and interconnecting devices; fire alarm signal lines to contacts in the machine room.
 - 11. Telephone Systems: ADAAG-required emergency communications equipment.
- D. Applicable Codes: Comply with applicable building codes and elevator codes at the project site, including but not limited to the following:
 - 1. ANSI A117.1, Buildings and Facilities, Providing Accessibility and Usability for Physically Handicapped People.
 - 2. ADAAG, Americans with Disabilities Act Accessibility Guidelines.
 - 3. ANSI/NFPA 70, National Electrical Code.

4. ANSI/NFPA 80, Fire Doors and Windows.
5. ASME/ANSI A17.1, Safety Code for Elevators and Escalators.
6. ANSI/UL 10B, Fire Tests of Door Assemblies.
7. CAN/CSA C22.1, Canadian Electrical Code.
8. CAN/CSA-B44, Safety Code for Elevators and Escalators.
9. EN 12016 (May 1998): "EMC Product Family Standards for lifts, escalators, and passenger conveyors Part 2 – immunity"
10. Model & Local Building Codes.
11. All other local applicable codes.

[NOTE: EDIT ITEMS SHOWN IN [BOLD] TEXT]

1.02 SYSTEM DESCRIPTION

- A. Equipment Description: Freedom MRL-MB Series; Gearless; Imperial-525
- B. Control: Motion 4000 / ELGO; Duplex Controller Operation.
- C. Quantity of Elevators: 2
- D. Elevator Floor Labels:
- E. Stops (maximum): 5
- F. Openings (front): 5
- G. Openings (rear): 0
- H. Travel: Refer to Drawings
- I. Rated Capacity: 3500 lbs.
- J. Speed: 350 fpm
- K. Entrance Type and Width: Two Speed Slide Door / 54"
- L. Entrance Height: 8' - 0"
- M. Main Power Supply: 208 Volts + or - 5% of normal, three-Phase, with a separate equipment grounding conductor.
- N. Car Lighting Power Supply: 120 Volts, Single-phase, 15 Amp, 60 Hz.
- O. Machine Location: Inside machine room located above hoistway.
- P. Signal Fixtures: Standard Freedom® fixtures
- Q. Control Location: Controller(s) shall be located above the hoistway in a machine room.
- R. Performance:
 1. Car Speed: $\pm 3\%$ of contract speed under any loading condition or direction of travel.
 2. Car Capacity: Safely lower, stop and hold up to 125% of rated load.
 3. Acceleration: 3 – 3.2 ft/sec²
 4. Jerk rates: 6 – 8 ft./ sec³
- S. Ride Quality:
 1. Vertical Vibration (maximum): 12 – 17 milli-g
 2. Horizontal Vibration (maximum): 10 – 15 milli-g
 3. Vertical Jerk (maximum): 8 ft./ sec³

4. Acceleration/Deceleration: 3.0 – 3.2 ft./ sec²
5. In Car Noise: 50 – 55 dB(A)
6. Stopping Accuracy: ± 0.125 in.
7. Re-leveling Distance: ± 0.4 in.

T. Operation:

Duplex Collective Operation: Using a microprocessor-based controller, the operation shall be automatic by means of the car and hall buttons. In the absence of system activity, one car can be made to park at the pre-selected main landing. The other (free) car shall remain at the last landing served. Only one car shall respond to a hall call. If either car is removed from service, the other car shall immediately answer all hall calls, as well as its own car calls.

U. Operating Features – Standard

1. Full Collective Operation
2. Anti-nuisance
3. Fan and Light Protection
4. Load Weighing Bypass
5. Independent Service
6. Full Collective Operation
7. Firefighters' Service Phase I and Phase II; **or** Special Emergency Service Phase I and II – Emergency Recall
8. Top of Car Inspection
9. Hoistway access
10. Zoned Car Parking

V. Door Control Features:

1. Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.
2. Elevator doors shall be provided with a reopening device that will stop and reopen the car door(s) and hoistway door(s) automatically should the door(s) become obstructed by an object or person.

Primary door protection shall consist of a two-dimensional, multi-beam array projecting across the car door opening. Under normal operation and for any door position, the system shall detect as a blockage an opaque object that is equal to or greater than 1.3 inches (33 mm) in diameter when inserted between the car doors at vertical positions from within 1 inch (25 mm) above the sill to 71 inches (1800 mm) above the sill. Under degraded conditions (one or more blocked or failed beams), the primary protection shall detect opaque objects that are equal to or greater than 4" (100 mm) in diameter for the same vertical coverage. If the system performance is degraded to the point that the 4" object cannot be detected, the system shall maintain the doors open or permit closing only under nudging force conditions.

The door reopening device shall also include a secondary, three-dimensional, triangular infrared multi-beam array projecting across the door opening and extending into the hoistway door zone. The door opening device will cause the doors to reopen when it detects a person(s) or object(s) entering or exiting the car in the area between the hoistway doors or the entryway area adjacent to the hoistway doors.

The size of the secondary protection zone shall vary as the door positions vary during

opening and closing. The width of the zone shall be approximately one-third the size of the separation between the doors (or door and strike plate for single-slide doors) and shall be approximately centered in the door separation. In order to minimize detection of hallway passers-by who are not entering the elevator, the maximum zone penetration into the entryway shall not exceed 20" for any door separation. Normal penetration depth into the entryway from the car doors shall be ~14" for a door separation of 42". The penetration shall reduce proportionally as the doors close. At door separations of 18" or less the secondary protection system may cease its normal operation since the depth of the zone recedes to where it is inside the hoistway doors. The vertical coverage of the secondary protection shall be ~19" (480 mm) above the sill to ~55" (1400 mm) above the sill (mid-thigh to shoulder of a typical adult).

The secondary protection shall have an anti-nuisance feature that will ignore detection in the secondary zone after continual detection occurs for a significant time period in the secondary zone without corresponding detection in the primary protection zone; i.e. a person/object is in the entryway but does not enter. Normal secondary protection shall be re-enabled whenever detection occurs in the primary zone.

The reaction time of the door detector sub-system shall not exceed 60 milliseconds when both primary and secondary protection capabilities are active; nor 40 milliseconds when the secondary protection is disabled.

3. Door nudging operation to occur if doors are prevented from closing for an adjustable period of time.

W. Provide equipment according to seismic zone: 3

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data for each system proposed for use. Include the following:

1. Car and hoistway fixtures including button selections, Braille selections, indicator selections and metal finish selections
2. Cab interior design, interior dimensions, ceiling details and wall panel selection charts for cab and entrance finishes
3. Dimensional entrance details
4. Electrical characteristics and connection requirements
5. Individual heat release values for the elevator control, hoist machines, transformers (if applicable) and line reactors (if applicable) expressed as (BTU)
6. Compliance with NEMA frame dimensions for the hoist machine

B. Shop Drawings: Submit drawings including material selection and dimension outlining:

1. Cab, counterweight, guide rail locations, buffers and other components in hoistway
2. Designed rail bracket spacing
3. Maximum loads and reaction locations where loads are imposed onto car guide rails, counterweight guide rails or machine beams requiring load transfer to building structure
4. Car and counterweight travel and clearances
5. Clear inside hoistway, pit and overhead dimensions
6. Location and sizes of access doors, hoistway entrances and frames
7. Electrical requirements

C. Heat release values expressed in BTU/HR/Car

- D. Operations and Maintenance Manuals: Provide manufacturer's standard operations and maintenance manual, pre-inspection and inspection manuals, control manual and motor drive manual

1.04 QUALITY ASSURANCE

- A. Manufacturer: Elevators shall be designed to allow any qualified elevator service provider to provide full service contracts without exception. Non-proprietary controls, hoist machines, fixtures and door equipment shall be utilized. Hoist machines shall meet NEMA frame dimensions. Sole sourced OEM hoist machines shall not be provided. Suspension means shall be time tested industry standard wire rope. Variances for non-standard elevator materials will not be accepted.
- B. Installer: Elevators shall be designed using only time tested industry standard material and shall be capable of being purchase, installed, serviced and repaired by any qualified elevator company without exception.
- C. Permits, Inspections and Certificates: The Elevator Contractor shall obtain and pay for necessary Municipal or State Inspection and permits as required by the elevator inspection authority, and make such tests as are called for by the regulations or such authorities. These tests shall be made in the presence of such authorities or their authorized representatives.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Should the building or the site not be prepared to receive the elevator equipment at the agreed upon date, the General Contractor will be responsible to provide a proper and suitable storage area on or off the premises at no cost to the elevator contractor.

Should the storage area be off-site and the equipment not yet delivered, then the elevator contractor, upon notification from the General Contractor, will divert the elevator equipment to the storage area. If the equipment has already been delivered to the site, then the General Contractor shall transport the elevator equipment to the storage area. The cost of elevator equipment taken to storage by either party, storage, and redeliver to the job site shall not be at the expense of the elevator contractor.

1.06 WARRANTY

- A. The elevator contractor's acceptance is conditional on the understanding that their warranty covers defective material covered by the elevator manufacturer and workmanship. The guarantee period shall not be less than 15 months from the date of completion or acceptance thereof by beneficial use, whichever is earlier, of each elevator. The warranty excludes: ordinary wear and tear or improper use, vandalism, abuse, misuse, or neglect or any other causes beyond the control of the elevator contractor and this express warranty is in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. The manufactures standard warranty shall be submitted as part of a qualified bid.

1.07 MAINTENANCE and SERVICE

- A. Maintenance service consisting of regular examinations and adjustments of the elevator equipment shall be provided by the elevator contractor for a period of 12 months after the elevator has been turned over for the customer's use. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24-hour callback service. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the

original equipment shall be provided.

- B. Periodic inspection and lubrication of elevator components shall be required as indicated in the operation and maintenance manual.
- C. The elevator inclusive of the control, fixtures and the door control must:
 - 1. Allow any elevator contractor to install, adjust and provide full service maintenance agreements without exception
 - 2. Be designed to allow any elevator contractor the ability to obtain all control replacement materials included but not limited to board replacements, drive replacements, processors, etc. at a published price. Qualified bids shall be submitted with a complete cataloged parts list including published replacement prices available to the service provider selected by the building owner.
 - 3. Include phone technical support available for the service provider selected by the building owner.
 - 4. Be provided with an unconditional adjustment manual, unconditional troubleshooting manual and straightline wiring diagrams outlining all internal terminal to terminal connections and electrical values within the control as well as connections to all peripheral items connected to the control system. Final "As Built" duplicates shall be available in the future for a published price at the request of any elevator contractor, building owner or elevator consultant.
 - 5. Shall not require monitoring of the non-standard belt suspension means
 - 6. Provide in the controller the necessary devices to run the elevator in inspection operation.
 - 7. Provide top of car control necessary to run the elevator on inspection operation
 - 8. Provide the means from the controller to reset the emergency brake when set because of an unintended car movement or ascending car over speed.
 - 9. Provide the means from the controller to reset elevator earthquake operation

PART 2 - PRODUCTS

2.01 DESIGN AND SPECIFICATIONS

- A. Provide: Machine room Freedom® traction passenger elevators from Canton Elevator Company. The control system and car design based on materials and systems manufactured by Canton Elevator Company. Specifically, the system shall consist of the following components:
 - 1. An AC gearless machine using embedded permanent magnets mounted machine room in machine room above the hoistway.
- B. Approved Installer: Any owner / AHJ qualified elevator contractor
- C. Maintenance Provider: Any owner / AHJ qualified elevator contractor
- D. Substitutions: Substitutions will be considered for elevators that meet the basis of design requirements, dimensionally complies with the shaft width and depth, and requires no additional structural modifications. Maintenance and Services to not be proprietary.

2.02 EQUIPMENT: CONTROL ROOM COMPONENTS

- A. Controller: A microcomputer based control system shall be provided to perform all of the functions of safe elevator operation. The system shall also perform car and group operational control.
1. All high voltage (110V or above) contact points inside the controller cabinet shall be protected from accidental contact in a situation where the controller doors are open.
 2. Controller shall be separated into two distinct halves; Motor Drive side and Control side. High voltage motor power conductors shall be routed so as to be physically segregated from the rest of the controller.
 3. Controllers shall be designed and tested for Electromagnetic Interference (EMI) immunity according to the EN 12016 (May 1998): "EMC Product Family Standards for lifts, escalators, and passenger conveyors Part 2 – immunity"
- B. Drive: A Variable Voltage Variable Frequency AC regenerative drive system shall be provided. The drive shall be set up for regeneration of AC power back to the building grid.

2.03 EQUIPMENT: MACHINE AND GOVERNOR

- A. Machine: AC gearless machine, with a synchronous permanent-magnet motor, dual solenoid service and emergency drum or disc brakes, mounted in the machine room above the hoistway.
- B. Governor: The governor shall be a centrifugal jaw type with pit tension device.
- C. Buffers, Car and Counterweight: Oil type buffers shall be used.
- D. Hoistway Operating Devices:
1. Emergency stop switch in the pit
 2. Terminal stopping switches.
- E. Positioning System: Consists of an encoder, reader box, and door zone vanes.
- F. Guide Rails and Attachments: Guide rails shall be Tee-section steel rails with brackets and fasteners. Side counterweight arrangements shall have a dual-purpose bracket that combines both counterweight guide rails, and one of the car guide rails to building fastening.
- G. Suspension: Traditional traction steel wire rope available from multiple sources.
- H. Governor Rope: Governor rope shall be traction steel and shall consist of at least eight strands wound about a sisal core center.
- I. Fascia: Galvanized sheet steel shall be provided at the front of the hoistway.
- J. Hoistway Entrances:
1. Frames: Entrance frames shall be of bolted construction for complete one-piece unit assembly. All frames shall be securely fastened to fixing angles mounted in the hoistway and shall be of UL fire rated steel.
 2. Sills shall be extruded: Aluminum.
 3. Doors: Entrance doors shall be of metal construction with vertical channel reinforcements.

4. Fire Rating: Entrance and doors shall have a UL 1-1/2 hour fire protection rating.
 5. Entrance Finish: #4 Satin Stainless Steel.
 6. Entrance marking plates: Entrance jambs shall be marked with 4" x 4" (102 mm x 102 mm) plates having raised floor markings with Braille located adjacent to the floor marking. Marking plates shall be provided on both sides of the entrance.
 7. Sight Guards: Black sight guards will be furnished.
- L. Counterweight Safeties: Where "Occupied Space" exists under the elevator hoistway, counterweight safeties shall be applied to the underside of the counterweight frame, and shall be either a type "A" or "B" depending on the rated speed.

2.04 EQUIPMENT: CAR COMPONENTS

- A. Carframe and Safety: A carframe fabricated from formed or structural steel members shall be provided with adequate bracing to support the platform and car enclosures. The car safety shall be integral to the carframe and shall be Type "B", flexible guide clamp type.
- B. Cab: # 4 brushed stainless steel shell with removable vertical plastic laminate selected from standard catalog of choices.
- C. Car Front Finish: #4 satin stainless steel.
- D. Car Door Finish: #4 satin stainless steel.
- E. Car Top: 12 gauge # 4 stainless steel.
- F. Ceiling Type:

Polygal suspended ceiling shall consist of white translucent polycarbonate diffusers set in frame of extruded # 4 stainless steel with fluorescent lighting fixtures.
- G. Emergency Car Lighting: An emergency power unit employing a 6-volt sealed rechargeable battery and totally static circuits shall be provided to illuminate the elevator car and provide current to the alarm bell in the event of building power failure.
- H. Emergency Pulsating Siren: Siren mounted on top of the car that is activated when the Alarm button in the car operating panel is engaged. Siren shall have a rated sound pressure level of 80 dB(A) at a distance of 3.0 m from the device. Siren shall respond with a delay of not more than 1 second after the switch or push button has been pressed.
- I. Fan: A two-speed 120 VAC fan will be mounted to the structural ceiling to facilitate in-car air circulation, meeting A17.1 code requirements. This two-speed fan produces airflow rates of 7.2 and 9.2 m³/min on low and high setting respectively. The fan shall be rubber mounted to prevent the transmission of structural vibration and will include a baffle to diffuse audible noise. A switch shall be provided in the car-operating panel to control the fan.
- J. Handrail: Handrails shall be provided on the rear wall of the car enclosure. Handrails shall be 1-1/2" round tubular handrail with a #4 satin stainless steel finish.
- K. Threshold: Aluminum.
- L. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.

- M. Roller Guides: Rubber roller guides shall be mounted on the top and the bottom of the car and counterweight. Car roller guides shall be a minimum of 3 rollers, 6" in diameter and the counterweight roller guides shall be 3 rollers, 6" in diameter.
- N. Platform: The car platform shall be constructed of 2 layers of plywood.
- O. Certificate frame: Provide a Certificate frame with a # 4 satin stainless steel finish.

2.05 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

- A. Car Operating Panel: A car operating panel shall be provided which contains all push buttons, key switches, and message indicators for elevator operation. The car operating panel shall have a #4 satin stainless steel finish.
 - 1. Applied car operating panel shall be furnished. It shall contain a bank of round metal mechanical illuminated buttons. Flush mounted to the panel and marked to correspond to the landings served, an emergency call button, door open and door close buttons, and switches for lights, inspection and the exhaust fan. The emergency call button shall be connected to a bell that serves as an emergency signal. All buttons to have raised numerals and Braille markings. # 4 Stainless Steel finish.

The car operating panel shall be equipped with the following features:

Standard:

- 1) Raised markings and Braille shall be provided to the left hand side of each push-button.
- 2) Car Position Indicator at the top of and integral to the car operating panel.
- 3) Door open and door close buttons.
- 4) Light key-switch.
- 5) Fan key-switch.
- 6) Inspection key-switch.
- 7) Elevator Data Plate marked with elevator capacity and car number.
- 8) Illuminated alarm button with raised markings.
- 10) In car stop switch (toggle or key unless local code prohibits use)
- 11) Firefighter's hat (standard USA)
- 12) Firefighter's Phase II Key-switch (standard USA)
- 13) Call Cancel Button (standard USA)

- B. Car Position Indicator: A 16-segment, digital, vacuum fluorescent car position indicator shall be integral to the car operating panel.
 - Hall Fixtures: Hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Hall fixtures shall have round mechanical buttons in flush mount face frame. Buttons shall be 1/8" projecting in vertically mounted fixture. Hall lanterns and position indicators shall be illuminated by means of LED. Fixture shall be #4 satin stainless steel finish.
- C. Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel and a chime will sound.
- D. Access key-switch at top floor in entrance jamb.
- E. Access key-switch at lowest floor in entrance jamb.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Installation of all elevator components except as specifically provided for elsewhere by others.

3.03 DEMONSTRATION

- A. The elevator contractor shall make a final check of each elevator operation with the Owner or Owner's representative present prior to turning each elevator over for use. The elevator contractor shall determine that control systems and operating devices are functioning properly.

END OF SECTION