

**SECTION 00 90 02
BIDDING AND CONTRACT REQUIREMENTS
ADDENDUM NUMBER 2**

**Demonica Kemper Architects
125 N. Halsted Street, Suite 301
Chicago, IL 60661
312.496.0000**

To: Prospective Bidders

Issued: October 2, 2023

Re: ADDENDUM NUMBER (2) TO THE BIDDING DOCUMENTS FOR

**McHenry County College
University Center at MCC**
Architect's Project Number: 22-050

This addendum forms a part of the bidding and contract documents and modifies the original bidding documents dated September 19, 2023. Acknowledge receipt of this addendum in the space provided on Bid Form. FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

ADDENDA TO THE PROJECT MANUAL

1. 06 42 16 Flush Wood Paneling
 - A. **ADD** the section in its entirety.
2. 07 21 00 Thermal Insulation
 - A. **ADD** the section in its entirety.
3. 09 30 13 Ceramic Tiling
 - A. **ADD** the section in its entirety.
4. 09 51 13 Acoustical Panel Ceilings
 - A. **ADD** the section in its entirety.
5. 09 54 26 Linear Wood Panels
 - A. **ADD** the section in its entirety.
6. 09 64 33 Wood Flooring
 - A. **ADD** the section in its entirety.
7. 09 65 19 Resilient Tile Flooring
 - A. **ADD** Quartz Tile (QT-x) to the spec as indicated. Refer to attached revised section for details.
8. 09 72 Wall Coverings
 - A. **REVISE** WC-1 and WC-2 to match the finish plans. Refer to the attached revised section for details.

ADDENDA TO THE DRAWINGS

1. A11.01
 - A. **REVISE** finish WF-1 as indicated.
 - B. **REVISE** finish T-3 as indicated.
 - C. **REVISE** finish LVT-1 as indicated.
 - D. **REVISE** Wall finishes PT-2, PT-3, PT-5, WC-2, WD-1, and WD-2 as indicated.

CLARIFICATIONS

1. Refer to attached for Pre-Bid Meeting Minutes and contractor sign-in sheet.

This addendum consists of 2 pages, excluding attachments.

END 00 90 02.

Attachments:

1. 2023.09.29 – MCC Woodstock University Center – Pre-bid Meeting Minutes
2. 06 42 16 Flush Wood Paneling
3. 07 21 00 Thermal Insulation
4. 09 30 13 Ceramic Tiling
5. 09 51 13 Acoustical Panel Ceilings
6. 09 54 26 Linear Wood Panels
7. 09 64 33 Wood Flooring
8. 09 65 19 Resilient Tile Flooring
9. 09 72 Wall Coverings
10. A11.01



DEMONICA KEMPER ARCHITECTS

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www.dka-design.com

McHenry County College
University Center at MCC
DKA Project Number: 22-050

Pre-Bid Meeting Minutes

222 E Church Street, Woodstock, IL - 9:30am, September 29, 2023

Attendees: Refer to Sign-In List

1. This Pre-Bid Meeting is **mandatory**. Refer to Addendum No. 2 for the meeting minutes and a list of GC's who will be able to submit bids for the project.
2. Note that all bid drawings were updated on the MCC bid website via Addendum No. 1 on Friday, September 22, 2023. The latest drawings all read "Issued for Bids". Make sure to check back to the MCC bid website for any future addenda.
3. Bids Due
 - a. **Date/Time: Tuesday, October 17, 2023 @ 9:30 AM**
 - b. **Location: Mr. James Julison, Director of Business Services, 8900 US Hwy 14, Building A, Room A248, Crystal Lake, IL 60012.**
 - c. Any bids received by after this time will be returned to the bidder unopened.
 - d. Bids will be opened publicly in the Board Room (A217) following the bid due date.
 - e. **Bids will be required to be held for 90 days after the due date.**
4. Bid Submittal
 - a. Submit in an **opaque, sealed envelope**. On the envelope, include the following:
 - i. Contractor Name and Address
 - ii. Bid Title
 - iii. Bid Opening Date and Time
 - b. Submittal shall include the following:
 - i. Document 00 41 13 – Bid Form
 - ii. Document 00 43 13 – Bid Bond
 - iii. Document 00 43 15 – Contractor Certification
 - iv. Document 00 43 29 – W9
 - v. Document 00 43 39 – MCC BEP Plan
 - I. The document reflects the college's aspirational goal of 20% of MBE / WBE / DBE inclusion. This form should be completed noting the included contractors or the attempts made to meet this goal.
 - vi. Document 00 43 43 – Certificate of Compliance with Illinois Prevailing Wage Law
 - vii. Document 00 44 00 – Substitution Sheet
5. Bonds
 - a. Bid Deposit:
 - i. Not less than ten percent (10%) of the bid amount.
 - ii. Make payable to the Board of Trustees, McHenry County College.
 - iii. Held for 45 days or award of contract, whichever comes first.
 - iv. The bid deposit will be forfeited by the successful bidder in the event of the bidders failure to enter into a contract.



- b. Performance bond and Labor & Material payment bond:
 - i. Required at 100% of the bid amount within 10 days of award of contract.
 - ii. Make payable to the Board of Trustees, McHenry County College.
6. AIA Document 201 – General Conditions of the Contract for Construction is included in specification section 00 72 13.
7. The apparent low bidder will be asked to produce a copy of **AIA Document A305 – Contractor’s Qualification Statement Form**, including references, immediately after the bid opening in order to make a recommendation to the Board of Trustees.
8. The General Contractor will be required to **identify its sub-contractors prior to award of the contract.**
9. All Contractors and Sub-Contractors are required to **pay prevailing wages** in accordance with the specifications and the Illinois Department of Labor.
10. GC shall employ **a full-time superintendent** to manage the day-to-day operations.
11. The college is tax exempt.
12. A project website is required as noted in specification section 01 31 00. Acceptable vendors are:
 - a. Submittal Exchange
 - b. Autodesk Planroom
 - c. Procore
13. Allowances:
 - a. Unforeseen Condition Allowance: \$20,000
14. Alternate Bids:
 - a. Alternate No. 1 – Deduct to eliminate liquidated damages.
 - b. Alternate No. 2 – Add to provide Trane BAC controls in lieu of individual thermostat controls.
 - c. Alternate No. 3 – Add / Deduct to provide electrical switchboard equipment from additional vendors noted in the specs.
15. Bidding Schedule:
 - a. Last RFIs Due: Wednesday, October 11, 2023 at 5:00 pm
 - b. **Final Addendum:** **Thursday, October 12, 2023**
 - c. **Bids Due:** **Tuesday, October 17, 2023 at 9:30 am**
 - d. **Bid Opening:** **Tuesday, October 17, 2023 at 9:35 am**
 - e. Board Meeting: Thursday, October 26, 2023
16. Construction Schedule:
 - a. **Commencement:** **On or after Wednesday, November 1, 2023 at 7:00 AM, pending receipt of building permit.**
 - b. **Substantial Completion:** **On or before Sunday, June 30, 2024, 11:59 pm**
17. Liquidated Damages:
 - a. \$1,000.00 per calendar day beyond the substantial completion date.



18. There will be no bid extensions.
19. Normal work hours shall be **7:00 am to 10:00 pm Monday thru Friday**. Any work outside of those normal work hours needs to be coordinated with the owner prior to commencement and comply with the noise level restrictions set by the Woodstock City Code.
20. Review general scope of the project.
 - a. Complete interior renovation of an entire existing building with limited areas left existing to remain or existing to be modified in the new work.
 - b. The building envelope, including existing doors, walls, window systems, and roof will be existing to remain with modifications as needed for new work.
 - c. The interior work will include all new walls, doors, glazing systems, ceilings, a folding partition system with associated structural support, and all finishes.
 - d. Mechanical work consists of new duct runs, rooftop exhaust fans and condensing units, and modifications and tie-in to existing mechanical AHUs to remain Plumbing will include demolition as required for new work a new tie-in to the second water main of the building. New toilet rooms and sinks will be provided. Existing toilet rooms and sinks will be left existing to remain.
 - e. Electrical and Technology scope will include complete demolition of the existing systems and the complete installation of new switchboards, panels, a rooftop mounted generator, and all lighting, power, fire alarm, AV, and Data systems.
 - i. *Switchgear installation sequencing review - If switchgear comes late, contractor will be responsible for installation around the college's class schedule during thanksgiving / winter / spring break.*
 - f. Fire protection scope will include the removal of all sprinkler heads and a modification of the existing branch lines and mains to coordinate with the new work.
 - g. Civil scope will include demolition of one of the existing water main connections to the building, cutting and capping the water main at the building and at the connection to the primary water line in the nearby road, and abandoning the remaining pipe below the parking lot.
 - i. *Work related to capping the abandoned pipe connection at the roadway requires an IDOT permit. IDOT does not allow for any temporary plating so work will need to be coordinated during a time that all work can be completed in one without any need for temporary plating.*
21. Estimated Project Cost: \$4,400,000.00
22. Site Logistics:
 - a. The parking lot will be available for the contractors use for portable toilets, storage containers, lay-out space and deliveries, and contractor parking. The parking lot gates will be fenced off by the contractor during the week. The college will be opening the parking lot for special weekend event parking for the city and the contractor will be responsible for removing / condensing all construction materials and securing the building for parking lot use by the general public.
 - i. *Locked gates will be required to be installed by the contractor at all entrances and opened to the public during the special events.*
 - b. Utility tie-in is acceptable to the existing building utilities.
 - c. Utility shutdowns are at the contractor's discretion. There are no occupied spaces of the building during the construction timeline. Any shutdowns outside of the building need to be coordinated with the AHJ and college prior to commencement of work.
 - d. Contractor shall be responsible for the protection of existing conditions, utilities, and other existing elements to remain from damage due to construction activities.
 - e. Contractor shall photograph existing conditions prior to beginning work.
23. Bidders may access the project site after this meeting by contacting...
Mr. Dave Dammon, Assistant Vice President of Facilities – ddammon@mchenry.edu – (815) 455-8564



24. Questions regarding the bidding documents or bidding procedures shall be direction to...
David Sikorski – dsikorski@dka-design.com

25. Site Walkthrough
 - a. Note that no structural work is required for the electrical generator on the roof as long as it is installed at the bays that are required.
 - b. Refer to forthcoming addenda for clarification on any salvage items that are required to be coordinated with the owner.
 - c. The drawings dated 9/19/23 with “ISSUED FOR BIDS” in the titleblock are the final bid drawings issued for the project. Do not reference the drawings previously uploaded noted as “ISSUED FOR PERMIT”.



McHenry County College
University Center at MCC
DKA Project Number: 22-050

Pre-Bid Meeting Attendee List

222 E Church Street, Woodstock, IL - 9:30am, September 29, 2023

1. Bob Tenuta, MCC
2. Dave Dammon, MCC
3. James Julison, MCC
4. David Sikorski, DKA
5. Dominick Demonica, DKA
6. Abby Wilansky, DKA
7. Brian Andrews, Stuckey Construction
8. Dave Stamos, WM Tonyan & Sons
9. Chuck Tonyan, WM Tonyan & Sons
10. George Morray, Troop Contracting
11. Tyler Brown, Carmichael Construction
12. Vahid Yarkeiviy, Rezzar Demolition
13. Mike Chesler, Bear Construction
14. Adam Hill, Bear Construction
15. Chad Sibigtroth, Pacific Construction Services
16. Grace Gherke, Gherke Construction
17. Paige Thies, George Sollit
18. Alec LaBelle, Doherty Construction
19. Luke Lizen, Reed Construction
20. Daniel Anderson, Maman Corporation
21. Ryan Wrzeszcz, Maman Corporation
22. JP Doherty Ent
23. Brenton Kluxdal, Fox Valley Fire & Safety
24. Jena Sarvis, Carey Electric
25. Andrew Carey, Ridgeview Electric
26. Rob D, Natural Heat and Power
27. Steve Blaszinski, Natural Heat and Power
28. Dave McCarter, Lohbauer Electric
29. Bruce Thsser, Lohbauer Electric
30. Roman Mudry, Aldo Enterprises
31. Chris Ziegler, Integrated Demolition
32. Glenn Lempa, Midwest Wrecking
33. Sean Chambers, Alliance Concrete Sawing
34. Clarissa Bueno, Terra Demolition
35. Ron Orfei, SMG
36. Ken Mowan, Hartwig Mechanical
37. Tony Schnalle, Associated Electric

**See attached for original sign-in sheet.*

PRE-BID Meeting attendance Sheet IFB230919 9/29/2023 9:30 am

University Center pre-Bid Meeting							
Company name	Representative First	Representative Last	Address1	Address2	Phone	E-Mail	Notes
Stucky Construction	Brian	Andrews	2010 N. Lewis	60087	847-336-8575	brian@stuckyconstruction.com	
Wm Tompkins	DAVIS	STAMOS	1400 RT 31	MCHENRY	815-385-4466	dstamos@wmtomkins.com	
Brenton Kluxman							
Fox Valley Fire	BRENTON	KLUXMAN	2730 Pennick	Elgin	224-483-2569	Brenton.Kluxman@FoxValleyFire.com	
Carey Electric	Jana	SICORSKI	3209 Waukegan	Mchenry	224-412-2684	jsicorski@cccinc.org	
Ridgeview Electric	Andrew	Carey	1400 Ridgeview	Mt. Perry	815-385-8282	acarey@ridgeviewelectric.com	
National Heat & Power	Steve	BLAZINSKI	700 Oakton	Elkhart	247-272-0250	steve@nationalhvac.com	
NATIONAL HEAT & POWER	STEVE	BLAZINSKI	700 OAKTON	ELKHART	(847) 456-7570	STEVE@NATIONALHVC.COM	
Lehman Electric	Dave	M. Lester	211 E Higgins	Carlisle	847-741-6241	Dave@lehmanelectric.com	
Owner's representatives in attendance:							
James Julison							
Dave Dammond							
David Sicorski							

TROOP CONTRACTING, GEORGE MORRAY 648 EXECUTIVE DR 630 802 7660
 WILLOWBROOK, IL ESTIMATING @
 TROOP CONTRACTING.COM

J.P. Dougherty ENT. P.O. Box 1248 Woodstock 815-482-9719. ATimberworks@gmail.com

Rezzar Demolition Vahid Yarveicy 312-468-4188 Vahid@rezzardemolition.com

Bear Construction Mike Chester 1501 Rohlwing Rd 847-962-9913 mchester@bearcc.com

Bear Construction Adam Hill 1501 Rohlwing Rd 847-322-7503 Adamh@bearcc.com



ARCHITECT OF RECORD
DEMONICA KEMPER ARCHITECTS
 125 N. HALSTED STREET, SUITE 301
 CHICAGO, IL 60661
 P: 312.496.0000

MEP-PP-T-ENGINEERS
2010 ENGINEERING GROUP, LLC
 1216 TOWER ROAD
 SCHAUMBURG, IL 60173
 P: 847.882.2010 F: 847.882.2201

CIVIL ENGINEERS
HRG GREEN
 1391 CORPORATE DRIVE, SUITE
 203 MCHENRY, IL 60050
 P: 815.385.1778 F: 815.385.1781

MCHENRY COUNTY COLLEGE
UNIVERSITY CENTER AT MCC
 WOOD VENEER PANEL
 222 E CHURCH ST
 WOODSTOCK, ILLINOIS 60098
 DKA PROJECT NO: 22-050

KEY PLAN:

SHEET STATUS: 9.19.23
ISSUED FOR BIDS

NO.	DESCRIPTION:	DATE:
1	Addendum #2	10/2/23

SHEET TITLE:
FINISH PLAN

SHEET NUMBER:
A11.01

10/2/2023 12:44:40 PM

FINISH PLAN SYMBOLS LEGEND:

(X) WALL FINISH TYPE (X) WALL BASE TYPE (X) FLOOR FINISH TYPE

FINISH PLAN GENERAL NOTES:

1. PAINT ALL EXPOSED CONDUIT, DUCTWORK, PIPING, ETC. IN ALL FINISHED SPACES. (PT-7) REFER TO INTERIOR FINISH PLANS AND REFLECTED CEILING PLANS FOR CLARIFICATIONS.
 2. PAINT ALL EXPOSED METAL ON EXTERIOR INCLUDING, BUT NOT LIMITED TO: CONDUIT, PIPING, FLASHING, MECHANICAL FLUES AND DUCTS, AND HOLLOW METAL FRAMES AND DOORS.
 3. PROVIDE CEMENTITIOUS SELF-LEVELING UNDERLAYMENT AT REMOVAL OF EXISTING FLOOR DRAINS AS REQUIRED TO PROVIDE A LEVEL SUBSTRATE FOR NEW FLOOR FINISH.
 4. ALL FINISHES ARE MONUMENTAL PER ROOM UNLESS NOTED OTHERWISE. HOLLOW METAL DOORS AND FRAMES TO BE PAINTED PT-8 UNLESS NOTED OTHERWISE. EXISTING HM FRAMES/DOORS WITHIN SCOPE TO BE REPAINTED/TOUCHED AS NEEDED WITH PT-8 U.S.G.
1. AT ALL LOCATIONS WHERE CASEWORK IS TO BE INSTALLED, THE SUBSEQUENT BASE TYPE SPECIFIED FOR EACH ROOM SHALL BE INSTALLED OVER CASEWORK TOE KICKS UNLESS NOTED OTHERWISE. REFER TO FLOOR PLANS FOR CASEWORK LOCATIONS.
 2. PAINT ALL GYP. BD. CEILINGS PT-1 UNLESS NOTED OTHERWISE.
 3. ALL CARPET TILE TO BE INSTALLED QUARTER TURNED UNLESS SPECIFIED OTHERWISE.

WALL FINISH TYPES:

TYPE	DESCRIPTION	MANUFACTURER	NAME#/COLOR
PT-1	GENERAL PAINT	BENJAMIN MOORE	2176-70 CHALK WHITE
PT-2	ACCENT PAINT	BENJAMIN MOORE	2060-10 SYMPHONY BLUE
PT-3	ACCENT PAINT	BENJAMIN MOORE	1476-SOURREL TAIL
PT-4	ACCENT PAINT	BENJAMIN MOORE	2105-00 ABLON
PT-5	ACCENT PAINT	BENJAMIN MOORE	2050-50 WATERFALL
PT-6	ACCENT PAINT	BENJAMIN MOORE	1610-FRENCH BERET
PT-7	ACCENT PAINT	BENJAMIN MOORE	1631 MIDNIGHT OIL
PT-8	ACCENT PAINT	BENJAMIN MOORE	1599 MARINA GRAY
WC-1	VINYL WALLCOVERING	WOLF-GORDON	HOLBORN FOG
WC-2	VINYL WALLCOVERING	MOMENTUM	TUMBLE - WHITE SPRUCE
WT-1	PORCELAIN TILE	FLORIDA TILE	SONO CANVAS WHITE
LWP	LINEAR WOOD PANEL		SEE SPEC
WD-1	WOOD VENEER PANEL		RIFT CUT WALNUT VENEER OVER MDF, STAINED TO MATCH ARCHITECT'S SAMPLE
WD-2	WOOD VENEER PANEL		RIFT CUT WHITE OAK VENEER OVER MDF, STAINED TO MATCH ARCHITECT'S SAMPLE

WALL BASE TYPES:

TYPE	DESCRIPTION	MANUFACTURER	NAME#/COLOR
RB1	4" COVER RUBBER BASE	JOHNSONITE	63 BURNT LUMBER
RB2	4" STRAIGHT RUBBER BASE	JOHNSONITE	63 BURNT LUMBER
RN	RUBBER NOSING RCN-XX-A	JOHNSONITE	63 BURNT LUMBER

FLOOR FINISH TYPES:

TYPE	DESCRIPTION	MANUFACTURER	NAME#/COLOR
CPT-1	CARPET TILE	PATCRAFT	10467 SLOPE 00450 POINT INSTALL: MONOLITHIC
CPT-2	CARPET TILE	PATCRAFT	1046 RISE 0050 RATIO INSTALL: STAGGER
CPT-3	CARPET TILE	PATCRAFT	10465 RISE 00450 POINT INSTALL: STAGGER
T-1	PORCELAIN TILE	VIRGINIA TILE	WOOD WOOD BROWN 8x8
T-3	PORCELAIN TILE	VIRGINIA TILE	ALTA WHITE 24x48
SC	SEALED CONCRETE	SEE SPEC	COLOR: CLEAR
LVT-1	LUXURY VINYL TILE	PATCRAFT HOMEGRAN	CELLAR
WD-1	WOOD FLOOR	NYDRE FLOORING	MAPLE - BLACK FOREST (5 1/4")
QT-1	QUARTZ TILE	UPOFLOOR	MOZAIC CONGLOMERATE GREY
WLKF	WALK OFF MAT	SHAWCONTRACT	WELCOME II TILE - CHARCOAL

FLOOR TRANSITION TYPES:

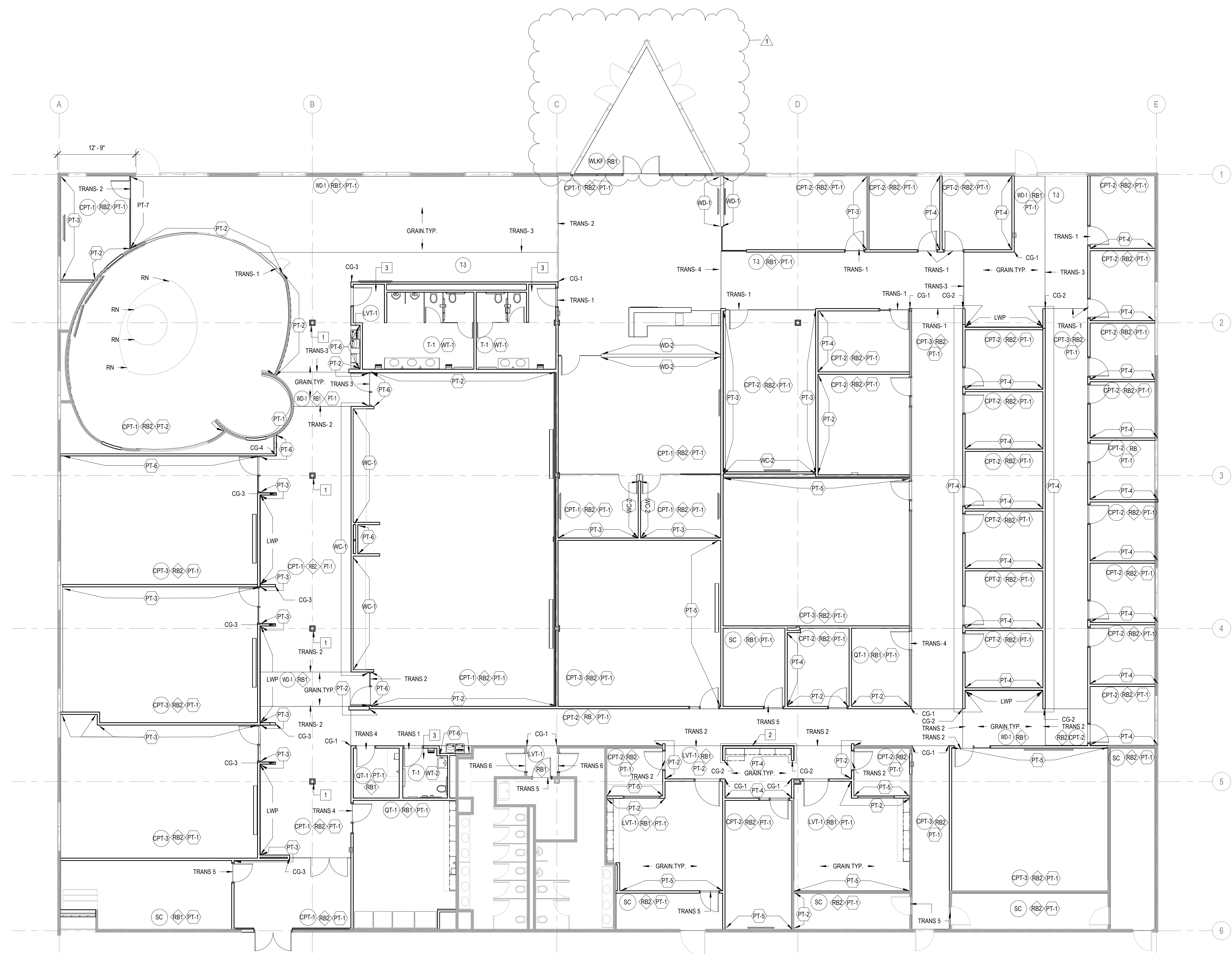
TYPE	DESCRIPTION	MANUFACTURER	NAME#/COLOR
TRANS-1	TILE TO CARPET OR 1/2" TO 1/2"	JOHNSONITE	JOHNSONITE SUBFLOOR LEVELER TO BRING ADJACENT SURFACES FLUSH AND PROVIDE SCHLUTER SCHEINE BETWEEN FLOOR TYPES.
TRANS-2	CARPET TO WOOD OR 1/2" TO 1/2"	JOHNSONITE	JOHNSONITE SUBFLOOR LEVELER TO BRING ADJACENT SURFACES FLUSH AND PROVIDE SCHLUTER SCHEINE BETWEEN FLOOR TYPES.
TRANS-3	WOOD TO TILE OR 1/2" TO 1/2"	SCHLUTER	SCHLUTER SCHEINE
TRANS-4	CARPET TO QUARTZ TILE OR 1/2" TO 1/2"	TARKETT JOHNSONITE	SLIM LINE TRANSITION SLT-XX-A
TRANS-5	CARPET OR LVT TO SEALED CONCRETE OR 1/2" TO 0"	TARKETT JOHNSONITE	SLIM LINE TRANSITION SLT-XX-L
TRANS-6	LVT TO EXISTING TILE OR 1/2" TO 1/2" REDUCER	TARKETT JOHNSONITE	TARKETT JOHNSONITE REDUCER CRS-XX-A

CORNER GUARD

TYPE	MANUFACTURER	NAME#/COLOR
CG-1	INPRO	3/4" X 3/4" ADHESIVE MOUNTED, 4H. COLOR: DESIGNER WHITE 101
CG-2	INPRO	1/2" X 1/2" ADHESIVE MOUNTED, 4H. COLOR: TAUPE 013
CG-3	INPRO	1/2" X 1/2" ADHESIVE MOUNTED, 4H. COLOR: MOONSOON 0378
CG-4	INPRO	1/2" X 3/4" ADHESIVE MOUNTED, 4H. COLOR: CASTLE 0266

FINISH PLAN REFERENCED NOTES:

1. PAINT COLUMN WITH PT-6 AND RB BASE.
2. REFER TO INTERIOR ELEVATIONS FOR EXTENT OF LWP.
3. PROVIDE SCHLUTER DILEX-AHK AT ALL TILE FLOOR PERIMETER BETWEEN FLOOR AND WALL TILE AND VERTICAL INSIDE TILE CORNERS. PROVIDE SCHLUTER JOLLY AT ALL OUTSIDE TILE CORNERS.



1 FINISH PLAN
 1/8" = 1'-0"

SECTION 06 42 16 - FLUSH WOOD PANELING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Flush wood paneling. (WD-x)
- 2. Wood furring, blocking, shims, and hanging strips for installing flush wood paneling that is not concealed within other construction.
- 3. Shop finishing of flush wood paneling.

- B. Related Requirements:

- 1. Section 06 10 53 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing paneling that is concealed within other construction before paneling installation.
- 2. Section 06 41 16 "Plastic-Laminated-Faced Architectural Cabinets" for wood veneer and solid wood material information.

1.3 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that paneling can be installed as indicated.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

- B. Shop Drawings: For flush wood paneling.

- 1. Include plans, elevations, sections, and attachment details.
- 2. Show locations and sizes of furring and blocking, including concealed blocking specified in other Sections.

3. For paneling produced from premanufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes.
 4. For paneling veneered in fabrication shop, show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.
- C. Samples: For each exposed product and for each color and finish specified, in manufacturer's or fabricator's standard size.
- D. Samples for Verification: For the following:
1. Lumber for Transparent Finish: Not less than 5 inches wide by 12 inches long, for each species and cut, finished on one side and one edge.
 2. Veneer-Faced Panel Products for Transparent Finish: 8 by 10 inches, for each species and cut. Include at least one face-veneer seam and finish as specified.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of products.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver paneling until painting and similar operations that might damage paneling have been completed in installation areas. Store paneling in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.
- B. Field Measurements: Where paneling is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Locate concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed/concealed by construction and indicate measurements on Shop Drawings.

- C. Established Dimensions: Where paneling is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PANELING, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of flush wood paneling (wood-veneer wall surfacing) indicated for construction, finishes, installation, and other requirements.
 - 1. The Contract Documents contain requirements that are more stringent than the referenced woodwork quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.

2.2 FLUSH WOOD PANELING (WOOD-VENEER WALL SURFACING) (WD-1 and WD-2)

- A. Grade: Premium.
- B. Wood Species and Cut:
 - 1. WD-1: Walnut; Quarter cut veneer.
 - a. Stained to match Architect's sample.
 - 2. WD-2: White Oak; Rift cut veneer.
 - a. Stained to match Architect's sample.
- C. Veneer Matching Method:
 - 1. Adjacent Veneer Leaves: Book match.
 - 2. Within Panel Face: Running match.
- D. Panel-Matching Method:
 - 1. No matching is required between adjacent panels. Select and arrange panels for similarity of grain pattern and color between adjacent panels.
- E. Panel Core Construction: Fire-retardant particleboard or fire-retardant MDF.
 - 1. Thickness: As indicated on Drawings.
- F. Exposed Panel Edges: Inset solid-wood or wood-veneer matching faces.
- G. Panel Reveals: 1"x3/4" Aluminum Angle as shown on drawings.

- H. Fire-Retardant-Treated Paneling: Panels shall consist of wood-veneer and fire-retardant particleboard or fire-retardant, medium-density fiberboard (MDF). Panels shall have a flame-spread index of 25 or less and a smoke-developed index of 450 or less per ASTM E 84, and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.
- I. Assemble panels by gluing and concealed fastening.

2.3 FLUSH WOOD PANELING (SOLID WOOD WALL SURFACING) (WD-3 and WD-4)

- A. Grade: Premium.
- B. Wood Species and Cut:
 - 3. WD-3: Solid White Oak; Rift cut.
 - a. Stained to match Architect's sample.
 - 4. WD-4: Solid Walnut; Quarter cut.
 - a. Stained to match Architect's sample.
- C. Panel-Matching Method:
 - 1. No matching is required between adjacent panels. Select and arrange panels for similarity of grain pattern and color between adjacent panels.
- D. Exposed Panel Edges: Inset solid-wood matching faces.
- E. Panel Reveals: 1"x3/4" Aluminum Angle as shown on drawings.
- F. Fire-Retardant-Treated Paneling: Panels shall consist of wood-veneer and fire-retardant particleboard or fire-retardant, medium-density fiberboard (MDF). Panels shall have a flame-spread index of 25 or less and a smoke-developed index of 450 or less per ASTM E 84, and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.

2.4 MATERIALS

- A. Materials, General: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.
- B. Wood Moisture Content: 5 to 10 percent.
- C. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.
 - 1. MDF: ANSI A208.2, Grade 130.

2.5 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and with fire test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
 3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
 2. For items indicated to receive a stained or natural finish, use organic resin chemical formulation.
 3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
- C. Fire-Retardant Fiberboard: MDF panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Panel Source International, Inc.; Pyroblock Platinum.
 - b. SierraPine; Medite FR.

2.6 INSTALLATION MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber Fire retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls.

- C. Installation Adhesive: Product recommended by panel fabricator for each substrate for secure anchorage.

2.7 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Complete fabrication, including assembly, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Notify Architect seven days in advance of the dates and times paneling fabrication will be complete.
- C. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.8 SHOP FINISHING

- A. General: Finish paneling at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing paneling, as applicable to each unit of work.
 - 1. Backpriming: Apply two coats of sealer or primer, compatible with finish coats, to concealed surfaces of paneling.
- C. Transparent Finish:
 - 1. Grade: Same as item to be finished.
 - 2. Finish: System - 5, conversion varnish.
 - 3. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
 - 4. Staining: Match Architect's sample.
 - 5. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
 - 6. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition paneling to humidity conditions in installation areas.
- B. Before installing paneling, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

- A. Grade: Install paneling to comply with quality standard grade of paneling to be installed.
- B. Install paneling level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches. Install with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
 - 1. For flush paneling with revealed joints, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/16 inch.
- C. Anchor paneling to supporting substrate with concealed panel-hanger clips.
 - 1. Do not use face fastening unless covered by trim or otherwise indicated.
- D. Complete finishing work specified in this Section to extent not completed at shop or before installation of paneling. Fill nail holes with matching filler where exposed.
 - 1. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are shop applied.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective paneling, where possible, to eliminate defects. Where not possible to repair, replace paneling. Adjust for uniform appearance.
- B. Clean paneling on exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 06 42 16

SECTION 07 21 00 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Glass-fiber blanket insulation.
2. Mineral-wool blanket insulation.
3. Polyisocyanurate foam-plastic board.
4. Spray polyurethane foam insulation for miscellaneous voids.

- B. Related Requirements:

1. Section 09 29 00 "Gypsum Board" for sound attenuation blanket used as acoustic insulation.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation. B. Protect foam-plastic board insulation as follows:

1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET INSULATION

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. CertainTeed Corporation.
 - 2. Johns Manville.
 - 3. Owens Corning.
- B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flamespread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.2 MINERAL-WOOL BLANKET INSULATION

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Owens Corning.
 - 2. Roxul Inc.
 - 3. Thermafiber.
- B. Unfaced, Mineral-Wool Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smokedeveloped indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.3 POLYISOCYANURATE FOAM-PLASTIC BOARD

- A. Polyisocyanurate Board, Foil Faced : ASTM C 1289, foil faced, Type I, Class 1 or 2.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Atlas Roofing Corporation.
 - b. Dow Chemical Company (The).
 - c. Hunter Panels.
 - d. Johns Manville.
 - 2. Provide product that achieves a minimum R-value of 15.3 at 2.5 inch thickness.
 - 3. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

2.4 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
 - 1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.

2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- B. Adhesively Attached, Angle-Shaped, Spindle-Type Anchors: Angle welded to projecting spindle; capable of holding insulation of specified thickness securely in position with selflocking washer in place.
1. Angle: Formed from 0.030-inch- thick, perforated, galvanized carbon-steel sheet with each leg 2 inches square.
 2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- C. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

2.5 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
1. Spray Polyurethane Foam Insulation: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF CAVITY-WALL INSULATION

- A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates.
 - 1. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Section 04 20 00 "Unit Masonry."

3.4 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 - 4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

3.5 INSULATION SCHEDULE

- A. Glass-Fiber or Mineral Wool Blanket Insulation: For use as thermal insulation in cavities formed by framing members at exterior wall applications where indicated on drawings.
- B. Polyisocyanurate foam-plastic board: For use as thermal insulation over exterior walls where indicated on Drawings.
- C. Spray polyurethane foam insulation: For use as thermal insulation at miscellaneous voids where required to prevent gaps in thermal continuity.

END OF SECTION 07 21 00

SECTION 09 30 13 - CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Ceramic tile (T-x and WT-x).
2. Metal edge strips.

- B. Related Requirements:

1. Section 07 92 00 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
2. Section 09 29 00 "Gypsum Board" for cementitious backer units.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile." C.

Module Size: Actual tile size plus joint width indicated.

- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide full sheets of each color blend.
2. Metal edge strips in 6-inch lengths.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
1. Installer employs installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
 - 1. Metal edge strips.

2.2 PRODUCTS, GENERAL

- A. Dynamic Coefficient of Friction (DCOF): For tile installed on walking surfaces, provide products with a minimum threshold of 0.42 as determined by testing identical products using a BOT 3000 device per ANSI A137.1.
- B. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
- C. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- D. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
 - 1. Where tile is indicated for installation in wet areas, do not use back- or edge mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS (T-x and WT-x)

- A. See Legends on 'Finish Plan' drawings for product information.

2.4 SETTING MATERIALS

- A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
 - 1. Reinforcing Wire Fabric: Galvanized, welded-wire fabric, 2 by 2 inches by 0.062inch diameter; comply with ASTM A 185/A 185M and ASTM A 82/A 82M, except for minimum wire size.
- B. Modified Dry-Set Mortar (Thinset): ANSI A118.4.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bostik, Inc.
 - b. Laticrete International, Inc.
 - c. MAPEI Corporation.
 - d. TEC; H.B. Fuller Construction Products Inc.
 - 2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
 - 3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
- C. Medium-Bed, Modified Dry-Set Mortar: Comply with requirements in ANSI A118.4. Provide product that is approved by manufacturer for application thickness of 5/8 inch.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bostik, Inc.
 - b. Laticrete International, Inc.
 - c. MAPEI Corporation.
 - d. TEC; H.B. Fuller Construction Products Inc.
 - 2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.

2.5 GROUT MATERIALS

- A. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bostik, Inc.
 - b. Laticrete International, Inc.
 - c. MAPEI Corporation.
 - d. TEC; H.B. Fuller Construction Products Inc.

2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F, respectively, and certified by manufacturer for intended use.
3. Provide 100% solids epoxy product.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips:
 1. At all inside corners: Schluter, Inc.; Dilex-AHK, in satin anodized aluminum finish.
 2. At all outside corners: Schluter, Inc.; Jolly, in satin anodized aluminum finish.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- D. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

2.7 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Exterior tile floors.
 - b. Tile floors in wet areas.
 - c. Tile swimming pool decks.
 - d. Tile floors in laundries.

- e. Tile floors consisting of tiles 8 by 8 inches or larger.
 - f. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
- 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
- G. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- H. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
- 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- I. Metal Edge Strips: Install at locations indicated on drawings.

3.4 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.5 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.6 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
 1. Ceramic Tile Installation : TCNA F112 and ANSI A108.1C; cement mortar bed (thickset) bonded to concrete.
 - a. Bond Coat for Cured-Bed Method: Modified dry-set mortar.
 - b. Grout: High-performance sanded grout.
- B. Interior Wall Installations, Wood or Metal Studs or Furring:
 1. Ceramic Tile Installation : TCNA W244C or TCNA W244F; thinset mortar on cementitious backer units or fiber-cement backer board .
 - a. Thinset Mortar: Modified dry-set mortar.
 - b. Grout: Water-cleanable epoxy grout.

END OF SECTION 09 30 13

SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for interior ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:
 - 1. Acoustical Panels: Set of 6-inch- square Samples of each type, color, pattern, and texture.
 - 2. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch-long Samples of each type, finish, and color.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finishes to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed.
 - 2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected

against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

- 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

- 1. Flame-Spread Index: Class A according to ASTM E 1264.
- 2. Smoke-Developed Index: 50 or less.

2.3 ACOUSTICAL PANELS

- A. Ceiling Type 2: For use with 15/16 inch grid.

- 1. Manufacturer:

- a. Armstrong, Inc.; Cortega, with angled tegular edge.

- 1. Modular Size: 24 inches by 24 inches by 5/8 inches.
- 2. Color: White.

- B. Ceiling Type 2C and 4:

- 1. Manufacturer:

- a. Armstrong, Inc.; Cirrus Second Look beveled tegular edge

1. Modular Size: 24 inches by 48 inches by 3/4 inches.
2. Color: White.

C. Ceiling Type 3:

1. Manufacturer:

a. 9Wood; 2700 Series

1. Modular Size: O.C. Spacing 4 inches by 3/4 inches depth.
2. Color: Match Architects Sample

D. Ceiling Type 5:

1. Manufacturer:

a. 9Wood; 5100 Series

1. Modular Size: 24 inches by 24 inches by 3/4 inches.
2. Color: Match Architects Sample.
3. Perforations: Match Architects Sample.

2.4 METAL SUSPENSION SYSTEM

A. For tiles indicated for use with 15/16 inch grid:

1. Manufacturers:

a. Armstrong, Inc.; Prelude XL 15/16.

2. Structural Classification: Intermediate Duty.
3. Color 1: White for standard tiles.
4. Color 2: Match 9Wood ceilings as selected by Architect.

2.5 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E 488/E 488M or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.

- a. Type: Postinstalled expansion anchors.
- b. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B 633, Class SC 1 (mild) service condition.

- B. Wire Hangers, Braces, and Ties: Provide wires as follows:
 - 1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 2. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch-diameter wire.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
 - 1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
 - 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
 - 3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.
- B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

- A. Install acoustical panel ceilings according to ASTM C 636/C 636M, seismic design requirements, and manufacturer's written instructions.
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 - 6. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 - 7. Do not attach hangers to steel deck tabs.
 - 8. Hangers may be attached to steel deck, with limitations on spacing and weight as indicated on Structural drawings.
 - 9. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 - 10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
 - 2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.
 - 1. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
 - 2. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 - 3. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension system surfaces and panel faces flush with bottom face of runners.
 - 4. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 - 5. Protect lighting fixtures and air ducts according to requirements indicated for fire resistance-rated assembly.

3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.
- B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 13

09 54 26 – LINEAR WOOD PANELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Linear wood ceiling panels with a fixed member size.
 - 2. Concealed metal suspension system for linear wood ceiling panels.

1.2 REFERENCES

- A. ASTM A 641: Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire; 1992.
- B. ASTM C 423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 1990.
- C. ASTM C 635: Standard Specifications for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
- D. ASTM C 636: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1992.
- E. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials; 1991.
- F. ASTM E 580: Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 1991.
- G. AWI (QSI): Architectural Woodwork Quality Standards Illustrated; 2003.
- H. CISCA: Ceiling Systems Handbook.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer, approved by linear wood panel manufacturer, who has completed projects similar in species, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Inspection: All work must pass inspection and approval of architect, as well as the local codes and regulations or authorities having jurisdiction.

- C. Single-Source Responsibility for linear wood panel system: Obtain each type of linear wood panel from a single fabricator, with in-house Shop Drawing capabilities, in-house assembly and finishing capabilities, and with resources to provide products of consistent quality in appearance and physical properties without delaying the project.
- D. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying project.

1.4 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples: For verification of each type of exposed finish required, prepared on samples of size indicated below. Where finishes involve normal color and texture variations, include sample sets showing the range of variations expected.
 - 1. 12" x 18" samples of each panel type, pattern, and color.
- C. Coordination and Shop Drawings: Provide Shop Drawings/Coordination Drawings for all linear wood ceilings, inclusive of product details.
 - 1. Coordinate layout and installation of linear wood ceiling panels and suspension system components with other construction elements that penetrate ceiling or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, partition assemblies and all perimeter conditions. Provide reflected ceiling plans for review that include construction elements listed above.

1.5 PROJECT CONDITIONS

- A. Space Enclosure and Environmental Limitations: Do not install linear wood panels until spaces are enclosed and weatherproof, wet-work in spaces is completed and dry, work above ceilings is complete, and ambient temperature and humidity conditions are being maintained at the levels indicated for Project when occupied for its intended use.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery & Unloading: Coordinate crate sizes, weights, unloading options, and delivery schedule with manufacturer prior to fabrication. Deliver linear wood panels and suspension system components to Project Site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other mistreatment.
- B. Acclimatization: Before installing linear wood panels, permit them to reach room temperature and a stabilized moisture content (at least 72 hours) per AWI standards.

- C. Handling: Handle linear wood panels carefully to avoid chipping edges or damaging units in any way.
- D. Protection:
 - 1. Personnel: Follow good safety and industrial hygiene practices during handling and installing of all products and systems, with personnel to take necessary precautions and wear appropriate protective equipment as needed. Read related literature for important information on products before installation. Contractor to be solely responsible for all personal safety issues during and subsequent to installation; architect, specifier, owner, and manufacturer will rely on contractor's performance in such regard.
 - 2. Existing completed work: Protect completed work above suspension system from damage during installation of suspension system components.

1.7 WARRANTY

- A. Warranties: Provide owner with a (1) year warranty for material and workmanship on all installed products.
 - 1. Manufacturers: All materials and associated components shall be warranted for (1) one year for material and workmanship.
 - 2. Installer: All work shall be warranted for (1) year from final acceptance of completed work.

PART 2 - PRODUCTS

2.1 LINEAR WOOD CEILING PANELS

- A. Basis-of-Design: Provide 9Wood; 2700 Panelized Linear Wood, or comparable product by one of the following:
 - 1. ACGI Walls + Ceilings.
 - 2. Norton Industries, Inc.
 - 3. Rulon International.
- B. Design Parameters:
 - 1. Species: Maple, grade A.
 - 2. Member Size: 5-1/4" wide by 3/4" thick.
 - 3. Fire Rating: Class 1(A) Fire Rating.
 - 4. Finish: Custom stain selected by Architect.
 - 5. Reveal Treatment: Provide with acoustic backer at ceiling panels.
 - 6. Members/LF: 2 Members per LF.
 - 7. Member Edge Profile: Eased.

8. Assembly Style: Pre-assembled, panelized; using flat backer to connect members of individual ceiling panels. Flat backer to be painted color black in a gloss level 2 finish.
 9. Mounting Hardware for ceiling panels: Direct screwed to metal suspension system.
- C. Acoustic Backer: Owens Corning; Select Sound Black Acoustic Blanket, 1 inch thickness.

2.2 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal T-Grid Suspension System: Provide standard interior Metal Heavy Duty 15/16" suspension T-Grid system using Main Runners, Cross-tees, Wall Angle or Shadow Moldings of types, structural classifications, in black finish, that comply with applicable ASTM C 635 requirements. Comply with all applicable codes and ordinances.
- B. Attachment Devices: Size for 3 times the design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- C. Wire, Braces, Ties, Hanger Rods, Flat Hangers and Angle Hangers: Provide wires, rods and hangers that comply with applicable ASTM specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General: Examine substrates and structural framing to which linear wood panels attach or abut, with installer present, for compliance with requirements specified in this and other sections that affect ceiling installation and anchorage. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Layout: Measure each area and establish the layout of linear wood panels to balance border widths at opposite edges. Avoid using less-than-half-width panels at borders, and conform to the layout shown on linear wood panel manufacturer's approved Shop Drawings.

3.3 INSTALLATION

- A. General: Install linear wood panels to comply with manufacturer's instructions and CISCA "Ceiling Systems Handbook".
- B. Attachments: Suspend ceiling hangers from building's structural members per manufacturer's instructions and in compliance with all local codes and regulations.

- C. Installation of Metal T-Bar Grid: Install, align, brace, tie-off, mount, handle interferences, and space suspension T-Grid in accordance with suspension manufacturer's instructions and in compliance with all local codes and regulations.
- D. Installation of linear wood panels: Install in accordance with manufacturer's installation instructions and in compliance with all local codes and regulations. Install with undamaged edges and fitted accurately to suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit, as required.
 - 1. At linear wood panels that require repeated removal, however infrequent, for access to items, equipment, fixtures, valves, etc., attach linear wood panels to metal suspension system using threaded T-bolts or attachment method recommended by manufacturer for repeated removal.
- E. Suspension Runners: Install suspension system runners so they are square and securely interlocked with one another. Install number and use on-center spacing per wood ceiling manufacturer's instructions, as indicated on approved Shop Drawings and in compliance with all local codes.

3.4 CLEANING

- A. General: Clean exposed wood surfaces of linear wood panels. Comply with manufacturer's instructions for cleaning and touchup of minor finish damage. Remove and replace linear wood panel components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 54 26

SECTION 09 64 33 – WOOD FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Nydree Acrylic Infused Engineered Hardwood Flooring with standard Pedestrian™ 2.0 UV-cured Urethane w/Ceramic particles. (WD-x)
- B. Maintenance materials.
- C. Non-infused, stained to match accessories including: Flush Bullnose Stair Nosing, Flush Square Stair Nosing, Stair Tread, Stair Riser, T-Molding, Type A Reducer Strip, Type B Reducer Strip, Type C Flat Strip, 4" Base Molding and ¾" Quarter Round.

1.2 ACTION SUBMITTALS

- A. Submit product data in accordance with Section 01 33 00, including manufacturer's installation and maintenance instructions.
- B. Shop Drawings: Show floor pattern layout.
- C. Submit three representative samples of Nydree acrylic infused flooring Width x 9" in the final color(s) or custom color(s), and species, as selected by the owner or their representative.
- D. For Initial color selection use Nydree Product Spec Sheets that show the color range to be expected.
- E. Mock-up material for verification: Provide material necessary to show the full color range within the flooring selected.

1.3 MAINTENANCE MATERIALS SUBMITTALS

- A. Some flooring material (attic stock) should be set aside in case future repairs are needed.

1.4 QUALITY ASSURANCE

- A. Installer: Shall be experienced in the wood and/or vinyl tile flooring industry and shall have a minimum of five (5) years experience in the installation of similar products.
- B. Verify with the owner or their representative that the flooring is the correct species, color, width, grain, finish (gloss level) and quality (fit) prior to installation. If there is any doubt, do not install the flooring. Contact Nydree Flooring immediately.

1.5 STORAGE, DELIVERY, AND HANDLING

- A. Cartons of wood should be stored in dry, well ventilated storage areas or warehouses. Never store cartons of flooring outdoors. The idea storage environment should be maintained at 30-55% relative humidity and 60-80°F (15-26°C). Do not store cartons of flooring directly on warehouse floors.
- B. Deliver the flooring to a preferred 60-80°F (15-26°C), 30-55% relative humidity job site in unopened cartons. Protect flooring from exposure to moisture.
- C. Cartons of Nydree Flooring will arrive to the job site wrapped in a polyethylene bag and typically shrink-

wrapped to maintain the flooring at its most desirable installation moisture content. If material needs to be inspected prior to flooring installation, carefully remove the shrink-wrap and lift off polybag. After inspecting, put polybag back over pallet of flooring and secure with tape until installation. DO NOT REMOVE NYDREE ENGINEERED FLOORING FROM THE POLYBAG UNTIL THE DAY OF INSTALLATION. *(THE POLYBAG IS DIRECTLY BENEATH THE SHRINK WRAP)*. Flooring that has not been used within a day should be returned to the polybag until ready for installation. No acclimation time is necessary or desired when installing Nydree Flooring. Temperature of material and adhesives should be acclimated to 60-80°F (15-26°C).

1.6 FIELD CONDITIONS

- A. Provide permanent HVAC operation (2 week minimum) and permanent lighting prior to installation.
- B. Maintain room temperature between 60°F (15°C) minimum and 80°F (26°C). The ideal relative humidity for Nydree Flooring installation is between 30% and 55%, prior, during and after the installation. Keep in mind that if the relative humidity drops below 30% for extended periods, the flooring could shrink causing surface splits and gaps.
- C. Do not install flooring until all other significant construction work is complete. Moisture producing activities such as drywall, concrete, masonry, painting and grouting must be complete and cured.

1.7 WARRANTY

- A. Nydree Flooring offers a Limited Lifetime Infused Wear Surface Warranty and Limited Lifetime Structural Defect Warranty. The Pedestrian finish offers a Limited Wear Through Warranty (10 years for commercial applications, 50 years for residential applications).
- B. While alternate adhesives can be used with Nydree Flooring, we strongly recommend the use of Nydree SB1587 moisture retarding adhesive. SB1587 offers an Adhesive Bond Limited Lifetime Warranty as well as a 10 year Concrete Subfloor Moisture Protection Limited Warranty.
- C. While alternate maintenance materials can be used with Nydree Flooring, we strongly recommend the use of Nydree Natural Floor Cleaner.
- D. Please contact Nydree Flooring for a complete copy of the warranties above or visit the website at www.nydreeflooring.com.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. FloorScore®: Nydree Flooring is FloorScore® Indoor Air Quality Certified. Reg#: SCS-FS-02349.
- B. FSC Certification: If FSC certification is required for a flooring installation (Leed building, etc.), please specify FSC on all drawings and include on all purchase order(s). Slight upcharge will apply. FSC Certificate Code: SCS-COC-003343. Trademark License Code: FSC-C100512. Reclaimed Oak is not available as FSC Certified.
- C. Composite Wood Products: Nydree's laminated wood flooring uses ULEF resins and is compliant with CARB Phase 2 regulations. Nydree flooring does not utilize any urea formaldehyde resins. The 1/10" (2.54mm) acrylic infused wear layer is laminated to the multi-ply plywood platform using a non-formaldehyde adhesive.
- D. Fire Ratings: Maple has a Class I rating when tested in accordance with ASTM E-648. All other species are Class II when tested in accordance with ASTM E-648.

2.2 FACTORY-FINISHED WOOD FLOORING

A. Laminated Flooring: Provide Nydree Engineered Acrylic Infused Hardwood Flooring.

1. Species and Color:
 - a. Maple: Black Forest.
2. Size:
 - a. Width: 5 1/4".
 - b. Thickness: Nominal Thickness: 7/16", Actual Thickness: 0.430".
 - c. Length: Random 12 inches to 47 inches
3. Edge Style: Micro-bevel.
4. Finish: Standard Factory-applied Pedestrian 2.0 urethane containing ceramic particles (15 gloss matte). Texture products are 5-10 gloss.

2.3 ACCESSORY MATERIALS

A. Wood Flooring Adhesive / Moisture Retarder.

1. It is recommended that all installations use Nydree Flooring SB1587 Adhesive. VOC content is 0 grams/liter. (As calculated per SCAQMD 1168)

B. Non-Infused Accessories: Non-infused and stained to match the species/color of the laminated flooring.

- a. 3/4" Quarter Round
- b. Length: 78" Fixed Length Piece.

PART 3 EXECUTION

3.1 EXAMINATION

A. Concrete Subfloors

1. Verify that new slab cure is a minimum of 30 days, preferably 60 days.
2. Verify that the concrete is clean, sound, free from contaminants and dry regardless of concrete age, history or grade level. Slab concrete moisture test results determine the application rate of the SB1587 adhesive.

The protocol for Calcium Chloride testing (ASTM F1869) and in-situ relative humidity testing (ASTM F2170) must be followed precisely for warranty consideration. If both tests are performed, the in-situ RH test is always the qualifying standard. Calcium Chloride Test kits are available from Nydree Flooring. If there is concern over any excessive future subfloor moisture, always use the 5/16" x 5/16" x 7/16" V-Notch trowel with Moisture Plus spacers application rate.

B. Other Subfloors

1. Plywood Overlays, AdvanTech T&G, Structural Suspended Plywood Subfloors, Existing Wood Flooring, Acoustical Underlayments, Radiant Heated Floors (Hydronic/Warmboard), Terrazzo, Stone, Marble Tile, Ceramic Tile, Clay Tile, as well as metal subfloors are all acceptable subfloors. Consult installation instruction guidelines.

C. All Subfloors

1. Verify that the substrate is clean, sound and free of wax, dirt, dust, mold, mildew, loose material, grease, oil, coatings, paint, rust, asphalt cutback, old adhesives (carpet), weak powdery concrete or gypsum, adhesive removers, efflorescence and other surface contaminants that will interfere with the bonding of the adhesive. Scouring using 3 ½ (20 grit) open coat sandpaper can remove most of these materials.
2. Verify that the substrate is flat to within 3/16" in 10 ft. (5mm per 3m). The substrate must be smooth, free from cracks, holes, voids, ridges, projections and other defects impairing performance or appearance.
3. Provide 1/4" (6.4mm) expansion spacing at all vertical obstructions when flooring run is less than 25 feet (7.6m). 1/2" (12.7mm) expansion spacing at all vertical obstructions when flooring run is >25 to 50 feet (7.6 to 15.2m). For runs >50 feet (15.2m) in either the length or width direction allow 1" (25.4mm) expansion spacing at all vertical obstructions. Keep in mind that these expansion spacing recommendations are provided solely to help prevent catastrophic flooring failure in the event of flooding or long periods of relative humidity beyond 55%. If it is expected that the relative humidity in the installation environment never exceeds 55% RH, the correct application of SB1587 is used based on concrete moisture test results and there is never any wet mopping of the flooring, then an expansion spacing of more than 1/2" at all vertical obstructions is not necessary.
4. Coordinate work with that of other trades prior to installation so that no discrepancies may exist with installation of doors, frames, saddles, floor drains or any materials that would interfere in any other way.
5. Notify Architect of moisture test results and any unsatisfactory conditions. Do not begin installation until unsatisfactory conditions have been corrected. Beginning of installation means substrate and job site conditions have been accepted as suitable.

3.2 PREPARATION-CONCRETE SUBFLOORS

- A. If a sealer, curing compound, bond breaker, densifier/hardener, prior adhesive or other surface coating has been applied, it must be completely "ground" off by diamond grinding, shot blasting or scarifying. Whenever possible, grind a concrete subfloor to tolerance rather than fill. Sweep and vacuum substrate after scouring or grinding. Concrete substrates should NOT be glassy smooth and reflective. Concrete should have a minimum surface profile of ICRI CSPI-3, similar to that of broom finished concrete.
- B. Use Portland cement-based filler to patch saw-cut control joints (score marks in concrete), cold/construction seams(concrete), cracks, holes, voids, low spots, depressions, grooves, indentations and defects of small areas. Fill level with the surrounding surface. Do not fill or bridge concrete slab expansion joints. These joints must be carried through the flooring surface using an expansion joint covering system. DO NOT skim coat large areas with extremely thin layers of patching compound. Sand and/or scour patched areas smooth after material is fully cured according to manufacturer's instructions. Use only quality materials and Portland cement-based patching products. Suggested patching products include: Ardex Feather Finish®, Ardex SD-P®, UltraFinish™ Pro and Bostik Webcrete® 95.
- C. If self-leveling underlayments are used, they must dry sufficiently (run moisture test) and dry hard (not dusty/powdery). Self-leveling underlayments must have a compressive strength equal to or greater than 2000 psi.. Gypsum-based self-leveling underlayments must be dry, "above-grade" installations where the gypsum has dried hard (not dusty/powdery), and the Gypsum has a compressive strength equal to or greater than 2000 psi.. Nydree Flooring can not be responsible for the strength, adhesion, or general performance of underlayments as proper compounding and preparation of subsurface are the responsibility of the installer.
 - a. Suggested products include:
 - i. Concrete up to 15 lbs. Calcium Chloride /87% insitu-RH use Ardex K 15®, and Bostik SL-150™.
 - ii. Concrete greater than 15 lbs. Calcium Chloride/87% insitu-RH use Ardex K-60™.

3.3 DIRECT BOND INSTALLATION METHOD

A. SB1587 Direct Bond Installation Method.

1. Follow manufacturer's installation instructions.
2. Depending on concrete slab moisture content use the appropriate V-notched trowel. Spread adhesive either using the standard 1/4" x 1/4" x 7/16" V-notched trowel, held at a 90 degree angle (15 lbs. or less, 87% in-situ RH or less) or the 5/16" x 5/16" x 7/16" V-notched trowel with Moisture Plus spacers (up to 18 lbs. or up to 95% in-situ RH). 100% of the substrate must be covered with SB1587 to protect against damage from subfloor moisture. Install flooring immediately into the "wet" adhesive. Adhesive open time is 40 to 60 minutes depending on relative humidity, but it is best to install the flooring immediately into the "wet" adhesive. Do not let adhesive dry to the touch. Occasionally lift a piece of flooring to assure vapor retarding adhesive is achieving at least 85% transfer between the substrate and flooring. If not, use the larger 5/16" x 5/16" x 7/16" V-notched trowel with Moisture Plus spacers or patch/level the uneven subfloor. Spread adhesive only over surface that can be finished within cure time of adhesive.
3. Install flooring per manufacturer's instructions.
4. Prior to cure, clean and SB1587 from the surface of the flooring with a clean, non-abrasive, microfiber cloth. Odorless mineral spirits can be used to facilitate clean-up. If there is and cured adhesive left on the flooring surface use a clean, non-abrasive, microfiber cloth and stiff plastic putty knife. Be careful not to damage the flooring finish.
5. Install trim, molding and transition strips per manufacturer's installation instructions.

3.4 PROTECTION

- #### A. Protect finished floor from abuse by other trades using heavy kraft paper, FortiBoard™ Floor Protector Paper, or equivalent. Make sure the floor has been cleaned thoroughly (swept, vacuumed and dust mopped) prior to protecting, so that the flooring surface will not be scratched by debris. Avoid covering the installation with protective paper or equivalent for at least 24 hours. Keep traffic out of spaces and areas where flooring is being installed until adhesive has set. Light foot traffic after 10-12 hours. Normal traffic after 24 hours.

3.5 CLEANING

- #### A. Nydree Flooring Sealed with Pedestrian 2.0 Urethane: Prior to turning the floor over to the owner, it shall be thoroughly cleaned by sweeping, vacuuming or dust mopping to remove debris, followed by cleaning with Nydree Natural Multi-Surface Cleaner.

END OF SECTION 09 64 33

SECTION 09 65 19 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Luxury Vinyl Tile (LVT-x)
 - 2. Quartz Tile (QT-x)

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
 - 1. Show details of special patterns.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.8 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 LUXURY VINYL TILE (LVT-x)

- A. See Legends on 'Finish Plan' drawings for product information.

2.2 QUARTZ TILE (QT-x)

- A. See Legends on 'Finish Plan' drawings for product information.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
 - 1. Adhesives shall comply with the following limits for VOC content:
 - a. Vinyl Composition and Quartz Tile Adhesives: 50 g/L or less.

- C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F 710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
 - 4. Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install floor tiles until they are the same temperature as the space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
 - 1. Lay tiles in pattern indicated on drawings.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.
 - 1. Apply Insert requirements number of coat(s) recommended by manufacturer.

E. Cover floor tile until Substantial Completion.

END OF SECTION 09 65 19

SECTION 09 72 00 - WALL COVERINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Vinyl wall covering (WC-x).

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data on physical characteristics, durability, fade resistance, and fire-test response characteristics.
- B. Shop Drawings: Show location and extent of each wall-covering type. Indicate pattern placement, seams and termination points.
- C. Samples: For each type of wall covering and for each color, pattern, texture, and finish specified, full width by minimum 36-inch- long in size.
 - 1. Wall-Covering Sample: From same production run to be used for the Work, with specified treatments applied. Show complete pattern repeat. Mark top and face of fabric.
- D. Product Schedule: For wall coverings. Use same designations indicated on Drawings.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For wall coverings to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Wall-Covering Materials: For each type, color, texture, and finish, full width by length to equal to 5 percent of amount installed.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install wall coverings until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at levels intended for occupants after Project completion during the remainder of the construction period.
 1. Wood-Veneer Wall Coverings: Condition spaces for not less than 48 hours before installation.
- B. Lighting: Do not install wall covering until lighting that matches conditions intended for occupants after Project completion is provided on the surfaces to receive wall covering.
- C. Ventilation: Provide continuous ventilation during installation and for not less than the time recommended by wall-covering manufacturer for full drying or curing.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: As determined by testing identical wall coverings applied with identical adhesives to substrates according to test method indicated below by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 1. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 25 or less.
 - b. Smoke-Developed Index: 50 or less.
 2. Fire-Growth Contribution: No flashover and heat and smoke release according to NFPA 265.

2.2 WALL COVERING WITH CUSTOM GRAPHICS (WC-x)

- A. WC-1:
 1. Basis of Design Wolf-Gordon
 2. Product: Holborn
 3. Color: As Selected by Architect.
- B. WC-2:

1. Basis of Design: Momentum
 2. Product: Ocean Drive
 3. Color: Cavalier
- C. Description: Provide mildew-resistant products in rolls from same production run and complying with the following:
1. FS CCC-W-408D and CFFA-W-101-D for Type III, Heavy-Duty products.
- D. Total Weight: 13 ounces per yard, excluding coatings.
- E. Width: 54 inches.
- F. Backing: Nonwoven fabric.
- G. Colors, Textures, and Patterns: Custom printed graphic provided by Architect in .eps file format.
- H. Tensile Strength: 92 x 92.
- I. Tear Strength: 55 x 40.
- J. Printing: Digitally printed 8 color solvent inks.

2.3 ACCESSORIES

- A. Adhesive: Mildew-resistant, nonstaining, strippable adhesive, for use with specific wall covering and substrate application indicated and as recommended in writing by wallcovering manufacturer.
1. Adhesive shall have a VOC content of 50 g/L or less.
- B. Primer/Sealer: Mildew resistant, complying with requirements in Section 09 91 23 "Interior Painting" and recommended in writing by primer/sealer and wall-covering manufacturers for intended substrate.
- C. Seam Tape: As recommended in writing by wall-covering manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for levelness, wall plumbness, maximum moisture content, and other conditions affecting performance of the Work.
1. Gypsum Board substrates must have a level 5 finish.

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

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Clean substrates of substances that could impair bond of wall covering, including dirt, oil, grease, mold, mildew, and incompatible primers.
- C. Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks, and defects.
 - 1. Moisture Content: Maximum of 5 percent on new plaster, concrete, and concrete masonry units when tested with an electronic moisture meter.
 - 2. Gypsum Board: Prime with primer as recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
 - 3. Painted Surfaces: Treat areas susceptible to pigment bleeding.
- D. Install two coats of water-based primer using a low nap roller. Wipe down wall surface with alcohol prior to application of wall covering.
- E. Check painted surfaces for pigment bleeding. Sand gloss, semigloss, and eggshell finish with fine sandpaper.
- F. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.
- G. Acclimatize wall-covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

3.3 WALL-COVERING INSTALLATION

- A. Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated.
- B. Cut wall-covering strips in roll number sequence. Change the roll numbers at partition breaks and corners.
- C. Install strips in same order as cut from roll.
 - 1. For solid-color, even-texture, or random-match wall coverings, reverse every other strip.
- D. Install wall covering without lifted or curling edges and without visible shrinkage.
- E. Match pattern 72 inches above the finish floor.

- F. Install seams vertical and plumb at least 6 inches from outside corners and 6 inches from inside corners unless a change of pattern or color exists at corner. Horizontal seams are not permitted.
- G. Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without overlaps or gaps between strips.
- H. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.

3.4 CLEANING

- A. Remove excess adhesive at seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended in writing by wall-covering manufacturer.
- C. Replace strips that cannot be cleaned.
- D. Reinstall hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.

END OF SECTION 09 72 00

