



Specification

Volume 1: Divisions 00 – 14 Darrington Library – Sno-Isle Libraries Town of Darrington, Washington 1005 Cascade St. Darrington, WA 98241

November 7, 2022

Bidding and Permit Documents

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Darrington Library – Sno-Isle Libraries Darrington, WA MSR Design #2022015DAR

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SECTION 00 01 07 SEALS & SIGNATURES

20122574 REGISTERED ARCHITECT MATTHEW SCOTT KRUNTORAD STATE OF WASHINGTON	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Architect under the laws of the State of Washington		
	Matthew Scott Kruntorad Name	11/07/2022 Date	
	Registration Expires: 04/27/2024	WA Reg No. 20122574	
	Pages covered by this seal:		
	Divisions: 01-12, except those liste	ed elsewhere.	

HE EICH WASHING	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Professional Engineer under the laws of the State of Washington.			
	Ryan H. Reichman Name	11/07/2022 Date		
BORSSIONAL ENOTITS	Registration Expires: W	/A Reg No. 42141		
	Pages covered by this seal: Structural Calculations			
	Sections: Structural			

SECTION 00 31 00

AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

- A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders but will not be part of Contract Documents, as follows:
 - 1. Copy of as-built drawings for Darrington Library and City Offices, 1989
 - 2. Copy of Sno-Isle Libraries Darrington Library Addition, 2008

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

3.01 OBTAINMENT OF PERMITS

- A. Construction Manager to obtain the following required permits, at no cost to Owner:
 - 1. Building Permit for all trades.



Structural Calculations For:

Darrington Sno-Isle Library

1005 Cascade St. Darrington, WA 98241



Prepared for: MSR Design Job #: 129592022-01 August 31, 2022 Date:



			Proiect Loca	tion			
Structural	IBC 2018		Stree	et & Number	1005 Cascade St		
Loading	ASCE 7-16			City:	Darrington	State: WA	
Wood:	NDS 2018			ZIP:	98241		
Steel:	AISC 360-16						
Concrete:	ACI 318-14		ſ	Latitude:	48.254	7 N	
Masonry:	TMS 402/602	-16	ſ	Longitude:	-121.6040	D W	
			Grou	nd Elevation	562	2 ft	
Occupancy Category							
	R	sk Category:	II ASCE 7 Table	1.5-1			
					1 hours		100
Seismic Load Summary:					T and		
Analys	s Procedure:	Equivalent La	teral Force Procedure				1
La	teral System:	Light-frame (v	/ood) Walls Sheathed with W	ood		Sau	
	_	Structural Par	els Rated for Shear Resistan	ce		🔹 💽 🤹	-
_	R:	5.50	$C_d = 4$		1	530	JAZ-
Ba	se Shear V =	12 kips	$\Omega_0^- 2.5$		- N	Darlington	A PAR
	ວ _S ≓ ເ	U.85/	s₁- 0.308		Le la	1	C L
	S _{DS} -	0.09	J _{D1} - U.41		S.V.		- Mara
ton Information	C _s =	0.105	'E ⁻ I.U		1282	1 2 1	1 VA
Storios Abovo Grada (Inc.)	Iding Marra		1		58 23	SALE	-
Stories ADOVE Grade (INCI	Juiling Miezzahl	ne Leveis)			1002	1 and	12 mar
orizontal and Vertical Irro	gularities:				Google		2022 000
the building a "Regular St	ructure"? (No F	orizontal or v	ertical irregularities)	Yes	Coogie	Map data 0	e2022 Google
and banding a regular St			eracui in egulariaes)	103			
Vind Load Summary:							
,,	V=	98	K _{zt} = 1.00				
	Exposure =	В					
Dead Loads:							
Roof			Floor				
Roofing	1	psf	Finish Floor	1	psf		
1/2" Sheathing	1.8	psf	3/4" Sheathing	2.3	psf		
Trusses @ 24" oc	2.5	psf	Joists @ 16" oc	2	psf		
Misc./Mech.	4	psf	Misc./Mech.	2.4	psf		
Ceiling Finish	2.8	psf	Ceiling Finish	2.3			
Solar Panels	0	psf		10	psf		
	12	psf	Use	10	psf		
		nof					
Use	15	psi					
Use	15	μει					
Use	15	psi					
Use	15	psi					
Use	15	μει					
Use	15	h21					
Use	15	h21					
Use ive Loads:	25	psi					
.ive Loads:	25 40	psf					
Use .ive Loads: Roof Floor	15 25 40	psf					
Use .ive Loads: Roof Floor Snow Loading Criteria	15 25 40	psf psf					
.ive Loads: Roof Floor Snow Loading Criteria:	25 40 20	psf psf	Flat Roof Snow Load in		nsf		
Use Live Loads: Roof Floor Ground Snow, pg Exposure Factor C	25 40 20	psf psf psf	Flat Roof Snow Load, pr	25.0	psf		
Use Not Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, C	25 40 20 1.00	psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅	25.0 25.0	psf psf		
Use Noof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Eactor	25 40 20 1.00 1.00	psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅	25.0 25.0	psf psf		
Use Noof Floor Conow Loading Criteria: Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slone Factor, C	25 40 1.00 1.00 0.61	psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅	25.0 25.0	psf psf		
ive Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs	25 40 1.00 1.00 1.00 0.61	psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p _s	25.0 25.0	psf psf		
ive Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs	25 40 20 1.00 1.00 1.00 0.61	psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p _s	25.0 25.0	psf psf	2 exception	
Juse Live Loads: Roof Floor Ground Snow, Pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing	25 40 20 1.00 1.00 1.00 0.61 20 1.00 20 1.00 20 20 1.00 20 20 1.00 20 1.00 20 20 20 20 20 20 20 20 20 20 20 20 2	psf psf psf No psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅ <u>To be approved by the author</u> Active	25.0 25.0 xity having ju 55/35	psf psf risdiction, per 11.8 pcf (Restrained/I	.2 exception.	
Juse Juse	25 40 20 1.00 1.00 1.00 0.61 20 1.00 0.3	psf psf psf No psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅ <u>To be approved by the author</u> Active Seismic Surcharge	25.0 25.0 xrity having ju 55/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	2 exception. Jnrestrained)	
Use ive Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 250 0.3 250	psf psf psf psf psf psf psf	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅ To be approved by the autho Active Seismic Surcharge	25.0 25.0 rity having ju 55/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	.2 exception. Jnrestrained)	
Live Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 0.0 1500 0.3 250	psf psf psf No psf pcf	Flat Roof Snow Load, pr Sloped Roof Snow Load, p₅ To be approved by the author Active Seismic Surcharge	25.0 25.0 prity having ju 55/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	.2 exception. Inrestrained)	
Live Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 0rt Provided? 1500 0.3 250	psf psf psf psf psf psf	Flat Roof Snow Load, pr Sloped Roof Snow Load, p₅ To be approved by the autho Active Seismic Surcharge	25.0 25.0 prity having ju 55/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	.2 exception. Jnrestrained)	
Live Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 0rt Provided? 1500 0.3 250 Darrington Sn	psf psf psf psf psf pcf pcf	Flat Roof Snow Load, p _r Sloped Roof Snow Load, p₅ <u>To be approved by the author</u> Active Seismic Surcharge	25.0 25.0 9rity having ju 55/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	3.2 exception. Inrestrained)	8/31/2022
Live Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep: Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 0rt Provided? 1500 0.3 250 Darrington Sn	psf psf psf psf psf pcf pcf p-lsle Library	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅ <u>To be approved by the autho</u> Active Seismic Surcharge	25.0 25.0 25/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	.2 exception. Inrestrained)	8/31/2022
Live Loads: Roof Floor Ground Snow, pg Exposure Factor, Ce Thermal Factor, Ct Importance Factor, Is Slope Factor, Cs Soils: Soils Rep Allowable Bearing Sliding, μ Passive	25 40 20 1.00 1.00 1.00 0.61 0rt Provided? 1500 0.3 250 Darrington Sn Criteria	psf psf psf psf psf pcf pcf p-lsle Library	Flat Roof Snow Load, p _f Sloped Roof Snow Load, p₅ <u>To be approved by the autho</u> Active Seismic Surcharge	25.0 25.0 25/35 8H	psf psf risdiction, per 11.8 pcf (Restrained/U	.2 exception. Inrestrained) DATE PROJ. #	8/31/2022

SWENSON SAY FAGÉT E Strengingers.com SEATTLE 2124 Trird Ave. Suite 100, Sentite, WA 98402 I 0 206 4436212 TACOMA 934 Brandway, Suite 100, Tacoma, WA 98402 I 0 253,284,9470

SHEET

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SCE 7-16 Seisr	nic Analysis	6	Equivalent	t Lateral Fo	rce Proced	ure						
Seismic Force R	esisting Sy	stem Per	System	Bearing W	all Systems	5						
			Type:	Light-frame (wood) Walls Sheathed with Wood Structural Panels Rated fo					ated for She	ear Resistar	ice	
			Type.									
Seismic D	Design Cat.		D						Section 12.	8.1.3 Except	tions	
Risl	k Category		11	I, II, or III, o	or IV per Tal	ble 1.5-1			Regular St	ructure		Yes
	Site Class	D (D	efault)	Assumed	default soil	properties	per 11.4.3	3.	≤ 5 Stories	above grad	le	Yes
Diaphragn	n Flexibility	Fle	xible						T ≤ 0.5s			Yes
			-	-					ρ = 1.0			Yes
Ss	0.857	g	2% in 50 y	r, Latitude	& Longitud	e lookup			Not Site Cl	ass E or F		Yes
S ₁	0.308	g	2% in 50 y	r, Latitude	& Longitud	e lookup			Risk Categ	ory I or II		Yes
R	6.50		_						If all excep	tions are me	et, S _{DS} may I	be taken as
	4.0								1, but not le	ess than 0.7	*(Calculated	I S _{DS})
12 ₀	2.5		Table 4 F 1	,					_	~	_	
l _e b	1.00	4	Table 1.5-2	2					$T_a = 0$	$C_t h_n^x$	Eq. 12	.8.7
''n C*	9.3	11	Table 12.9	2								
CL Y	0.02		Table 12.8	- <u>~</u> -2	Building 6	Period Per			$S_{MS} =$	$F_a S_S$	Eq. 11	.4-1
Т.	0.73	sec		-2	Alternate	Analysis			$S_{M1} =$	$F_{\nu}S_1$	Eq. 11	.4-2
T	0.11	sec	Fa 12 8-7		T (sec)				$S_{DS} =$	$\frac{2}{3}S_{MS}$	Eq. 11	.4-3
T _o	0.12	sec			. (000)				$S_{D1} =$	$^{2}/_{2}S_{M1}$	Ea. 11	.4-4
Ts	0.60	sec	-						- 51	/ 3 - MI		
TL	16.00	sec	-		Per Geote	ch Report			6	SDS	F 43	
Fa	1.20		Table 11.4-	1	Fa	•			$L_S = \frac{1}{C}$	R/I_{ρ}	Eq. 12	.8-2
F_v	1.99		Table 11.4-	2	F _v				$C_{\alpha} = -$	S _{D1}	Fa 12	8-3
S _{MS}	1.03	g	Eq. 11.4-1						$O_S = T$	(R/I_e)	-92	.0.5
S _{M1}	0.61	g	Eq. 11.4-2						$C_S = \frac{1}{\pi}$	$S_{D1}I_L$	Eq. 12	.8-4
S _{DS}	0.686	g	Eq. 11.4-3						C > C	OAAS	I Ea 12	9 5
S _{D1}	0.409	g	Eq. 11.4-4						$C_S \ge 0$	0.0445 _{DS}	ι _e Ly. 12	.0-J 0 F
									$c_S \ge 0$	1.01	Eq. 12	.0-0
	0.105	Controls	Eq. 12.8-2						$C_S \ge 0$	$1.5 \frac{31}{(R/I_{o})}$	Eq. 12	.8-6
Cs	0.593		Eq. 12.8-3	need not e	xceed, T <	TL	_			(11/10)		
	0.010		Eq. 12.8-5	or 12.8-6 m	ninimum			$C_{VV} = W$	$h_x^k / \sum_{i=1}^n$	$w_{x}h_{i}^{k}$	Eg. 12.	8-12
C _s , design	0.105		Section 11.	4.8 Excepti	ion 2 Applie	ed		VA	x x, = t=	1 ~ i	•	
Bldg. Weight	111.0	k	-					$F_{px} = \sum_{i=1}^{n}$	$\frac{1}{2} x^{F_i} / \sum_{i=1}^{n} x^{F_i}$	w, W _{px}	Eq. 12.	10-1
								$F_{nr} > 0$	2SpsI_w~	r	Ea. 12.	10-2
$v - c_S v v$	11.7	K	Eq. 12.8-1,	Strength Le	evel Base S	near		$F_{m} = 0$	$4S_{DS} = U_{W}$	~	Fa 12	10-3
v - C _{Sasd} vv	8.2	к	cq. 12.8-17	HOD Base S	Siledi			-px = 0.	DSiewp	×	-92.	
Vertical Distribu	ution	ASD	ρ=	1	k=	1.000						
						Story Shea	r			Diaphragm	1	
Level	h _x (ft)	W _x (k)	h _x ^k (ft)	W _x h _x ^k		ASD			Forc	e (p not incl	uded)	
					C _{vx} (%)	F _x (k)	SV (k)	F _{px,calc}	F _{px,min}	F _{px,max}	F _{px,design}	$\gamma = F_{px}/F_x$
								_				
								_				
								_				
								_				
								1				



9.3

Roof Σ

> Darrington Sno-Isle Library Seismic Criteria

9.3

1026 1026 1.000

8.2

8.2

8.2

8.2

10.7

21.3

111 111.0

DATE 8/31/2022
PROJ. #
DESIGN BMB

1.30

1

DESIGN BME SHEET 2

10.7

Wind Design - MWFRS

ASCE 7 Chapter 27 - Directional Procedure

Design Method	ASD

Wind Coefficients					
Exposure	В				
V=	98	mph			
K _d =	0.85	Table 26.6-1			
K _h =	0.57	Table 26.10-1			
K _e =	0.98	Table 26.9-1			
G=	0.85	26.9.4			

Transverse Wind Pressures

L/B = 0.42 h/L = 0.27

Pressure Coefficients from Figure 27.3-1:					
Bldg Face C _p					
Windward Wall	0.8				

Windward Wall	0.8
Leeward Wall	-0.50
Windward Roof	-0.39 / 0.11
Leeward Roof	-0.56

Location and Building Dimensions

Calculate Kzt?	Yes	
Kzt	1.00	
Roof Type	Gable	
Roof Slope - Transverse Dir	18	degrees
Roof Slope - Long Dir	0	degrees
Ground to top of roof	18	ft
Bot of roof to top of roof	9.25	ft
Mean Roof Height, h	13.375	ft
Short Plan Dimension	49.75	ft
Long Plan Dimension	118	ft
Parapet ?	Nólo	
Ground to top of parapet		ft
Average Parapet Height		ft

Velocity Pressure at Mean	11 0		
Roof Height, q _h =	11.0	psi	

Wall Pressures (Unfactored):

Wall Pressures (ASD				
Ht	Kz	qz	P _{ww walls}	Plwwalls	P _{walls} (psf)
0-15	0.57	11.67	7.94	5.00	9.6
15-20	0.62	12.70	8.63	5.00	9.6
20-25	0.66	13.52	9.19	5.00	9.6
25-30	0.7	14.33	9.75	5.00	9.6
30-40	0.76	15.56	10.58	5.00	9.6
41-50	0.81	16.59	11.28	5.00	9.8
51-60	0.85	17.41	11.84	5.00	10.1
61-70	0.89	18.22	12.39	5.00	10.4
71-80	0.93	19.04	12.95	5.00	10.8
81-90	0.96	19.66	13.37	5.00	11.0
91-100	0.99	20.27	13.79	5.00	11.3

Roof Pressures (Unfactored)

Roof Pressu	ASD		
Wind	lward	Looward	Horiz Proj
Max	Max Min		(psf)
1.1	-3.9	-5.6	4.80

Transverse Direction Base Shear (kips)

15.2

0 206 443.6212

2124 Trind Ave., Suite 100, Sentile, WA 98121 934 Bradway, Suite 100, Tacoma, WA 98402

SEATTLE TACOMA

มเอว รมจอบเป็นสมุรร (±

SWENSON SAY FAGÉT

Longitudinal Wind Pressures

L/B = 2.37 h/L = 0.11

Pressure Coefficients from Figure 27.4-1:		
Bldg Face	Cp	
Windward Wall	0.8	
Looward Wall	0.20	

Leeward Roof	-0.30
Windward Roof	-0.9 / -0.18
Leeward Wall	-0.28
Windward Wall	0.8

Wall Pressures ((Unfactored):				ASD
Ht	Kz	q _z	P _{ww walls}	Plwwalls	P _{walls} (psf)
0-15	0.57	11.67	7.94	2.82	9.60
15-20	0.62	12.70	8.63	2.82	9.60
20-25	0.66	13.52	9.19	2.82	9.60
25-30	0.7	14.33	9.75	2.82	9.60
30-40	0.76	15.56	10.58	2.82	9.60
41-50	0.81	16.59	11.28	2.82	9.60
51-60	0.85	17.41	11.84	2.82	9.60
61-70	0.89	18.22	12.39	2.82	9.60
71-80	0.93	19.04	12.95	2.82	9.60
81-90	0.96	19.66	13.37	2.82	9.71
91-100	0.99	20.27	13.79	2.82	9.96

Roof Pressu	ASD		
Wind	lward	Looward	Horiz Proj
Max	Min	Leewaru	(psf)
-1.8	-9.0	-3.0	4.80

Longitudinal Direction Base Shear (kips)

6.2



Darrington Sno-Isle Library

Wind Criteria

8/31/2022 DATE PROJ. # BMB

DESIGN 3 SHEET

ASCE 7-16 Wind Loads - Components and Cladding

Part 3: Buildings with h > 60 ft, Flat Roof ($\theta \le 7^{\circ}$) Section 30.5

Wind Coefficients

Exposure	В	
V=	98	mph
K _d =	0.85	Table 26.6-1
GC _p =	See Fig. 30.6-1	
GC _{pi} =	0.18	Table 26.11-1

Location and Building Dimensions				
K _{zt} =	1.00			
Mean Roof Height, h	70	ft		
K _e =	0.98	Table 26.9-1		
K _z =	0.89	Table 26.10-1		
		-		

Velocity Pressure, $q_h = 0.00256K_dK_{zt}K_hK_eV^2 =$ Design Wind Pressure, $p = q(GC_P)-q_i(GC_{Pi})$

(30.3-1)
(30.6-1)

ASD Design

Design Wind Pre	essure (psf)							
Location	Zo	one	Effective Wind Area					
Location			≤ 10	20	50	100	200	≥500
	1	Roof	-17.3	-16.3	-15.1	-14.0	-13.2	-11.8
Doof/Eig 20.6	2	Roof	-27.2	-25.9	-23.9	-22.8	-21.3	-19.5
1)	2	ОН	-31.6	-29.3	-25.2	-22.8	-21.5	-20.6
''	2	Roof	-37.1	-35.3	-32.9	-31.4	-29.6	-27.2
	3	ОН	-42.5	-36.0	-32.9	-31.4	-29.6	-27.2
	4	+	11.8	11.8	11.0	10.2	9.4*	8.6*
Wall (Fig. 30 5-1)	4	-	-11.8	-11.8	-11.2	-10.7	-10.3	-9.6*
waii (i ig. 50.5-i)	Б	+	11.8	11.8	11.0	10.2	9.4*	8.6*
	5	-	-21.7	-21.7	-19.1	-17.3	-15.4	-12.9
Parapet (Fig.	Typ - LC A	+	39.0	37.7	34.9	33.0	30.7	28.1
	Typ - LC B	-	-23.7	-23.7	-22.2	-20.9	-19.7	-18.2
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	Corner - LC B	-	-33.6	-33.6	-30.0	-27.5	-24.8	-21.5

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11.0

Note: * Indicates 10psf minimum wind pressure controls this load case for most buildings.



Plan and Elevation - Figure 30.5-1

Darrington Sno-Isle Library STRUCTURAL ENGINEERING

8/31/2022 Date: Project #: Design: BMB

Sheet:

2124 Trird Ave., Suite 100, Sentile, WA 98121 934 Broadway, Suite 100, Tacoma, WA 98402 SEATTLE TACOMA moo,stantinets.com

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PLAN AND PROCEDURES FOR THE UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

PROJECT TITLE: DARRINGTON LIBRARY

GRANTEE: SNO-ISLE REGIONAL INTER-COUNTY LIBRARIES

COUNTY WASHINGTON: Snohomish County

Section, Township, Range: Section 23 Township 32 Range 09

1. INTRODUCTION

The following Inadvertent Discovery Plan (IDP) outlines procedures to perform in the event of discovering archaeological materials or human remains, in accordance with state and federal laws.

2. RECOGNIZING CULTURAL RESOURCES

A cultural resource discovery could be prehistoric or historic. Examples include:

- a. An accumulation of shell, burned rocks, or other food related materials.
- b. Bones or small pieces of bone.
- c. An area of charcoal or very dark stained soil with artifacts.
- d. Stone tools or waste flakes (i.e. an arrowhead. or stone chips).
- e. Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years.
- f. Buried railroad tracks, decking, or other industrial materials.

When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

STEP 1: *Stop Work*. If any employee, contractor or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work must stop immediately. Notify the appropriate party(s). Leave the surrounding area untouched, and provide a demarcation adequate to provide the total security, protection, and integrity of the discovery. The discovery location must be secured at all times by a temporary fence or other onsite security.

STEP 2: *Notify Archaeological Monitor or Licensed Archaeologist*. If there is an Archaeological Monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the outlined procedure.

STEP 3: *Notify the Project Manager* of this project and contact the Department of Commerce Grant Manager, or other applicable contacts:

Project Manager

Name: Chy Ross Phone: 360-651-7015 Email: cross@sno-isle.org **Assigned Alternate Contact**

Name: Hannah Krumheuer Phone: 360-651-7047 Email: hkrumheuer@sno-isle.org

Department of Commerce Grant Manager

Name: Cathy Brockmann Phone: 360-764-0209 Email: Cathy.Brockmann@commerce.wa.gov

The Project Manager or applicable staff will make all calls and necessary notifications. **If human remains are encountered**, treat them with dignity and respect at all times. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed. **Do not call 911 or speak with the media. Do not take pictures unless directed to do so by DAHP. See Section 5.**

4. FURTHER CONTACTS AND CONSULTATION

A. Project Manager's Responsibilities:

- *Protect Find*: The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop immediately in a surrounding area adequate to provide for the complete security of location, protection, and integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating archaeological/cultural material as set forth in this document.
- *Direct Construction Elsewhere on-Site*: The Project Manager may direct construction away from cultural resources to work in other areas prior to contacting the concerned parties.
- *Contact Senior Staff*: If the Senior Staff person has not yet been contacted, the Project Manager must do so.

B. Senior Staff Responsibilities:

- *Identify Find*: The Senior Staff (or a delegated Cultural Resource Specialist), will ensure that a qualified professional archaeologist examines the area to determine if there is an archaeological find.
 - If it is determined not to be of archaeological, historical, or human remains, work may proceed with no further delay.
 - If it is determined to be an archaeological find, the Senior Staff or Cultural Resource Specialist will continue with all notifications.
 - If the find may be human remains or funerary objects, the Senior Staff or Cultural Resource Specialist will ensure that a qualified physical anthropologist examines the find. If it is determined to be human remains, the procedure described in Section 5 will be followed.
- *Notify DAHP*: The Senior Staff (or a delegated Cultural Resource Specialist) will contact the involved federal agencies (if any) and the Washington Department of Archaeology and Historic Preservation (DAHP).
- *Notify Tribes*: If the discovery may be of interest to Native American Tribes, the DAHP and Ecology Supervisor or Coordinator will coordinate with the interested and/or affected tribes.

General Contacts

Federal Agencies:	State Agencies:
Agency:	Agency: Dept. of Commerce
Name:	Name: Cathy Brockmann
Title:	Title: Direct Appropriations Grant Manager
Number:	Number: (360) 725-3175
Email:	Email: cathy.brockmann@commerce.wa.gov

Department of Archaeology and Historic Preservation:

Dr. Allyson Brooks	Rob Whitlam, Ph.D.
State Historic Preservation Officer	Staff Archaeologist
360-586-3066	360-586-3050

Tribes consulted on this project are:

N C C C C C		C · · ·	• , •	Е 1 0000
Note- Contacts noted	were Cultural resource	e Contacts in	position as	February 2022

Tribe: Stillaguamish Tribe of Indians	Tribe: Sauk-Suittle Indian Tribe
Name: Sam Barr	Name: Kevin Joseph
Title: Cultural Resources/THPO Supervisor	Title: Tribal Historic Preservation Officer
Phone: 360 - 631-5587	Phone: 360-436-0333
Email: sbarr@stillaguamish.com	Email: kjoseph@sauk-suiattle.com
Tribe: Tulalip Tribes	Tribe: Swinomish Indian Tribal Community
Name: Richard Young	Name: Larry Campbell
Title: Cultural Resources Contact	Title: Tribal Historic Preservation Officer
Phone: 360-716-2652	Phone: 360-466-7352
Email: ryoung@tulaliptribes-nsn.gov	Email: lcampbell@swinomish.nsn.us
Tribe: Snoqualmie Tribe	Tribe: Suquamish Tribe
Name: Steven Mullen-Moses	Name: Dennis Lewarch
Title: Archaeology and Historic Preservation	Title: Cultural Resources Contact
Phone: 425-292-0249 x 2010	Phone: 360-394-8529
Email: steve@snoqualmietribe.us	Email: dlewarch@Suquamish.nsn.us
Tribe: Muckleshoot Indian Tribe	
Name: Melissa Calvert	
Title: Archaeologist; Cultural Resources	
Phone: 253-876-3272	
Email: laura.murphy@muckleshoot.nsn.us	

Further Activities

- Archaeological discoveries will be documented as described in Section 6.
- Construction in the discovery area may resume as described in Section 7.

5. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Do not take photographs by any means, unless you are pre-approved to do so.

If the project occurs on federal lands or receives federal funding (e.g., national forest or park, military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 apply, and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Manager will comply with applicable state and federal laws, and the following procedure:

A. In all cases you must notify a law enforcement agency or Medical Examiner/Coroner's Office:

In addition to the actions described in Sections 3 and 4, the Project Manager will immediately notify the local law enforcement agency or medical examiner/coroner's office.

The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human, whether the discovery site constitutes a crime scene, and will then notify DAHP.

Enter contact information below:

Local Police Department

Name: Snohomish County Sheriff Adam Fortney Phone: 425-388-3393/ <u>contact.sheriff@snoco.org</u> Address: 3000 Rockefeller Ave.MS 606, Everett, WA 98201

Local Medical Examiner's Office

Name: J. Matthew Lacy, MD Phone: 425-438-6200/ <u>contact.medadmin@snoco.org</u> Address: 9509 29th Ave. West, Everett, WA 98204

B. Participate in Consultation:

Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Commerce staff will participate in consultation.

C. Further Activities:

- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, construction in the discovery area may resume as described in Section 7.

6. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological deposits discovered during construction will be assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

Project staff will ensure the proper documentation and field assessment will be made of any discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Commerce, affected tribes, and a contracted consultant (if any).

All prehistoric and historic cultural material discovered during project construction will be recorded by a professional archaeologist on a cultural resource site or isolate form using standard and approved techniques. Site overviews, features, and artifacts will be photographed; stratigraphic profiles and soil/sediment descriptions will be prepared for minimal subsurface exposures. Discovery locations will be documented on scaled site plans and site location maps.

Cultural features, horizons and artifacts detected in buried sediments may require further evaluation using hand-dug test units. Units may be dug in controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. A test excavation unit or small trench might also be used to determine if an intact occupation surface is present. Test units will be used only when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. Excavations will be conducted using state-of-the-art techniques for controlling provenience, and the chronology of ownership, custody and location recorded with precision.

Spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock will be recorded for each probe on a standard form. Test excavation units will be recorded on unit-level forms, which include plan maps for each excavated level, and material type, number, and vertical provenience (depth below surface and stratum association where applicable) for all artifacts recovered from the level. A stratigraphic profile will be drawn for at least one wall of each test excavation unit.

Sediments excavated for purposes of cultural resources investigation will be screened through 1/8-inch mesh, unless soil conditions warrant ¹/₄-inch mesh.

All prehistoric and historic artifacts collected from the surface and from probes and excavation units will be analyzed, catalogued, and temporarily curated. Ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Commerce and the affected tribes.

Within 90 days of concluding fieldwork, a technical report describing any and all monitoring and resultant archaeological excavations will be provided to the Project Manager, who will forward the report for review and delivery to Commerce, the federal agencies (if any), DAHP, and the affected tribe(s).

If assessment activity exposes human remains (burials, isolated teeth, or bones), the process described in Section 5 will be followed.

7. PROCEEDING WITH WORK

Work outside the discovery location may continue while documentation and assessment of the cultural resources proceed. A professional archaeologist must determine the boundaries of the discovery location. In consultation with Commerce, DAHP and any affected tribes, the Project Manager will determine the appropriate level of documentation and treatment of the resource. If there is a federal nexus, Section 106 consultation and associated federal laws will make the final determinations about treatment and documentation.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Manager, DAHP, any affected tribes, Commerce (and the federal agencies, if any) determine that compliance with state and federal law is complete.

8. RECIPIENT/PROJECT PARTNER RESPONSIBILITY

The Project Recipient/Project Partner is responsible for developing an IDP. The IDP must be immediately available onsite, be implemented to address any discovery, and be available by request by any party. The Project Manager and staff will review the IDP during a project kickoff or pre-construction meeting.

We recommend that you print images in color for accuracy.

You see chipped stone artifacts.



- Glass-like material
- Angular
- "Unusual" material for area
- "Unusual" shape
- Regularity of flaking
- Variability of size



You see ground or pecked stone artifacts.









- Striations or scratching
- Unusual or unnatural shapes
- Unusual stone
- Etching
- Perforations
- Pecking
- Regularity in modifications
- Variability of size, function, and complexity

You see bone or shell artifacts.



- Often smooth
- Unusual shape
- Carved
- Often pointed if used as a tool
- Often wedge shaped like a "shoehorn"



You see bone or shell artifacts.



- Often smooth
- Unusual shape
- Perforated
- Variability of size



You see fiber or wood artifacts.



- Wet environments needed for preservation
- Variability of size, function, and complexity
- Rare



You see historic period artifacts.







You see strange, different or interesting looking dirt, rocks, or shells



- Human activities leave traces in the ground that may or may not have artifacts associated with them
- "Unusual" accumulations of rock (especially fire-cracked rock)
- "Unusual" shaped accumulations of rock (e.g., similar to a fire ring)
- Charcoal or charcoal-stained soils
- Oxidized or burnt-looking soils
- Accumulations of shell
- Accumulations of bones or artifacts
- Look for the "unusual" or out of place (e.g., rock piles or accumulations in areas with few rock)

You see strange, different or interesting looking dirt, rocks, or shells



- "Unusual" accumulations of rock (especially fire-cracked rock)
- "Unusual" shaped accumulations of rock (e.g., similar to a fire ring)
- Look for the "unusual" or out of place (e.g., rock piles or accumulations in areas with few rock)

You see strange, different or interesting looking dirt, rocks, or shells



You see historic foundations or buried structures.



SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Darrington Library Sno-Isle Libraries
- B. Owner's Name: Sno-Isle Libraries
- C. Architect's Name: MSR Design.
- D. Additional Project contact information can be found on the Drawing Cover Sheet.

1.02 DESCRIPTION OF WORK

- A. The Darrington Library project is a Renovation to the existing public library building. The project narrative that follows is an outline description of the work and is not exhaustive.
 - 1. A small outdoor patio addition includes new wood slat fence and precast concrete pavers. A hydraulic single swing door will be added to the west wall of the existing meeting room.
 - 2. Renovations include existing parking and sidewalk pavement, significant remodeling of building main lobby and the library interior space throughout including the demolition of non- bearing wall to receive new glass walls and aluminum storefront window system. Townhall office is not included in the scope of work.
 - 3. Other Library interior spaces will receive less intensive renovation limited to new floor and wall finishes and the relocation of library shelving or equipment.
- B. Scope of minor demolition and removal work is shown on drawings and specified in Section 02 41 00.
- C. Scope of alterations and new construction work is shown on drawings.
- D. Services (Including but not limited to Plumbing, HVAC, Electrical Power and Lighting, Telecommunications, and Audio-Visual): Alter existing system and add new construction.
- E. Owner will remove the following items before start of work:
 - 1. Furnishings.
 - 2. Artwork.
 - 3. Portable equipment.
 - 4. Library collections.
 - 5. Library Program Equipment
- F. Contractor is to remove and deliver the following to Owner prior to start of work:
 - 1. Casework in main lobby, as indicated in the Drawings.
 - 2. _____.
- G. Contractor is to remove and store the following prior to start of work, for later reinstallation by Contractor:
 - 1. Plumbing fixtures, as indicated in the Drawings.
 - 2. Doors hardware, as indicated in the Drawings.
 - 3. Library shelving.

1.03 WORK BY OWNER

- A. Items noted NIC (Not in Contract) will be supplied and installed by Owner (OFOI) after Substantial Completion. Some items include:
 - 1. Furnishings.
 - 2. Owner-provided equipment such as computers, printers and other appliances.

- 3. Artwork.
- 4. library shelving.
- 5. Interior signage.
- 6. Food and Beverage vending machines
- C. Owner will supply and install the following:
 - 1. AV equipment including monitors in Meeting room and Juvenile.
- D. Owner will supply the following for installation by Contractor (OFCI):
 - 1. All salvaged items including book return, water fountain, display case

1.04 OWNER-FURNISHED ITEMS

- A. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.
- B. Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
- C. If Owner-furnished items are damaged, defective or missing, Owner will arrange for replacement. Owner will also arrange for manufacturer's field services, and the delivery of manufacturer's warranties and bonds to the Contractor.
- D. The Contractor is responsible for designating the delivery dates of Owner furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner-furnished items at the site.
- E. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements, and to repair or replace items damaged as a result of his operations.

1.05 OWNER OCCUPANCY

- A. Townhall intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Townhall to minimize conflict and to facilitate Townhall's operations.
- D. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
 - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
 - 2. Contractor shall not use the area of the existing sanitary drain field system to the northern edge of the site. Approximate area is defined on Drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
 - 4. Use of site and premises by the public.
- C. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
 - 3. Alternative entrances, exits and Interim life safety procedures will be required if the main entrance or any fire exits are closed during construction. Coordinate durations with Owner.

- 4. Contractor shall provide documentations for, manage and provide all temporary exiting and partitions during course of project.
- D. Existing building spaces may not be used for storage.
- E. Time Restrictions:
 - 1. Contractor shall coordinate the scheduling and execution of especially noisy, malodorous, and dusty work with Owner and Townhall staff so as to minimize disturbance to Townhall and Public during open Townhall Hours.
 - a. Such work should occur outside of normal Townhall Hours unless Contractor has received notification to proceed otherwise from Library or Townhall.
- F. Utility Outages and Shutdown:
 - 1. Limit disruption of utility services to hours the building is unoccupied.
 - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 48 hours notice to Owner and authorities having jurisdiction.
 - 3. Prevent accidental disruption of utility services to facilities.

1.07 WORK SEQUENCE

- A. Complete the project within the construction period.
- B. Coordinate construction schedule and operations with Owner.
- C. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- D. Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. Execute cutting and patching to integrate elements of Work, uncover ill-timed, defective, and nonconforming Work, provide openings for penetrations of existing surfaces, and provide samples for testing if required. Seal penetrations through floors, walls, and roof.

1.08 DEFINITIONS AND EXPLANATIONS

- A. Imperative language is used generally in the specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the Contractor as if preceded by the phrase "The Contractor shall".
- B. The term "provide" means furnish and install, complete, and ready for intended use. Except as otherwise defined in greater detail, the term "furnish" means supply and deliver to the project site, including unloading, unpacking, inspecting, and storing until ready for receipt by Owner, installation, etc., as applicable.
- C. Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site including assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable.
- D. The term "indicated" is as cross-reference to graphics, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shows", "noted", "schedules", and "specified" are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference, and no limitations of location is intended.

PART 2 PRODUCTS - NOT USED PART 3 EXECUTION - NOT USED

SECTION 01 15 00

PROJECT MATERIAL I.D. LIST

ID	DESCRIPTION	Spec Data	SPEC SECTION
ACPNL-1	ACOUSTIC CEILING PANEL	MFR: PINTA ACOUSTIC MODEL: SONEX CLEAN BAFFLES SIZE: 24" X 48" X 2" COLOR: WHITE	SPEC SECTION
ACT-1	ACOUSTIC CEILING TILE	MFR: CERTAINTEED; MODEL: TECHSTYLE; SIZE: 2'-0" X 4'-0"; COLOR: WHITE;	09 51 00
ALSF-1	ALUMINUM STOREFRONT, EXTERIOR	MFR: KAWNEER MODEL: ENCORE FRAMING SYSTEM (EXTERIOR), 1 3/4" SIGHT LINE FINISH : CLEAR ANODIZED GLAZING: GL-1	08 43 13
ALSF-2	ALUMINUM STOREFRONT, INTERIOR DOOR	MFR: KAWNEER MODEL: 350 MEDIUM STILE DOOR FINISH: CLEAR ANODIZED GLAZING: GL-3	08 43 13
CPT-1	CARPET	MFR: INTERFACE; STYLE: WW870; COLOR: 105348 NATURAL WEFT; SIZE: 25cm X 100cm; INSTALL: RANDOM ASHLAR; BACKING: C-QUEST BIO;	09 68 13
CPT-2	CARPET - CHILDRENS GREEN	MFR: FLOR STYLE: Made You Look COLOR: Mint SIZE: 50cm X 50cm INSTALL: RANDOM ASHLAR	09 68 13
CPT-3	CHILRENS GREY	MFR: FLOR; STYLE: HEMLINE; COLOR: GREY PEARL 21-1524; SIZE: 50cm X 50cm; INSTALL: RANDOM;	09 68 13
CPT-4	WALKOFF CARPET	MFR:INTERFACE; COLLECTION: STEP REPEAT; STYLE: SR899; COLOR: 104940 IRON; NOTE: WALK OFF MATT; INSTALL: RANDOM ASHLAR; BACKING: C-QUEST BIO;	09 68 13
CPT-5	CHILRENS GREY	MFR: INTERFACE; COLLECTION: OPEN AIR; STYLE: 404 ACCENT; COLOR: 107137 MOSS; SIZE: 50cm X 50cm; INSTALL: RANDOM ASHLAR; BACKING: C-QUEST BIO;	09 68 13
FELT-1A	FELT RIB - GREEN	MFR: KIREI; PRODUCT:EMBOSSED PANEL SERIES; STYLE: GROOVY 3.0; COLOR: 384 SEAWEED; PANEL SIZE: 110.2" x 44.5" x 0.35" THICKNESS: 0.8"; NRC: 0.30 ; CONTENT: RECYCLED PET;	09 72 00
FELT-1B	FELT RIB - GREY	MFR: KIREI; PRODUCT:EMBOSSED PANEL SERIES; STYLE: GROOVY 3.0; COLOR: 454 MUSHROOM; PANEL SIZE: 110.2" x 44.5" x 0.35" THICKNESS: 0.8"; NRC: 0.30 ; CONTENT: RECYCLED PET;	09 72 00
FELT-2A	FELT FLAT- GREEN	MFR: KIREI; PRODUCT: MURA WALLCOVERING; COLOR: SOLID MURA 384; PANEL SIZE: 6M x 1210mm ROLL; NRC: 0.10; CONTENT: RECYCLED PET:	09 72 00

ID	DESCRIPTION	Spec Data	SPEC SECTION		
FELT-2B	FELT FLAT - GREY	MFR: KIREI; PRODUCT: MURA WALLCOVERING; COLOR: SOLID MURA MUSHROOM 454; PANEL SIZE: 6M x 1210mm ROLL; NRC: 0.10; CONTENT: RECYCLED PET;	09 72 00		
FELT-2C	FELT- KIDS GREEN	MFR: KIREI; PRODUCT: MURA WALLCOVERING; COLOR: SOLID MURA 579 OLIVE GREEN; PANEL SIZE: 6M x 1210mm ROLL; NRC: 0.10; CONTENT: RECYCLED PET;	09 72 00		
FILM-1	GLASS FILM	MFR: 3M; PRODUCT: FASARA GLASS FINISHES GRADATION; STYLE: SH2FGDM 1270 DIAMOND; SIZE: 50" WIDE; NOTE: 50% OPAQUE FROM 0'-2' AFF, GRADATION STARTING AT 2' UP TO 100% TRANSPARENT AT 50";	08 80 00		
GCB-1	GYPSUM CEILING BOARD	MFR: USG MODEL: SHEETROCK BRAND THICKNESS" 1/2"	09 29 00		
GCB-2	GYPSUM CEILING BOARD	MFR: GYPSORB MODEL: STRATA 12-20-35, PERFORATED GYPSUM CEILING THICKNESS" 1/2"	09 29 00		
GL-1	EXTERIOR GLAZING	MFR: VITRO MODEL: SOLARBAN 60 INSULATING GLASS THICKNESS: 1", OUTTER LITE (1/4" FULLY TEMPERED CLEAR + 1/2" ARGON INFILL + 1/4" FULLY TEMPERED CLEAR), LOW-E COATING ON #2 SURFACE)	08 80 00		
GL-2	INTERIOR GLAZING	PRODUCT: 1/2" FULLY TEMPERED GLASS	08 80 00		
GL-3	INTERIOR GLAZING	PRODUCT: 1/4" FULLY TEMPERED GLASS	08 80 00		
GLES-1	GLASS PARTITION	MFR: CRL CO., INC. MODEL: GLASS WALL: WU1SASL (1 1/2" DEEP TOP CHANNEL) WU3SASL (1" DEEP BOTTOM CHANNEL) FINISH: CLEAR ANODIZED GLASS DOOR, DOOR STOP: LS9BS PULL: 66LPBS, 66" EXTRA LADDER STYLE FINISH: BRUSHED STAINLESS STEEL GLAZING: 1/2" FOR WALLS UNDER 9-0" 3/4" FOR WALLS OVER 9-0". FULLY TEMPERED *GLASS THIKNESS INDICATED IS MINIMUM, ACTUAL THICKNESS SHALL BE DETERMINED BY GLAZING SUPPLIER TO MEET CODE REQUIREMENTS	08 41 26		
GLES-2	GLASS PARTITION W/ SLIDING DOOR	MFR: CRL CO., INC. MODEL: CRL2901C (GLASS WALL WITH SLIDING DOOR) FINISH: SATIN ANODIZED GLAZING: 1/2" FOR WALLS UNDER 9'-0" 3/4" FOR WALLS OVER 9'-0". FULLY TEMPERED *GLASS THIKNESS INDICATED IS MINIMUM, ACTUAL THICKNESS SHALL BE DETERMINED BY GLAZING SUPPLIER TO MEET CODE REQUIREMENTS	08 41 26		
GWB-1	GYPSUM WALL BOARD	MFR: USG MODEL: SHEETROCK BRAND THICKNESS: 5/8"	09 29 00		
INSUL-1	FIBERGLASS INSULATION	MFR: OWENS CORNING MODEL: UNFACED FIBER GLASS BATT INSULATION *ACOUSTIC BATT INSULATION FOR INTERIOR WALL CAVITY **R-30 UNFACED INSULATION FOR ROOF	07 21 00		
INSUL-2	SPRAY FOAM INSULATION	MFR: Hilti MODEL: CF 812, Closed cell foam insulation	07 21 00		
JS-1	JOINT SEALAT & BACKER ROD, EXTERIOR	Non-Staining Silicone Sealant	07 92 00		
JS-2	JOINT SEALANT & BACKER ROD, INTERIOR	MFR: Type info here and keep semicolon at end; STYLE: Type info here and keep semicolon at end; COLOR: Type info here and keep semicolon at end;	07 92 00		
LINO-1	FLOORING GRADE LINO	MFR: FORBO; PRODUCT: WALTON CIRRUS; COLOR: 3355 ROSEMARY GREEN;	09 65 00		
MA-1	MILLWORK ACCESSORY - HINGE	MFR: BLUM, CABINET HINGES STYLE: 75T1590B;	06 41 00		

5	WATERIAL / FRODUCT ID LIST				
ID	DESCRIPTION	Spec Data	SPEC SECTION		
MA-2	MILLWORK ACCESSORY - MAGNETIC PUSH LATCH	MFR: SUGATSUNE, MAGNETIC LATCHES MODEL NO: ML120;	06 41 00		
MA-3	MILLWORK ACCESSORY - DRAWER GLIDE	MFR: FULTERER; TYPE: FR5043;	06 41 00		
MA-4	MILLWORK ACCESSORY - TRASH PULL OUT	MFR: REV-A-SHELF; PRODUCT: BOTTOM MOUNT DOUBLE BIN TRASH CAN; MODEL: 5149-18DM-211; WIDTH: 18"; COLOR: WHITE; CAPACITY: 35 QUART; NOTE: SOFT OPEN / CLOSE;	06 41 00		
MA-5	MILLWORK PULL	MFR: DOUG MOCKETT; STYLE: DP3C; LENGTH: 6"; FINISH: SATIN NICKLE 17S;	06-41 00		
MA-10	GROMMET	MFR: DOUG MOCKETT MODEL: EDP-5, STAINLESS STEEL GROMMET FINISH: SATIN CHROME	12 36 00		
MIR-1	BATHROOM MIRROR	FRAMELESS MIRROR - SEE ELEVATION FOR DIMENSIONS;	08 80 00		
OHDR-1	OVERHEAD DOOR	MFR: CROWN DOORS; STYLE: SINGLE HYDRAULIC; HARDWARE: CONSTANT CONTACT TURN-KEY, RECESSED MOUNT. COLOR: Mfg. Full Custom Range, INSULATED GLAZING NOTES: PROVIDE EXTENDED LEG ON PERIMETER ANGLE TO ACCOMMODATE BOLTING THROUGH WD STRUCTURE. PROVIDE 30' MIN. HYDRAULIC LINES TO PUMP IN ADJACENT CLOSET.	08 34 00		
PAV-1	PRECAST CONCRETE PAVER	MFR: STEPSTONE INC. STYLE: LARGE SCALE CALARC PAVERS COLOR: PORCELAIN, 1813 SIZE: 24" X 48" X 2 1/2"			
PLY-1	PLYWOOD, MILLWORK	WOOD: PLYWOOD, FINISH FACE, A GRADE FINISH: CLEAR FINISH, EDGE TAPE WHERE EXPOSED	06 20 00		
PLY-2	PLYWOOD, MILLWORK	WOOD: PLYWOOD, CABINET CONSTRUCTION FINISH: CLEAR FINISH, EDGE TAPE WHERE EXPOSED	06 20 00		
PT-1	PAINT, INTERIOR	MFR: SHERWIN-WILLIAMS STYLE: WATER BASED INTERIOR LATEX PAINT SHEEN LEVELS: EGGSHELL	09 91 23		
PT-2	PAINT, EXTERIOR	MFR: SHERWIN-WILLIAMS STYLE: WATER BASED EXTERIOR LATEX PAINT SHEEN LEVELS: EGGSHELL	09 91 13		
PT-3	PAINT, METAL	MFR: SHERWIN-WILLIAMS STYLE: WATER BASED INTERIOR LATEX PAINT SHEEN LEVELS: EGGSHELL	09 91 13		
PT-A	PAINT WHITE	MFR: SHERWIN WILLIAMS; COLOR: SW7013 IVORY LACE;	09 91 23		
PT-B	PAINT DARK GREEN	MFR: SHERWIN WILLIAMS; COLOR: SW6209 RIPE OLIVE;	09 91 13		
PT-C	PAINT LIGHT GREEN	MFR: SHERWIN WILLIAMS; COLOR: SW2861 AVOCADO;	09 91 13		
PVA-1	SOLAR PHOTOVOLTAIC ARRAY - 8kWH	TURN-KEY INSTALLATION			
RAIL-1	ART RAIL	MFR: STAS MODEL: MINIRAIL COLOR: White *5 EA PROVIDE CLEAR CORD WITH COBRA ENDS + STAS ZIPPER HOOK			
RB-1	RUBBER BASE - STRAIGHT	MFR: FLEXCO; COLOR: 029 ARCTIC WHITE; STYLE: STRAIGHT; TYPE: TS WALLFLOWERS RUBBER WF-029; SIZE: 4";	09 65 00		
10	DECODIDITION	Con Data	ODEO OFOTION		
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ID DAIL 4	DESCRIPTION	Spec Data	SPEC SECTION		
RAIL-1	ARTRAIL	MODEL: MINIRAIL COLOR: White			
		15 EA PROVIDE CLEAR CORD WITH COBRA ENDS + STAS ZIPPER HOOK			
RB-1	RUBBER BASE - STRAIGHT	MFR: FLEXCO; 09 65 00 COLOR: 029 ARCTIC WHITE; STYLE: STRAIGHT; TYPE: TS WALLFLOWERS RUBBER WF-029; SIZE: 4*;			
RB-2	RUBBER BASE GREEN - COVE	MFR: FLEXCO; 09 65 00 COLOR: 097 BASIL; 5TYLE: COVE; TYPE: TS WALLFLOWERS RUBBER WF-029; 5IZE: 4*;			
SKY-1	SKYLIGHT, 4' x 4'	MFR: VELUX STYLE: DECK MOUNTED FIXED SKYLIGHT MODEL: FS S06 2004 SIZE: 44 1/4" x 45 3/4" COLOR: WHITE INTERIOR WITH ALUMINUM CLADING			
SSF-1	SOLID SURFACE	MFR: DUPONT; 12 3 PRODUCT: CORIAN SOLID SURFACE COLOR: DESIGNER WHITE; THICKNESS: 3/4 INCH:			
TA-2	COMBINATION TOILET TISSUE DISPENSER	MFR: BOBRICK; PRODUCT: B-30919; FINISH: SATIN STAINLESS STEEL; NOTE: INCLUDES TOILET TISSUE, SEAT COVER, AND SANITARY WASTE DISPOSAL UNITS;	10 28 00		
TA-9	COMBINATION TOWEL (ROLL) DISPENSER / WASTE RECEPTACLE	MFR: BOBRICK; STYLE: B-3979; FINISH: STAINLESS STEEL; NOTE: SURFACE MOUNTED;	10 28 00		
TA-11	LIQUID-SOAP DISPENSER	MFR: BOBRICK; PRODUCT: B-2012; FINISH: ARTIC STAINLESS; NOTE: SURFACE MOUNTED;	10 28 00		
TA-19	ноок	MFR: HAFELE; MODEL: 842.34.906; MATERIAL: ALUMINUM; FINISH: MATT SILVER:	10 28 00		
TA-20	HOOK - SMALL	MFR: HAFELE; MODEL: 842.34.909; MATERIAL: ALUMINUM; FINISH: MATT SILVER:	10 28 00		
TA-24	DIAPER-CHANGING STATION	MFR: ASI; 10 28 STYLE: 9017-9; FINISH: STAINLESS STEEL; NOTE: VERTICAL SURFACE MOUNTED;			
TA-25	SHARPS DISPOSAL	MFR: SHARPS COMPLIANCE, INC 10 28 0 PRODUCT: SHARPS SECURE MODEL NO.: 50060 FINISH: SATIN STAINLESS STEEL; NOTE: SURFACE MOUNTED;			
TL-1	BACKSPLASH	MFR: DESIGN DIRECT SOURCE; PRODUCT: UMI NAYA; COLOR: FOREST GREEN; FINISH: GLOSSY; SIZE: 2"X8"; INSTALL: VERTICAL STACK BOND; GROUT MFR: TEC; GROUT COLOR: DOVE GRAY; GROUT SIZE: 1/8";			
TLA-1	TILE ACCESSORY -	MFR: SCHLUTER;			
VAPB-1	VAPOR BARRIER, CEILING	PRODUCT: DILEX-AHKA; MFR: HDX STYLE: 6MIL VAPOR BARRIER			
WD-2	WOOD, TRIM (TO MATCH EXISTING)	WOOD: MAPLE FINISH: PAINTED TO MATCH ADJACENT WALL COLOR	06 20 00		

END OF SECTION

Darrington Library – Sno-Isle Libraries Darrington, WA MSR Design #2022015DAR

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. Section 00 50 00 Contracting Forms and Supplements: Forms to be used.
- B. Section 00 72 00 General Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 01 78 00 Closeout Submittals: Project record documents.

1.03 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization and bonds and insurance.
- F. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- G. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- H. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Owner will pay the Contractor upon receipt of properly completed invoices, which shall be submitted to Facilities@sno-isle.org (electronic invoice) or mail to Owner's Contract Manager. The invoices shall describe and document to Owner's satisfaction:

- An appropriate purchase order number
- A description of work performed
- Any fees
- Local sales tax
- The Prevailing Wage Statement that must be included on **all** invoices: "We certify prevailing wages were paid in accordance with the pre-filed Statement of Intent to Pay Prevailing Wages on file with the public agency."

To receive reimbursement, the Contractor must provide a detailed breakdown of authorized expenses (prior to purchase or engagement in said expenses), identifying what was expended and when. Before

any payment can be made, an *Intent to Pay Prevailing Wages* must be filed and approved by the Department of Labor & Industries (L&I).

- B. Payment Period: Submit at intervals stipulated in the Agreement.
- C. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- D. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- E. Forms filled out by hand will not be accepted.
- F. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
- G. Execute certification by signature of authorized officer.
- H. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- I. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- J. Submit one electronic and three hard-copies of each Application for Payment.
- K. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 01 30 00.
 - 2. Construction progress schedule, revised and current as specified in Section 01 30 00.
 - 3. Partial release of liens from major subcontractors and vendors.
 - 4. Project record documents as specified in Section 01 78 00, for review by Owner which will be returned to the Contractor.
 - 5. Affidavits attesting to off-site stored products.
- L. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- C. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.

- D. All change Orders require a new purchase order to be submitted.
- E. Any changes to the Agreement that exceed 10% (individually or combined) of the total Contract Sum (including sales tax) will require addenda to the Agreement.
- F. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a estimated price quotation within 14 days.
- G. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 60 00.
- H. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect and Construction Manager.
 - 3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
 - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work and approved by the Construction Manager.
- I. Substantiation of Costs: Provide full information required for evaluation.
 - 1. Provide the following data:
 - a. Quantities of products, labor, and equipment .
 - b. Taxes, insurance, and bonds (including 100% payment / performance bond and 5% retainage bond).
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 - 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 - 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- J. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Agreement.
- K. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- L. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- M. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 70 00.
 - 2. An Affidavit of Wages Paid has been filed and approved by L&I for the entire amount of the project including tax and Change Orders (if applicable).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

SECTION 01 23 00

ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Procedures for pricing Alternates.
- C. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED REQUIREMENTS

1.03 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 SCHEDULE OF ALTERNATES

- A. Alternate No. 01 Photovoltaic Panels
 - 1. Base Bid: No Photovoltaic Panels
 - 2. Alternate: Provide 9KW Photovoltaic Panels on main entry South roof, turn-key installation as shown in sheet A001.
- B. Alternate No. 02 Exterior Window A (2'-0" X 4'-0")
 - 1. Base Bid: No Exterior Window A
 - 2. Add Alternate: Provide new exterior window A (2'-0" x 4'-0") as specified in the drawings.
- C. Alternate No. 03: New door and door frame in west wall of Meeting room 116
 - 1. Base Bid: Keep existing door, door frame and hardware as is.
 - 2. Add Alternate: Provide new door, door frame and door hardware for new door to swing out. Match door and door frame to adjacent existing door and door frame.
- D. Alternate No. 04: New door and door hardware at Town Hall entry door, 115-CH.
 - 1. Base Bid: Keep existing door, door frame and hardware as is.
 - 2. Add Alternate: Provide new wood door with half view glass to match existing door and new door hardware in existing door frame.
- E. Alternate No. 05: New concrete sidewalk to Outdoor area.
 - 1. Base Bid: No sidewalk connecting to outdoor area.
 - 2. Add Alternate: Provide new concrete sidewalk to outdoor area as specified in the drawings.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Electronic document submittal service.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Requests for Information (RFI) procedures.
- J. Submittal procedures.
- K. Release of CAD/BIM files.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 General Conditions: Dates for applications for payment.
- B. Section 01 60 00 Product Requirements: General product requirements.
- C. Section 01 70 00 Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 78 00 Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 PROJECT COORDINATOR

- A. Project Coordinator: Construction Manager.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for site and building access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 10 00 Summary.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
 - 1. Requests for Information.
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.

- 7. Applications for payment and change order requests.
- 8. Progress schedules.
- 9. Coordination drawings.
- 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
- 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via email to purchasing@sno-isle.org.
 - 1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punch list, and any other document any participant wishes to make part of the project record.
 - 2. It is Contractor's responsibility to submit documents in allowable format.
 - 3. Paper document transmittals will not be reviewed.
 - 4. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts, which shall be delivered by mail or courier.
 - 5. All copies of documents submitted will be retained in accordance with the Washington Public Records Act per Chapter 42.56 of the Revised Code of Washington (RCW)

3.02 RELEASE OF CAD/BIM FILES

- A. Contractors may request plans for their use/benefit for assistance in preparing submittals or for use in construction.
 - 1. The Revit model will be provided at no charge.
 - 2. If CAD files, contractor shall identify specific sheets to be produced as files.
 - 3. A signed release form is required.

3.03 PRECONSTRUCTION MEETING

- A. Project Coordinator will schedule a meeting after Notice of Award and a Purchase Order has been created by the Owner.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Major subcontractors.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract, the Owner's Representative and Architect.

- 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
- 7. Scheduling.
- D. Project Coordinator (CM) will record minutes and distribute copies within 7 days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.
 - 1. Minutes will be distributed through email.

3.04 PROGRESS MEETINGS

- A. Project Coordinator will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- B. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. Architect, at frequency per Owner-Architect agreement.
 - 4. Contractor's superintendent.
 - 5. Major subcontractors.
 - 6. Major Suppliers.
 - 7. Additional consultants, subcontractors, suppliers and product representatives as appropriate to agenda topics for each meeting.

C. Agenda:

- 1. Review minutes of previous meetings.
- 2. Review of work progress.
- 3. Field observations, problems, and decisions.
- 4. Identification of problems that impede, or will impede, planned progress.
- 5. Review of submittals schedule and status of submittals.
- 6. Review of off-site fabrication and delivery schedules.
- 7. Maintenance of progress schedule.
- 8. Corrective measures to regain projected schedules.
- 9. Planned progress during succeeding work period.
- 10. Coordination of projected progress.
- 11. Maintenance of quality and work standards.
- 12. Effect of proposed changes on progress schedule and coordination.
- 13. Other business relating to work.
- D. Project Coordinator (CM) will record minutes and distribute copies within 5 days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.
 - 1. Minutes will be distributed through email or Web based project management software system

3.05 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.

3.06 COORDINATION DRAWINGS

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

3.07 REQUESTS FOR INFORMATION (RFI)

- A. Definition: A request seeking one of the following:
 - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 - 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 - 2. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
 - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section 01 60 00 Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 - 2. Owner's, Architect's, and Contractor's names.
 - 3. Discrete and consecutive RFI number, and descriptive subject/title.
 - 4. Issue date, and requested reply date.
 - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).

- 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
- 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
 - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 - 2. Note dates of when each request is made, and when a response is received.
 - 3. Highlight items requiring priority or expedited response.
 - 4. Highlight items for which a timely response has not been received to date.
 - 5. Identify and include improper or frivolous RFIs.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
 - 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
 - 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 - 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 - 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
 - 4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.08 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
 - 1. Coordinate with Contractor's construction schedule and schedule of values.
 - 2. Format schedule to allow tracking of status of submittals throughout duration of construction.
 - 3. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.09 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.

- 4. Samples for verification.
- 5. Other types indicated.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 Closeout Submittals.

3.10 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.
- C. Daily Log: Submit to Owner through Architect two (2) copies of Contractor's daily log indicating all personal on-site including names and time on site. Submit at maximum of monthly intervals at progress meetings and immediately upon request of Owner

3.11 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 Closeout Submittals:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.12 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
 - 1. Transmit to Architect/ Engineer via email to General Contractor.
- B. Extra Copies at Project Closeout: See Section 01 78 00.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. Retained samples will not be returned to Contractor unless specifically so stated.

3.13 SUBMITTAL PROCEDURES

- A. General Requirements:
 - 1. Use a single transmittal for related items.

- 2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
- 3. Transmit using approved form.
 - a. Use Contractor's form, subject to prior approval by Architect.
- 4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
- 5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
- 6. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
- 7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
 - a. Send submittals in electronic format via email to Architect.
- 8. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
 - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
- 9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
- 10. Provide space for Contractor and Architect review stamps.
- 11. When revised for resubmission, identify all changes made since previous submission.
- 12. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
- 13. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
- 14. Submittals not requested will be recognized, and will be returned "Not Reviewed",
- B. Product Data Procedures:
 - 1. Submit only information required by individual specification sections.
 - 2. Collect required information into a single submittal.
 - 3. Submit concurrently with related shop drawing submittal.
 - 4. Do not submit (Material) Safety Data Sheets for materials or products.
- C. Shop Drawing Procedures:
 - 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 - 2. Do not reproduce Contract Documents to create shop drawings.
 - 3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
 - 1. Transmit related items together as single package.
 - 2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

- 3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.
- E. Submittals shall be numbered by Specification section and sequence: ie 23 5243 1, 23 5243-2. Revise submittals with original number and a sequential alphabetic suffix.

3.14 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
 - 1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect's and consultants' actions on items submitted for review:
 - 1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "Approved", or language with same legal meaning.
 - b. "Approved as Noted, Make Corrections Noted", or language with same legal meaning.
 - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
 - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 - 2. Not Authorizing fabrication, delivery, and installation:
 - a. "Revise and Resubmit".
 - 1) Resubmit revised item, with review notations acknowledged and incorporated.
 - 2) Non-responsive resubmittals may be rejected.
 - b. "Rejected".
 - 1) Submit item complying with requirements of Contract Documents.
- E. Architect's and consultants' actions on items submitted for information:
 - 1. Items for which no action was taken:
 - a. "Received" to notify the Contractor that the submittal has been received for record only.
 - 2. Items for which action was taken:
 - a. "Reviewed" no further action is required from Contractor.

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. References and standards.
- C. Contractor's construction-related professional design services.
- D. Contractor's design-related professional design services.
- E. Control of installation.
- F. Mock-ups.
- G. Tolerances.
- H. Manufacturers' field services.
- I. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 00 72 00 General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 30 00 Administrative Requirements: Submittal procedures.
- C. Section 01 45 33 Code-Required Special Inspections and Testing;
- D. Section 01 60 00 Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

1.04 DEFINITIONS

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
 - 1. Temporary sheeting, shoring, or supports.
 - 2. Temporary scaffolding.

- 3. Temporary bracing.
- 4. Temporary stairs or steps required for construction access only.
- 5. Temporary hoist(s) and rigging.
- 6. Investigation of soil conditions and design of temporary foundations to support construction equipment.

1.06 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
 - 1. Structural Design of Formwork: As described in Section 03 30 00 Cast-in-Place Concrete
 - 2. Concrete Mix Design: As described in Section 03 30 00 Cast-in-Place Concrete. No specific designer qualifications are required.
 - 5. Structural Design of Metal Framing: As described in Section 05 40 00 Cold-Formed Metal Framing.
 - 6. Structural Design of Metal Fabrications: As described in Section 05 50 00 Metal Fabrications.
 - 7. Structural Design of Railings: As described in Section 05 70 00 Decorative Metal Railings.
 - 8. Structural Design: Include calculations for resisting wind loads, anchor locations, loads at points of attachment to building structure, physical characteristics, resulting dimensional limitations as described in Section 08 44 11 Glazed Timber Curtain Walls.
 - 9. Structural Design: Include calculations for resisting wind loads, anchor locations, loads at points of attachment to building structure, physical characteristics, resulting dimensional limitations as described in Section 08 44 13 Glazed Aluminum Curtain Walls.
 - 10. Structural Calculations for Toggle-Glazed IGUs: As described in Section 08 80 00 Glazing.
 - 11. Sprinkler Layout: Coordinate with ceiling installation, detailed pipe layout, and hydraulic calculations as described in Section 21 13 00 Fire-Suppression Sprinkler Systems.
 - 12. Structural Design of Seismic Controls: As described in Section 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment.
 - 13. Structural Design of Seismic Controls: As described in Section 26 05 48 Vibration and Seismic Controls for Electrical Systems.

1.07 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
 - 1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
 - 2. Include required product data and shop drawings.
 - 3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
 - 4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
- C. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued.

- b. Project title and number.
- c. Name of inspector.
- d. Date and time of sampling or inspection.
- e. Identification of product and specifications section.
- f. Location in the Project.
- g. Type of test/inspection.
- h. Date of test/inspection.
- i. Results of test/inspection.
- j. Compliance with Contract Documents.
- k. When requested by Architect, provide interpretation of results.
- 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

1.08 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.09 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ and pay for services of an independent testing agency to perform specified testing and inspection.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. See Section 01 45 33 Code-Required Special Inspections and Testing for additional information.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Notify Architect and Architect's Consultant fifteen (15) working days in advance of dates and times when mock-ups will be constructed.
- D. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- E. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- F. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- G. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
- H. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- I. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.
- J. Where possible salvage and recycle the demolished mock-up materials.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities: Electricity, lighting, heat, ventilation.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers and enclosures.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project signage.
- I. Field offices.

1.02 REFERENCE STANDARDS

- A. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

1.03 DEFINITIONS

A. Project Coordinator: Construction Manager.

1.04 GENERAL

- A. Install temporary facilities and utilities in conformance with State and Local Codes and requirements.
- B. Contractors to obtain and pay for required applications, permits and inspections.
- C. Early Service: Any Contractor requiring temporary service before it can be provided as specified, or whose requirements with respect to a particular service differ from the service specified shall provide such service as suits his needs, at his own expense, and in a manner satisfactory to the Construction Manager.
- D. Maintenance: Temporary facilities and utilities are to be maintained and kept in good operating condition. Maintenance men necessary to perform this work shall be provided in accordance with requirements. Maintenance time will include normal working hours for all trades and start up and shut down overtime as required.
- E. Removals: Subject to approval of Construction Manager, contractor providing temporary facilities or services shall remove same when no longer required or when their function is replaced by authorized use of permanent facilities. Other removal time may be directed by Construction Manager.
- F. Install temporary work in such a manner as not to interfere with the permanent construction.
- G. Disclaimer: Specific administrative and procedural minimum actions are specified in this section, as extension of provisions in General Conditions and other contract documents. These requirements have been included for special purposes as indicated. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized as an indication by Architect, Engineer or Construction Manager that such temporary activity is not required for successful completion of the work and compliance with requirements of contract documents.

Provisions of this section are applicable to, but not by way of limitation, utility services, construction facilities, security/protection provisions, and support facilities.

- H. Use of permanent systems and facilities:
 - 1. Obtain written agreement with Owner, establishing start of warranties and conditions of use:
 - a. Systems complete, with utility connections and safety devices.
 - b. Automatic controls operational.
 - c. Temporary filters and items required for protection of equipment and finishes are in place.
 - d. Replace items damaged during temporary service use.

1.05 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power , consisting of connection to existing facilities.
 - 2. Water supply, consisting of connection to existing facilities.
- B. Provide and pay for all lighting, heating and cooling, and ventilation required for construction purposes.
 - 1. General Responsibilities: Temporary heating responsibilities and equipment types relate to the extent of building enclosure and work performed as follows:
 - a. Permanent Enclosure: Temporary heat of the building after the building is permanently enclosed and approved as such by the Architect, shall be provided by the Contractor. Permanent enclosure is defined as permanent walls, roofs, copings, and flashings in place and weathertight, windows in place and glazed and all entrance enclosures either permanently in place or provided with suitable temporary enclosures.
 - 1) Equipment: Temporary construction heaters, indirect fire heaters.
 - 2) Cost: Cost of fuel and electric power consumed paid for by the Contractor to be reimbursed for the full cost by the Owner.
 - 3) Work Restrictions: None except as may be stated in separate Specification Sections or required by the manufacturer, such as special ventilation requirements.
 - 2. Ventilation: The Mechanical Contractor shall provide ventilation for the building and to prevent building up of harmful dusts and fumes and to remove excess moisture. During warm weather, provide an adequate supply of fresh air (minimum 1 to 1-1/2 air changes per hour) when necessary to properly ventilate for moisture, dust, fumes from paints, cements, or adhesives in tightly enclosed area where natural ventilation will not be sufficient. Ventilation requirements may be supplemented by the building's permanent HVAC system but primary responsibility rests with the designated trade contractor.
 - 3. Mechanical Trade Contractor Responsibilities:
 - a. Maintain as to temperatures and ventilation required for work in various parts of the building as follows:
 - 1) Stored Materials: As recommended by manufacturer.
 - 2) Installed Materials: As recommended by manufacturer for the length of time following installation.
 - b. Maintain that portion of any floor thereof which has been constructed, or partly constructed, at a temperature and humidity that will ensure against damage due to warping, buckling, excessive shrinkage, etc., and adequate ventilation until the permanent HVAC system is operating. Trade Contractor will be responsible for damage to work under other contracts due to smoke or other damage caused by improper temporary heating.
 - c. Installation, connection, operation, and maintenance of temporary heating and ventilating devices to be performed by tradesmen proficient in the skills required and meet requirements of applicable regulator agencies.
 - d. Temperature Requirements:

- 1) Provide temperatures required in various parts of the buildings as specified herein below:
- 2) All Trades: provide the range of temperatures required for temporary heat, so the temperature as recommended by the manufacturer of the material concerned is maintained while such materials as mentioned above are stored in the building or being installed, and for the length of time recommended following installation. In those portions of the building where work is in progress or completed, it must be protected from freezing if subject to damage there from.
- 4. During General Contract Work: Provide the following:
 - a. During installation of gypsum wallboard or gypsum lath, a temperature of not less than 55 deg F during working hours, and a temperature of at least 40 deg F at all other times throughout the heating season.
 - b. Wall before plaster work or joint work for gypsum wall board begins and continuous throughout setting and drying periods, a temperature range between 50 and 75 deg F shall be maintained day and night. During this period, no finish woodwork, resilient flooring or flexible wall coverings shall be installed or stored in the buildings, and no finish painting or applying of finish wall coatings shall be undertaken.
 - c. For a period of 10 days previous to the placing of interior wood finish and throughout the placing of this and other interior finishing, varnishing, painting, etc., and until final acceptance of the work or until fully occupied by the Owner, provide sufficient heat to produce a temperature of not less than 60 deg F.
- 5. Permanent Systems:
 - a. Ten days prior to setting millwork and/or wood doors and when approved by Architect, use and maintain the permanent HVAC system for heating, cooling and ventilation. The amount of time the permanent system will be used during the construction project should be at most four months. Maintenance shall include the following:
 - 1) Proper operation and maintenance of the HVAC plant until acceptance of building by Owner.
 - 2) Maintenance of temporary filters in all equipment to prevent accumulation of dust and dirt in coils, housing, and ductwork.
 - 3) Prior to Final Inspection: Replacement of all (temporary and existing) filters with new filters, thorough cleaning of coils and other equipment, putting entire system into first class condition, cleaning traps and devices, adjustment and renewal of all materials and equipment not functioning correctly.
 - 4) Use of permanent heating or cooling equipment for temporary heating or cooling shall not affect guarantee. Guarantee shall take effect at time of building acceptance by Owner. Mechanical contractor to provide extended warranty as needed.
 - 5) Cost of all fuel for operation of permanent heating system shall be paid by the Contractor and be reimbursed in full by the Owner.
 - b. Close off return air to the permanent systems and provide only single-pass air during the course of construction. This practice shall remain in place until area is clean and system is ready for final balancing.
 - c. Replace filters in all equipment to prevent accumulation of dust and dirt in coils, housings, and ductwork.
 - d. Prior to Final Inspection:
 - 1) Replace temporary filters with new filters.
 - 2) Thoroughly clean coils and other equipment.
 - 3) Clean traps and devices, adjust and renew any and all materials and equipment not functioning correctly.

- 4) Vacuum clean the duct system.
- 5) Restore equipment to like new condition.
- C. Existing facilities may be used.
- D. Temporary light and power:
 - 1. Each Contractor:
 - a. Provide temporary light and power for its own construction field office.
 - b. Provide and pay for its own extensions for lights or power tools beyond the receptacle outlets provided below.
 - 2. Electrical Contractor:
 - a. Provide temporary light and power distribution for construction purposes for all trades including the cost of running temporary service from the utility supply. The temporary lighting and power system shall comply with all applicable OSHA regulations.
 - Temporary power to be sufficient to operate all "light tools" and equipment (electric arc welders excluded) and permanent building equipment including elevators and HVAC system.
 - 2) Additional temporary power required by other trades to be furnished, at their cost, up to the power available.
 - 3. The electrical requirements for all temporary heating and ventilating systems shall be connected directly to the project temporary power system until the primary service is installed.
 - 4. Temporary lighting distribution to be made from the temporary panels indicated above. Each circuit shall consist of "pigtail" receptacles on 20 foot centers with 200 watt lamps installed in every other receptacle leaving the alternate receptacles for added concentration of lighting as needed. Wire fixtures with #8 AWG wire and suspend at least 10'-6" above the floor.
 - a. As interior partitions are erected, revise the temporary lighting arrangements so that not less than 1 lamp is provided in each space if needed for work or required for safety. Also, install lights as directed by General Contractor, in smaller areas where required to provide adequate light for work being carried out in the space.
 - b. Receptacle Outlets: See temporary light and power.
 - c. Furnish and install 200 Watt lamps for general circuit lighting and all fuses as may be required for a complete job.
 - d. Replace lamps, fuses, including theft, throughout the life of the project.
 - e. Install and maintain a reasonably balanced system and take current readings on the feeders at regular intervals as required. Correct any serious phase unbalance.
 - f. Protect the installation against weather damage, normal operations of other trades, and other persons on the site. Be responsible for the proper use and maintenance of temporary wiring systems until they are removed.

1.06 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Internet Connections: Minimum of one; DSL modem or faster.

1.07 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. New permanent facilities may not be used during construction operations.

C. Maintain daily in clean and sanitary condition.

1.08 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.09 INTERIOR ENCLOSURES

- A. Provide temporary partitions to separate work areas from areas not in scope, to prevent penetration of dust and moisture, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces:
 - 1. Maximum flame spread rating of 25 in accordance with ASTM E84.
- C. Provide all shoring and bracing required for safety and proper execution of the work. Remove the items when the work is completed.
- D. Paint surfaces exposed to view from Owner-occupied areas.

1.10 SECURITY

- A. Provide security and facilities to protect Work, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.11 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities, Construction Manager and Owner.
- C. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.
- D. Provide and maintain access to fire hydrants, free of obstructions. Leave fire lanes and aisles to fire fighting equipment unobstructed at all times. Do not pile material in front of fire equipment, fire doors, or hydrants.
- E. Provide means of removing mud from vehicle wheels before entering streets.
- F. Designated existing on-site roads may be used for construction traffic.
- G. Construct and maintain temporary roads accessing public thoroughfares to serve construction area. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
- H. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- I. Existing parking areas may be used for construction parking.
 - 1. Do not obstruct egress to and from parking areas unless authorized by Project Coordinator and/or Owner.
- J. Provide one additional parking space for Visitor use.
- K. Parking of private vehicles of workers shall be in an area allocated by Project Coordinator and/or Owner.

1.12 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition. Locate in area designated by Owner and Construction Manager.
- B. Provide containers with lids. Remove trash from site periodically, legally disposing of waste materials, debris and rubbish off site and off Owner's property.
- C. Remove waste materials, debris, and rubbish from building daily.
- D. Carts, trucks, etc. used to transport materials shall be loaded in a safe manner. Materials shall not protrude beyond the sides of conveyance used.
- E. Materials shall not be thrown or dropped from scaffolds or other overhead areas.
- F. Gasoline or other highly flammable liquids shall not be brought inside facilities.

1.13 PROJECT IDENTIFICATION

- A. Project Coordinator to provide and erect project identification sign.
- B. No other signs are allowed without Owner permission except those required by law.

1.14 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture and drawing display table.
 - 1. Review proposed location within Project Site with Project Coordinator and Owner.
 - 2. Provide space for Project meetings, with table and chairs to accommodate 10 persons.
- B. Locate offices a minimum distance of 30 feet from existing and new structures.
- C. Field Offices shall be maintained until final acceptance and then be removed by the responsible party, no later than fifteen (15) days after acceptance of building, unless the Construction Manager orders or approves earlier removal.
- D. Expenses:
 - 1. Project Coordinator: All expenses in connection with his Field Offices, including the installation costs and use of telephones, heat, air-conditioning, light, water and janitor service shall be paid for by the General Contractor and will be fully reimbursed by the Owner.
 - 2. Contractors: All expenses associated with their offices including utility installation costs shall be included in their bid.
 - 3. Toll Costs: All long distance calls to be paid for by party placing call including Architect, Owner's representative, and contractors.
- E. Each Contractor: To keep a complete set of drawings, and specifications kept marked up to date with revision, Addenda, as-built drawings, and all permits and approved shop drawings on file.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.
- D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Sustainable design-related product requirements.
- C. Re-use of existing products.
- D. Transportation, handling, storage and protection.
- E. Product option requirements.
- F. Substitution limitations.
- G. Procedures for Owner-supplied products.
- H. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 Summary: Lists of products to be removed from existing building.
- B. Section 01 10 00 Summary: Identification of Owner-supplied products.
- C. Section 01 60 10 Substitution Procedures: Substitutions made during construction phases.
- D. Section 01 60 10.01 Substitution Request Form
- E. Section 01 40 00 Quality Requirements: Product quality monitoring.
- F. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOCrestricted product categories.
- G. Section 01 74 19 Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

- A. C2C (DIR) C2C Certified Products Registry; Cradle to Cradle Products Innovation Institute.
- B. CAL (CDPH SM) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers.
- C. EN 15804 Sustainability of construction works Environmental product declarations Core rules for the product category of construction products.
- D. GreenScreen (LIST) GreenScreen for Safer Chemicals List Translator; Clean Production Action.
- E. GreenScreen (METH) GreenScreen for Safer Chemicals Method v1.2; Clean Production Action.
- F. ISO 14025 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures.
- G. ISO 14040 Environmental management -- Life cycle assessment -- Principles and framework.
- H. ISO 14044 Environmental management -- Life cycle assessment -- Requirements and guidelines.
- I. ISO 21930 Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services.

1.04 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

1.05 QUALITY ASSURANCE

- A. CAL (CDPH SM) v1.1: California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, v. 1.1–2010, for the emissions testing and requirements of products and materials.
- B. Cradle-to-Cradle Certified: End use product certified Cradle-to-Cradle v2 Basic or Cradle-to-Cradle v3 Bronze, minimum, as evidenced by C2C (DIR).
- C. Environmental Product Declaration (EPD): Publicly available, critically reviewed life cycle analysis having at least a cradle-to-gate scope.
 - 1. Good: Product-specific; compliant with ISO 14044.
 - 2. Better: Industry-wide, generic; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
 - 3. Best: Commercial-product-specific; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
 - 4. Where demonstration of impact reduction below industry average is required, submit both industry-wide and commercial-product-specific declarations; or submit at least 5 declarations for products of the same type by other manufacturers in the same industry.
- D. GreenScreen Chemical Hazard Analysis: Ingredients of 100 parts-per-million or greater evaluated using GreenScreen (METH).
 - 1. Good: GreenScreen (LIST) evaluation to identify Benchmark 1 hazards; a Health Product Declaration includes this information.
 - 2. Better: GreenScreen Full Assessment.
 - 3. Best: GreenScreen Full Assessment by GreenScreen Licensed Profiler.
 - 4. Acceptable Evidence: GreenScreen report.
- E. Health Product Declarations (HPD): Complete, published declaration with full disclosure of known hazards, prepared using one of the HPDC (HPD-OLT) online tools.
- F. Sustainably Harvested Wood: Solid wood, wood chips, and wood fiber certified or labeled by an organization accredited by one of the following:
 - 1. American Forest Foundation, The American Tree Farm System; refer to http://www.treefarmsystem.org.
 - 2. The Forest Stewardship Council, The Principles for Natural Forest Management; for Canada visit http://www.fsccanada.org, for the USA visit http://www.fscus.org.
 - 3. Sustainable Forestry Board, under The Sustainable Forestry Initiative[®] of the American Forest & Paper Association; refer to http://www.afandpa.org.

4. Acceptable Evidence: Copies of invoices bearing the certifying organization's certification numbers.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- C. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is anticipated.
 - 1. See Section 01 10 00 and the Drawings for list of items required to be salvaged for reuse and relocation.
 - 2. If reuse of other existing materials or equipment is desired, submit substitution request.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. See Section 01 40 00 Quality Requirements, for additional source quality control requirements.
- C. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing CFC's or HCFC's.
 - 2. Made of wood from newly cut old growth timber.
 - 3. Containing lead, cadmium, or asbestos.
- D. Where other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions, as defined in Section 01 61 16.
 - 2. If wet-applied, have lower VOC content, as defined in Section 01 61 16.
 - 3. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 4. Have longer documented life span under normal use.
 - 5. Result in less construction waste.
 - 6. Result in less construction waste. See Section 01 74 19
 - 7. Are made of vegetable materials that are rapidly renewable.
 - 8. Are made of recycled materials.
 - 9. If made of wood, are made of sustainably harvested wood, wood chips, or wood fiber.
 - 10. If bio-based, other than wood, are or are made of Sustainable Agriculture Network certified products.
 - 11. Are Cradle-to-Cradle Certified.
 - 12. Have a published Environmental Product Declaration (EPD).
 - 13. Have a published Health Product Declaration (HPD).
 - 14. Have a published GreenScreen Chemical Hazard Analysis.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver and place in location as directed; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01 60 10 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 10 00 Summary and Drawings for identification of Owner-supplied products.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review Owner reviewed shop drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- C. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 74 19.

- 1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor areas.
- D. Store and protect products in accordance with manufacturers' instructions.
- E. Store with seals and labels intact and legible.
- F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- G. For exterior storage of fabricated products, place on sloped supports above ground.
- H. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- I. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- J. Comply with manufacturer's warranty conditions, if any.
- K. Do not store products directly on the ground.
- L. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- M. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- N. Prevent contact with material that may cause corrosion, discoloration, or staining.
- O. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- P. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

SECTION 01 60 10

SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 Administrative Requirements: Submittal procedures, coordination.
- B. Section 01 60 00 Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.
- C. Section 01 60 10.01 Substitution Request Form
- D. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions: Restrictions on emissions of indoor substitute products.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution Requests made after contract award and for the Contractor's convenience will be subject to review fees, and possibly redesign fees, by the design team. These will be processed as a deductive change order to the contractor and paid to the design team by Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 6. Agrees to reimburse Owner and Architect for review or redesign services associated with reapproval by authorities.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
 - 1. Note explicitly any non-compliant characteristics.

- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Forms included in the Project Manual are adequate for this purpose, and must be used.
- D. Limit each request to a single proposed substitution item.
 - 1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
 - 1. Architect (on behalf of the Owner) will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.
- B. Submittal Form (before award of contract):
 - 1. Submit substitution requests by completing the form provided in Section 00 2613. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit substitution requests by completing the form provided in Section 01 60 10.01. See this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
 - 1. Contractor is responsible for ensuring that the proposed substitution is of equal to or superior to the basis of design in performance, appearance, quality and function prior to Architect's review.
 - 2. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 3. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 4. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request. These will be processed as a deductive change order to the contractor and paid to the design team by the Owner.
 - b. Other construction by Owner.
 - c. Other unanticipated project considerations.
- D. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.

3.04 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.

1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

SECTION 01 60 10.01

SUBSTITUTION REQUEST FORM

We hereby submit for your consideration the following product instead of the specified item for the following project:

PROJECT TITLE _D	Darrington Library Project		
DRAWING NO.		DRAWING TITLE	
SPEC. SECTION	SPEC. TITLE PARAGRAPH	SPECIFIED ITEM	

Proposed Substitution:

Attach complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Submit, with request, all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance.

Substitutions of the materials and equipment described in the Contract Documents will be considered during the bidding period upon receipt or a written request to the Architect for approval up to ten (10) days before receipt of bids. Verbal or written requests without the completed Substitution Request Form will not be considered.

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

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

Submitted by:						
Signature						
Firm						
Address						
Telephone	Email	Date				
Signature shall be l	by person having authority to legally b	ind his firm to t	he above:	terms. Failure		
provide legally bind	ding signature will result in retraction of	of approval.				
Fill in Blanks Belov	ding signature will result in retraction o	of approval.				
provide legally bin Fill in Blanks Belov Does the substituti	ding signature will result in retraction o v: ion affect dimensions shown on Drawi	of approval. ngs?	Yes	No		
provide legally bin Fill in Blanks Belov Does the substituti If yes, clearly indica	ding signature will result in retraction o v: ion affect dimensions shown on Drawi ate changes:	of approval. ngs?	Yes	No		
Fill in Blanks Belov Does the substituti If yes, clearly indica	ding signature will result in retraction o v: ion affect dimensions shown on Drawi ate changes:	of approval. ngs?	Yes	No		

Α.

Β.

If no, fully explain:

- C. What effect does substitution have on other Contracts or other trades?
- D. What effect does substitution have on construction schedule?
- E. Manufacturer's warranties of the proposed and specified items are:
 - ____ Same ______ Different (Explain on Attachment)
- F. Reason for Request:
- G. Itemized comparison of specified item(s) with the proposed substitution. List significant variations:
- H. Accurate cost data comparing proposed substitution with product specified:
- I. Designation of maintenance services and sources:

(ATTACH ADDITIONAL SHEETS IF REQUIRED)

FOR USE BY DESIGN PROFESSIONAL:

Recommended	Recommended as Noted			
Not Recommended	Received Too Late			
Signed By				
Date				
FOR USE BY OWNER'S REPRESENTATIVE	OR OWNER:			
Approved	Approved as Noted			
Not Approved	Approved Too Late			
Signed By				
Date				
	END OF SECTION			

SECTION 01 61 16

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for Indoor-Emissions-Restricted products.
- B. Requirements for VOC-Content-Restricted products.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 Administrative Requirements: Submittal procedures.
- B. Section 01 40 00 Quality Requirements: Procedures for testing and certifications.
- C. Section 01 60 00 Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
 - 1. Interior paints and coatings applied on site.
 - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
 - 3. Flooring.
 - 4. Composite wood.
 - 5. Products making up wall and ceiling assemblies.
 - 6. Thermal and acoustical insulation.
- B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
 - 1. Interior paints and coatings applied on site.
 - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
- C. Interior of Building: Anywhere inside the exterior weather barrier.
- D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
 - 1. Concrete.
 - 2. Clay brick.
 - 3. Metals that are plated, anodized, or powder-coated.
 - 4. Glass.
 - 5. Ceramics.
 - 6. Solid wood flooring that is unfinished and untreated.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.
- B. ASTM D3960 Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- C. CAL (CDPH SM) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers.
- D. CARB (ATCM) Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products; California Air Resources Board.
- E. CHPS (HPPD) High Performance Products Database.
- F. CRI (GLP) Green Label Plus Testing Program Certified Products; www.carpet-rug.org.
- G. GreenSeal GS-36 Adhesives for Commercial Use.
- H. SCAQMD 1113 South Coast Air Quality Management District Rule No.1113.
- I. SCAQMD 1168 South Coast Air Quality Management District Rule No.1168.
- J. SCS (CPD) SCS Certified Products.
- K. UL (GGG) GREENGUARD Gold Certified Products.

1.05 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

1.06 QUALITY ASSURANCE

- A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
 - 1. Wet-Applied Products: State amount applied in mass per surface area.
 - 2. Paints and Coatings: Test tinted products, not just tinting bases.
 - 3. Evidence of Compliance: Acceptable types of evidence are the following;
 - a. Current UL (GGG) certification.
 - b. Current SCS (CPD) Floorscore certification.
 - c. Current SCS (CPD) Indoor Advantage Gold certification.
 - d. Current listing in CHPS (HPPD) as a low-emitting product.
 - e. Current CRI (GLP) certification.
 - f. Test report showing compliance and stating exposure scenario used.
 - 4. Product data submittal showing VOC content is NOT acceptable evidence.
 - 5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.
- B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Report of laboratory testing performed in accordance with requirements.
 - b. Published product data showing compliance with requirements.
 - c. Certification by manufacturer that product complies with requirements.
- C. Composite Wood Emissions Standard: CARB (ATCM) for ultra-low emitting formaldehyde (ULEF) resins.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current SCS "No Added Formaldehyde (NAF)" certification; www.scscertified.com.
 - b. Report of laboratory testing performed in accordance with requirements.
 - c. Published product data showing compliance with requirements.
 - d. Certification by manufacturer that product complies with requirements.
- D. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
 - 1. Composite Wood, Wood Fiber, and Wood Chip Products: Comply with Composite Wood Emissions Standard or contain no added formaldehyde resins.
 - 2. Inherently Non-Emitting Materials.
- C. VOC-Content-Restricted Products: VOC content not greater than required by the following:
 - 1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
 - 2. Aerosol Adhesives: GreenSeal GS-36.
 - 3. Joint Sealants: SCAQMD 1168 Rule.
 - 4. Paints and Coatings: Each color; to comply with:
 - a. SCAQMD 1113 Rule.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- I. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 30 00 Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 40 00 Quality Requirements: Testing and inspection procedures.
- D. Section 01 50 00 Temporary Facilities and Controls: Temporary interior partitions.
- E. Section 01 78 00 Closeout Submittals: Project record documents, operation and maintenance data, warranties .
- F. Section 02 41 00 Demolition: Demolition of whole structures and parts thereof; disposal.
- G. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed work and products to be used.
 - e. Effect on work of Owner or separate Contractor.

- f. Written permission of affected separate Contractor.
- g. Date and time work will be executed.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

- A. See Section 01 10 00 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect five days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- H. Utilize recognized engineering survey practices.

- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations, and addition roof elevation.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction sufficient to control the spread of fine particulates .
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
 - 3. Where new penetrations are made through the roof, protect openings from water and cold temperatures until patches are made. Coordinate work to minimize time temporary protection is required.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Notify Architect if rotted wood, corroded metals, and deteriorated masonry and concrete are encountered which were not indicated to be removed; do not proceed until it is determined if replacement with new construction is required.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Coordinate with CM to identify limitations on outages and required notifications.
 - c. Provide temporary connections as required to maintain existing systems in service.
 - 4. Verify that abandoned services serve only abandoned facilities.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- F. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 - 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 - 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- I. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- J. Clean existing systems and equipment.
- K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- L. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.

- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work tightly to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site weekly and dispose off-site; do not burn or bury.

3.09 PROTECTION OF EXISTING AND INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.

- G. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
 - 1. Minimum protection to include the following:
 - a. One layer of 1/4 inch thick fanfold board ("Amocor'PB4" by Amoco or equal) laid directly over roof.
 - b. One layer of nominal 1/2 inch thick exterior plywood or exterior OSB board laid over fanfold board. Provide suitable ballast to maintain position and preclude blow-off. Do not overload structure.
 - 2. After completion of work operations on roof, remove temporary protection, restore roof to preconstruction condition, and repair damage to roof, if any; see below.
 - a. Damage/Warranties: Damage to existing roofing due to operations under this Contract to be repaired as required by roofing membrane manufacturer without reduction in Owner's warranty provisions and rights:
 - b. All costs associated with repairs and warranty reinstatements, if any, to be borne by the Contractor who caused the damage.
 - c. Existing Warranties: Coordinate with Owner for areas of roof which carry existing warranty; repairs in these areas, if any, to be made by original installer.
- H. Prohibit traffic from landscaped areas.
- I. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.12 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Testing, adjusting, and balancing HVAC systems: See Section 23 05 93 Testing, Adjusting, and Balancing for HVAC.

3.13 FINAL CLEANING

- A. Execute final cleaning prior to Substantial Completion.
 - 1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Replace filters of operating equipment.
- G. Clean debris from roofs and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.
- J. Clean Owner-occupied areas of work.

3.14 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.1. Provide copies to Architect and Owner.
- B. Accompany Contractor and/or Owner on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.15 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requests that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.
- E. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Wood pallets.
 - 4. Clean dimensional wood: May be used as blocking or furring.
 - 5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 10 00 Site Clearing for use options.
 - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
- F. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.
- B. Section 01 30 00 Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. Section 01 50 00 Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 01 60 00 Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- E. Section 01 70 00 Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.
- F. Section 31 10 00 Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production runoff water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Landfill Alternatives Proposal: Within 10 calendar days after receipt of Notice to Proceed, or prior to any trash or waste removal, whichever occurs sooner, submit a projection of trash/waste that will require disposal and alternatives to landfilling, with net costs.
 - 1. Submit to Architect for Owner's review and approval.
 - 2. If Owner wishes to implement any cost alternatives, the Contract Sum will be adjusted as specified elsewhere.
 - 3. Include an analysis of trash/waste to be generated and landfill options as specified for Waste Management Plan described below.
 - 4. Describe as many alternatives to landfilling as possible:
 - a. List each material proposed to be salvaged, reused, or recycled.
 - b. List the proposed local market for each material.
 - c. State the estimated net cost resulting from each alternative, after subtracting revenue from sale of recycled or salvaged materials and landfill tipping fees saved due to diversion of materials from the landfill.

- 5. Provide alternatives to landfilling for at least the following materials:
 - a. Concrete.
 - b. Bricks.
 - c. Concrete masonry units.
 - d. Asphalt paving.
 - e. Glass.
 - f. Gypsum drywall and plaster.
 - g. Plastic buckets.
 - h. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (http://flooring.dupont.com) and Interface (www.interfaceinc.com) conduct reclamation programs.
 - i. Paint.
 - j. Plastic sheeting.
 - k. Rigid foam insulation.
 - I. Windows, doors, and door hardware.
 - m. Plumbing fixtures.
 - n. Mechanical and electrical equipment.
 - o. Fluorescent lamps (light bulbs).
 - p. Acoustical ceiling tile and panels.
- C. Once Owner has determined which of the landfill alternatives addressed in the Proposal above are acceptable, prepare and submit Waste Management Plan; submit within 10 calendar days after notification by Architect.
- D. Waste Management Plan: Include the following information:
 - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
 - a. List each material proposed to be salvaged, reused, or recycled.
 - b. List the local market for each material.
 - c. State the estimated net cost, versus landfill disposal.
 - 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
 - 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
 - 6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
 - 7. Recycling Incentives: Describe procedures required to obtain credits, rebates, or similar incentives.

PART 2 PRODUCTS

2.01 PRODUCT SUBSTITUTIONS

A. See Section 01 60 00 - Product Requirements for substitution submission procedures.

- B. For each proposed product substitution, submit the following information in addition to requirements specified in Section 01 60 00:
 - 1. Relative amount of waste produced, compared to specified product.
 - 2. Cost savings on waste disposal, compared to specified product, to be deducted from the Contract Sum.
 - 3. Proposed disposal method for waste product.
 - 4. Markets for recycled waste product.

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 01 10 00 for list of items to be salvaged from the existing building for relocation in project or for Owner.
- B. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.
- D. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.
- E. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings, particularly at:
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
 - 4. Job safety meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. As a minimum, provide:
 - a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
 - b. Separate dumpsters for each category of recyclable.
 - c. Recycling bins at worker lunch area.
 - 2. Provide containers as required.
 - 3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
 - 4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
 - 5. Locate enclosures out of the way of construction traffic.
 - 6. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 7. If an enclosed area is not provided, clearly lay out and label a specific area on-site.

- 8. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 00 72 00 General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 30 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form prior to final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.

- 4. Change Orders and other modifications to the Contract.
- 5. Reviewed shop drawings, product data, and samples.
- 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.

- 2. Identify function, normal operating characteristics, and limiting conditions.
- 3. Include performance curves, with engineering data and tests.
- 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Include test and balancing reports.
- N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Original warranties and bonds.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

SECTION 02 41 00 DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of built site elements.
- B. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 10 00 Summary: Sequencing and staging requirements.
- C. Section 01 10 00 Summary: Description of items to be removed by Owner.
- D. Section 01 10 00 Summary: Description of items to be salvaged or removed for re-use by Contractor.
- E. Section 01 50 00 Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- F. Section 01 60 00 Product Requirements: Handling and storage of items removed for salvage and relocation.
- G. Section 01 70 00 Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- H. Section 01 74 19 Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 U.S. Occupational Safety and Health Standards.
- B. NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by owner's representative and all affected installers.

1.05 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Site Plan: Showing:
 - 1. Vegetation to be protected.
 - 2. Areas for temporary construction and field offices.
 - 3. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Schedule of building demolition activities with starting and ending dates for each activity.
 - 3. Include measures for environmental protection, for dust control, and for noise control.
 - 4. Detail special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.
 - 5. Include a summary of safety procedures.
- D. Slab Trenching and Demolition Plan.

- 1. Submit for areas in which Tile Flooring is to be removed and where existing structural slabs are to be modified for install of flush sill accessories as a part of new work.
- 2. Note existing slab configurations, including elevation of structural slab, depth and fill level of recesses in structural slab, and locations of existing steps, curbs and penetrations.
- 3. Note type and condition of substrate material beneath existing tile and recommend extent of continued substrate removal to accommodate completion of new work in area.
 - a. Include locations of spalling or delaminated substrate.
 - b. Coordinate with preparation requirements of Section 03 54 00 and coordinate conference (digital or in-person pending availability of CONC-2 manufacturer's representative) to determine further remediation and suitability of existing substrate or requirements and extents of continued removal for completion of new work in area.
- E. Pre-demolition photographs or video.
- F. Inventory of items that have been removed and salvaged.
- G. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.06 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

1.07 FIELD CONDITIONS

- A. Spaces immediately adjacent to demolition area will be occupied. Conduct demolition so operations of occupied spaces will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied spaces.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent spaces.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent spaces without written permission from authorities having jurisdiction.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. On-site storage or sale of removed items or materials is not permitted.
- E. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied spaces.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

- 3.01 SCOPE
 - A. Selective demolition of the building as required to accommodate new work as shown.
 - B. Remove paving and curbs as required to accomplish new work.
 - C. Remove other items indicated, for salvage, relocation, and for turning over to Owner.

- D. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.
- E. Fill openings or penetrations as result of removals, firestop at rated walls as indicated in code plan.

3.02 MATERIALS OWNERSHIP

- A. Unless otherwise indicated for salvage or turn-over to Owner, demolition waste becomes property of Contractor.
 - 1. Contractor shall uninstall casework and custom millwork e.g. desks, service stations, kiosks in a manner which retains them for re-use or salvage.
 - 2. Contractor shall coordinate with owner for first right of refusal and repurposing elsewhere in project or other Owner's properties.
 - 3. Contractor shall assume ownership of all items not claimed by Owner.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

3.03 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with other requirements specified in Section 01 70 00.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - a. Survey existing conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations. Notify Architect or Engineer of any concerns.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - a. Remove temporary barriers and protections where hazards no longer exist.
 - b. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.
 - 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 8. Do not close or obstruct roadways or sidewalks without permit.
 - 9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. Do not begin removal until built elements to be salvaged or relocated have been removed.
- E. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.

- 1. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
- F. Survey existing conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations. Notify Architect or Engineer of any concerns.
- G. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- H. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- I. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- J. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- K. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.04 BASE BUILDING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least three (3) days prior notification to Owner.
- F. Verify that utilities have been disconnected and capped before starting demolition operations.
- G. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- H. Unused underground piping may be abandoned in place, provided it is completely drained and capped; remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- I. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.05 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on base building construction documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

- B. Cooperate with the Owner and Authorities Having Jurisdiction to provide Interim Life Safety Measures (ILSM) in all areas affected by demolition or construction operations. ILSM consists of the following measures:
 - 1. Ensure exits provide an unobstructed egress. Building areas under construction must maintain escape facilities for construction workers at all times. Provide alternate routes around closed or obstructed traffic-ways if required by authorities having jurisdiction.
 - 2. Ensure fire alarm, detection and suppression systems are not impaired. Provide temporary systems if necessary.
 - 3. Ensure temporary construction partitions are smoke-tight and built of non-combustible or limited combustible materials that will not contribute to the development or spread of fire.
 - 4. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
 - 5. Develop and enforce storage, housekeeping, and debris removal practices that reduce the flammable and combustible fire load of the building to the lowest level necessary for daily operations as stated in the general conditions.
 - 6. Provide hazard surveillance of building, grounds, and equipment with attention to construction areas, construction storage, and field offices.
 - 7. Follow NFPA 241 guidelines pertaining to safe-guarding for construction and demolition processes.
 - 8. Follow NFPA 1 guidelines pertaining to fire prevention measures.
- C. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 .
 - 2. Provide sound retardant partitions of construction indicated on drawings in locations indicated on drawings.
- D. Structural Demolition:
 - 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 - 2. Maintain fire watch during and for at least 24 hours after flame-cutting operations.
 - 3. Maintain adequate ventilation when using cutting torches.
 - 4. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 5. Demolish or Abandon foundation walls and other below-grade construction that are within footprint of new construction and extending 5 feet (1.5 m) outside footprint indicated for new construction as indicated on the drawings.
 - a. Remove below-grade construction, including basements, foundation walls, and footings, to depths indicated.
 - 6. Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Section 312000 Earth Moving.
 - 7. Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.
- E. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- F. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning. Identify contents of containers.

- 3. Store items in a secure area.
- 4. Protect items from damage during transport and storage.
- G. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Inventory and record the condition of items to be removed and salvaged.
- Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as required to achieve design intent indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. See Section 01 10 00 for other limitations on outages and required notifications.
 - 4. Verify that abandoned services serve only abandoned facilities before removal.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- I. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.06 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 3. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 4. Project Coordinator to provide dumpster and coordinate with waste hauler for drop off and pickup.
 - 5. Dumpster to be located on Drwaings, or as agreed upon at Pre-Bid or Pre-Construction meeting by Owner.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 74 19 Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

SECTION 02 52 30

SIDEWALKS, DRIVEWAYS AND CURBS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sidewalks, sidewalk ramps, driveways, curbs and drive approaches complete with concrete materials, concrete curing compounds, joint materials, field quality control and appurtenances.

1.02 RELATED REQUIREMENTS

A. Section 02 41 00 - Demolition

1.03 REFERENCE STANDARDS

- A. Reference Standards: Conform the work for this Section to the applicable portions of the following standard Specifications
 - 1. ASTM American Society of Testing and Materials
 - 2. WSDOT Washington Department of Transportation Standard Specifications for Road and Bridge Construction.
 - 3. AASHTO American Association of State Highway and Transportation Officials
 - 4. ADAAG American with Disabilities Act Accessibility Guidelines

1.04 SUBMITTALS

- A. Reports: Written permission for the use of all local disposal sites Furnish copies to the engineer.
- B. Test Reports:
 - 1. Thickness and Compressive Strength: Provide the ENGINEER with two (2) certified copies of the test results. Perform the tests by a laboratory approved by architect.

1.05 FIELD CONDITIONS

- A. Environmental Requirements:
 - 1. Temperature: Comply with the requirements for concrete installation due to outside ambient air temperatures as specified under Article 3.3.1 of this Section.
- B. Protection:
 - 1. Protection Against Rain: Comply with the requirements for protecting new work against damage from Rain, as specified under Article 3.3.I of this Section.
 - 2. Protection Against Cold Weather: Comply with the requirements for protecting new work against damage from cold weather, as specified under Article 3.3.1 of this Section.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Concrete: Use min. 3,000 psi concrete at 28 days except as modified herein.
- B. Ready-Mixed Concrete: Use ready-mixed concrete which conforms to ASTM C94, Alternate 2.
- C. Water: Use water for mixing and curing concrete reasonably clean and free from oil, salt, acid, alkali, chlorides, sugar, vegetable, or other substances injurious to the finished product. Waters from sources approved by the local Health Department as potable may be used without test. Test water requiring

testing in accordance with the current Method of Test for Quality of Water to be Used in Concrete, AASHTO T-26.

- D. Concrete Curing Compounds: Use white membrane curing compound for curing concrete which conforms to AASHTO M148, Type 1 clear, or Type 2 while per FDOT Section 925.
- E. Premolded Joint Filler: Use fiber joint filler which conforms to ASTM D1751. Use filler of the thickness, as specified herein, or as directed by the engineer.
- F. Steel Hook Bolts: Use hook bolts which conform to ASTM A706, or for Grade 60 of ASTM A615, A616, or A617. Use 5/8-inch diameter hook bolts self tapping.
- G. Joint Sealant: Use hot-poured type joint sealant which conforms to ASTM D1190.

PART 3 EXECUTION

3.01 CONTRACTOR'S VERIFICATION

- A. Excavation and Forming: Prior to the installation of any concrete, examine the excavation and forms for the proper grades, lines, and levels required to receive the new work. Ascertain that all excavation and compacted subgrades are adequate to receive the concrete to be installed.
 - 1. Correct all defects and deficiencies before proceeding with the work.
- B. Existing Improvements: Investigate and verify location of existing improvements to which the new work is to be connected.
 - 1. Making necessary adjustment in line and grade to align the new work with the existing improvements must be approved by architect prior to any change.

3.02 PREPARATION

A. Forms: Use wood or metal forms, straight and free from warp, clean, and sufficient strength to resist springing during the process of depositing concrete against them.
1. Use full depth of the concrete forms.

3.03 INSTALLATIONS

- A. Sidewalks, Sidewalk Ramps, Driveways and Driveway Approaches: Construct all sidewalks and sidewalk ramps four (4) inches thick except at driveways and alleys. Construct thickness of the sidewalks six (6) inches at driveways and alleys. Construct sidewalks five (5) feet wide unless otherwise noted on the Plans or directed by architect, and slope 1/4-inch per foot towards the center of the road. Normally, sidewalks will be located within the right-of-way, parallel the property lines, at a distance of 1-foot from the property line.
 - 1. Construct alleys, driveways and approaches six (6) inches thick. Construct the width of the driveways and driveway approaches as shown on the Plans or as directed by architect.
- B. Removal of Existing Curb for Sidewalk Ramps and Driveway Approaches: Conform construction of sidewalk ramps within street intersections where curbed pavement existing to the current WSDOT Roadway and Traffic Design Standards.
 - 1. Saw cut, to full depth of pavement, and remove a minimum of an 18-inch wide curb and gutter section where there is no proper curb drop for the sidewalk ramp or driveway approach. When mountable curbs are present, remove a 24- inch wide curb and gutter section for the construction of sidewalk ramps, as specified above.
 - 2. Remove curb and gutter as determined by the ENGINEER in the field but remove curb and gutter at least as wide as the proposed sidewalk ramp plus 1- foot on each side.
 - 3. Replace the removed curb and gutter section with materials, equal to what was removed and seal joint with hot poured rubber asphalt.

- C. Install 5/8 inch diameter self tapping hook bolts, in the existing concrete pavement as indicated on the Plans prior to placing concrete for the removed curb and gutter section.
- D. Placement of Forms: Use wood forms, straight and free from warp, of nominal depth for sidewalk sections less than 25 feet in length.
 - 1. Stake forms to line and grade in a manner that will prevent deflection and settlement.
 - 2. When unit slab areas are to be poured, place slab division forms such that the slab division joints will be straight and continuous.
 - 3. Set forms for sidewalk ramps to provide a grade toward the centerline of the right-of-way in accordance with current standards. Use a uniform grade, except as may be necessary to eliminate short grade changes.
 - 4. Oil forms before placing concrete. Leave forms in place at least 12 hours after the concrete is placed. Place forms ahead of the pouring operations to maintain uninterrupted placement of concrete.
 - 5. The use of slip form pavers can be allowed when approved by the ENGINEER in lieu of the construction system described above.
- E. Joints: Construct transverse and longitudinal expansion and plane-of-weakness joints at the locations specified herein, or as indicated on the Plans or as directed by architect.
 - 1. Place the transverse expansion joints for the full width and depth of the new work. Use transverse expansion joints placed against an existing pavement a minimum of six (6) inches deep but no less than the thickness of the concrete being placed.
 - 2. Conform longitudinal expansion joints to the requirements as transverse expansion joints.
 - 3. Construct joints true to line with their faces perpendicular to the surface of the sidewalk. Install the top slightly below the finished surface of the sidewalk. Construct transverse joints at right angles to the centerline of the sidewalk and construct longitudinal joints parallel to the centerline or as directed by architect.
 - 4. Place transverse expansion joints, 1/2-inch thick, through the sidewalk at uniform intervals of not more than 50 feet and elsewhere as shown on the Plans, or as directed by architect.
 - 5. Place expansion joints, 1/2-inch thick, between the sidewalk and back of abutting parallel curb, buildings or other rigid structures, concrete driveways and driveway approaches. When directed by architect, place the expansion joint between sidewalks and buildings 1-foot from the property line and parallel to it.
 - 6. Form plane-of-weakness joints every five (5) feet. Form joints by use of slab divisions forms extending to the full depth of the concrete or by cutting joints in the concrete, after floating, to a depth equal to 1/4 the thickness on the sidewalk. Construct cut joints not less than 1/8-inch or more than 1/4-inch in width and finish smooth and at right angles to the centerline on the sidewalk.
- F. Placing and Finishing Concrete: Place all concrete on a prepared unfrozen, smooth, leveled, rolled and properly compacted base. Place concrete on a moist surface with no visible water present.
 - 1. Deposit the concrete, in a single layer to the depth specified. Spade or vibrate and compact the concrete to fill in all voids along the forms and joints. Strike off the concrete with a strike board until all voids are removed and the surface has the required grade and cross section as indicated on the Plans, or as directed by architect.
 - 2. Float the surface of the concrete just enough to produce a smooth surface free from irregularities. Round all edges and joints with an edger having a 1/4-inch radius.
 - 3. Broom the surface of sidewalks, driveways and approaches to slightly roughen the surface.
 - 4. Texture the surface of the sidewalk ramps with a coarse broom transversely to the ramp slope, and coarser roughen than the remainder of the sidewalk. Contract the ramp slope in color (using a

brick-red dye or approved equal) from the remainder of the sidewalk. Comply with minimum color contract and slope requirements from ADAAG, Local Government Standards, or as directed by architect.

- G. Curing: After finishing operations have been completed and immediately after the free water has left the surface, completely coat and seal the surface of the concrete (and sides if slip-forming is used) with a uniform layer of white membrane curing compound. Do not thin the curing compound. Apply the curing compound at the rate of one gallon per 200 square feet of surface.
- H. Barricades: Place suitable barricades and lights around all newly poured sidewalks, sidewalk ramps, driveways, driveway approaches and curb and gutter sections in order to protect the new work from damage from pedestrians, vehicles and others until the concrete has hardened.
 - 1. Leave barricades in place for a minimum of two (2) days, except for driveway approaches and curb and gutter sections. Leave barricades in place for a minimum of three (3) days.
 - 2. Remove and replace any concrete that suffers surface or structural damage at no additional cost.
- I. Protection:
 - 1. Against Rain: Protect new concrete from the effects of rain before the concrete has sufficiently hardened. Have available on the job site at all times enough burlap or 6-mil thick polyurethane film to cover and protect one day's work. Stop work and cover completed work when rain appears eminent. As soon as the rain ceases, uncover the concrete and burlap drag the surface where necessary. Apply curing compound to any areas where the compound has been disturbed or washed away.
 - Against Cold Weather: If concrete is placed between December 15 and February 15, have available on the site sufficient amount of clean, dry straw or hay to cover one (1) day's production. If the temperature reaches 40 degrees F and is falling, place the hay or straw 12 inches thick, immediately after the curing compound is applied.
 - 3. Concrete Temperature Limitations: Do not place concrete when the temperature of the concrete at the point of placement is above 90 degrees F.
- J. Cleanup: After the concrete has gained sufficient strength, but no sooner than within 12 hours, remove the fixed forms and backfill the spaces on both sides with sound earth of topsoil quality. Compact, level and leave backfill in a neat condition.
- K. Gutters and Curbs: Construct gutters and curbs in accordance with WSDOT Standard Specifications for Road and Bridge Construction, latest edition, including supplements.

3.04 FIELD QUALITY CONTROL

- A. Concrete Delivery Ticket: Use a ticket system for recording the transportation of concrete from the batching plant to point of delivery. Issue this ticket to the truck operator at the point of loading and give to architect upon delivery.
- B. Concrete Delivery Rejection: Remove concrete not permitted for inclusion in the work by architect from the site. Rejection of concrete will be determined through Field Quality Control and elapsed time from mixer charging to delivery.
- C. Concrete Testing at Placement: Perform tests of each batch of concrete delivered, each 50 cubic yards, or whenever consistency appears to vary. The sampling and testing of slump, air content and strength will be performed at no cost to the library.
 - 1. Sampling: Secure composite samples in accordance with the Method of Sampling Fresh Concrete, ASTM C172.
 - 2. Slump Test: Test in accordance with ASTM C143. Use the least slump possible consistent with workability for proper placing of the various classifications of concrete.

- a. Place structural concrete for walls and slabs, by means of vibratory equipment, with a slump of four (4) inches.
- A tolerance of up to 1-inch above the indicated maximum will be allowed for individual batches provided the average for all batches or the most recent ten (10) batches tested, whichever is fewer, does not exceed the maximum limit.
- 3. Air Content: Determine air content of normal weight concrete in accordance with Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method, ASTM C23 1, or by the volumetric method, ASTM C 173, for each strength test.
- 4. Compressive Strength: Make two (2) strength tests of three (3) samples each for each 50 cubic yards, or fraction thereof, of each mix design of concrete placed in any one (1) day.
 - a. Handling Samples: Mold and cure three (3) specimens from each sample in accordance with Method of Making and Curing Concrete Test Specimens in the Field, ASTM C31. Record any deviations from the requirements of this Standard in the test report.
 - b. Testing: Test specimens in accordance with Method of Test for Compressive Strength of Cylindrical Concrete Specimens, ASTM C39. Test one (1) specimen at seven (7) days for information and test two (2) at 28 days for acceptance. Use the average of the strengths of the two (2) specimens tested at 28 days. Discard results if one (1) specimen in a test manifests evidence of improper sampling, molding or testing, and use the strength of the remaining cylinder. Should both specimens in test shown any of the above defects, discard the entire test.
 - c. Acceptance of Concrete: The strength level of the concrete will be considered satisfactory so long as the averages of all sets of three consecutive strength test results equal or exceed the specified 28-day strength and no individual strength test results falls below the specified 28-day strength by more than 500 psi. If the strength test is not acceptable, perform further testing to qualify the concrete.
 - d. Concrete Temperature: Determine the temperature of concrete sample for each strength test.
- D. Reductions due to deficiencies in thickness or compressive strength are additive, that is, if an area is deficient by 3/8 inch and under strength by 200 psi, the total reduction is 20% plus 02% or 40% reduction.

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sheathing:
 - 1. Wood-based
- B. Roofing nailers.
- C. Preservative treated wood materials.
- D. Fire retardant treated wood materials.
- E. Communications and electrical room mounting boards.
- F. Concealed wood blocking, nailers, and supports.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 91 23 Interior Painting: painting of exposed mounting boards.

1.03 REFERENCE STANDARDS

- A. ASTM D2898 Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. AWPA U1 Use Category System: User Specification for Treated Wood.
- D. PS 1 Structural Plywood.
- E. PS 2 Performance Standard for Wood-Based Structural-Use Panels.
- F. PS 20 American Softwood Lumber Standard.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on panel products.
- C. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.

- 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- 3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Engineered wood products containing added urea-formaldehyde are not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 1 or Construction Grade.
 - 2. Boards: Standard or No. 3.

2.03 STRUCTURAL COMPOSITE LUMBER

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.
- B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.
 - 1. Beams: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber with manufacturer's published modulus of elasticity, E: 1,800,000 psi, minimum.
 - 2. Headers Not Longer Than 48 inches: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber.

2.04 CONSTRUCTION PANELS

- A. Wall Sheathing: Any PS 2 type.
 - 1. Bond Classification: Exterior.
 - 2. Grade: Structural I Sheathing.
 - 3. Span Rating: 24.
 - 4. Performance Category: 5/8 PERF CAT.
 - 5. Edge Profile: Square edge.
- B. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- C. Concealed Backing for wall-mounted items- provide backing as required for loading from one of the following:
 - 1. Dimension Lumber: as noted above
 - 2. Plywood: as noted below
- D. Other Applications:
 - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 - 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 - 3. Other Locations: PS 1, C-D Plugged or better.

2.05 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Stainless steel for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

- 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
- 3. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
- B. Air Barrier: See Section 07 27 00.

2.06 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 - 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSCaccredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Fire Retardant Treatment:
 - 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Do not use treated wood in direct contact with the ground.
 - 2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated .
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Treatment:
 - 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber less than 18 inches above grade.
 - d. Treat lumber in other locations as indicated.
 - 2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood less than 18 inches above grade.
 - c. Treat plywood in other locations as indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Chalkboards, tack boards and marker boards.
 - 8. Wall paneling and trim.
 - 9. Joints of rigid wall coverings that occur between studs.
 - 10. Wall-protection items, including corner guards.
 - 11. Owner-provided wall-mounted equipment, whether owner-installed or contractor-installed.

3.04 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using screws.
- B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.

4. Size and Location: As indicated on drawings.

3.06 TOLERANCES

A. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.07 CLEANING

- A. Waste Disposal:
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.
SECTION 06 20 00

FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Finish carpentry items, including:
 - 3. Wood door frames
 - 4. Wood trim (WD-2).
 - 3 Wood Veneer (PLY-1, PLY-2)
- B. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 10 00 Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 06 41 00 Architectural Wood Casework: supplying components for shop fabricated custom cabinet work.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.
- B. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards, U.S. Version 3.0.
- C. BHMA A156.9 American National Standard for Cabinet Hardware.
- D. NHLA G-101 Rules for the Measurement & Inspection of Hardwood & Cypress.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with electrical rough-in and installation of associated and adjacent components.
- B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide data for premanufactured items and accessories.
 - 2. Provide data on fire retardant treatment materials and application instructions.
 - 3. Provide data for attachment hardware and finish hardware.
- C. Selection Samples: Submit color charts for selection of color and texture of slat wall finishes.
- D. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- E. Samples: Submit two samples of finish wood and resin panels, 12 by 12 inch in size illustrating specified finish.
- F. Samples: Submit two samples of wood trim 8 inch long.

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
 - 1. Company that follows AWI's "Architectural Woodwork Quality Standards".

2. Single Source Responsibility: Provide and install this work and that of Section 064100 from single fabricator.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver factory-fabricated units to project site in original packages, containers or bundles bearing brand name and identification.
- B. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.
- C. Protect from moisture damage.
- D. Handle materials and products to prevent damage to edges, ends, or surfaces.

1.08 FIELD CONDITIONS

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, utilities, and other related work to ensure that finish carpentry items can be supported and installed as indicated.
- B. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.
- C. During and after installation of finish carpentry, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.
- D. Do not deliver product until the building is secure and weathertight.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.
- C. Interior Woodwork Items:
 - 1. Wood veneer casework:
 - a. **PLY-1**: ³/₄ inch Hardwood plywood with Baltic Birch veneer, A Grade, prepare for transparent finish.
 - b. **PLY-2**: ³/₄ inch Hardwood plywood for cabinet box construction, prepare for transparent finish. Provide A grade plywood where exposed to view.

2.02 WOOD-BASED COMPONENTS

A. Provide sustainably harvested wood, certified or labeled as specified in Section 01 60 00 - Product Requirements.

2.03 LUMBER MATERIALS

- B. Hardwood Lumber: Maple, plain sawn, maximum moisture content of 8 percent, of quality suitable for painted finish.
 - 1. Profiles/Sizes: as indicated in Drawings.
 - 2. Finish: Painted to match adjacent wall color.

2.04 FASTENINGS

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Fasteners: Of size and type to suit application; any finish in concealed locations and satin stainless steel finish in exposed locations.

2.07 ACCESSORIES

- A. Lumber for Shimming: Softwood lumber of pine species.
- B. Wood Filler: Solvent base, tinted to match surface finish color.

2.08 HARDWARE

A. Hardware: Comply with BHMA A156.9.

2.09 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.10 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 Finishing for grade specified and as follows:
 - 1. Transparent:
 - a. System 11, Polyurethane, Catalyzed.
 - b. Stain: as indicated in Drawings
 - c. Sheen: Satin.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.
- C. See Section 06 10 00 Rough Carpentry for installation of recessed wood blocking.

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Do not begin installation until wood materials have been fully acclimated to interior conditions.
- C. Set and secure materials and components in place, plumb and level.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.03 PREPARATION FOR SITE FINISHING

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Site Finishing: See Section 09 91 23.
- C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.04 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

SECTION 06 41 00

ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units, including:
 - 1. Base cabinets and upper cabinets.
 - 2. Children's Reading Nook
- B. Cabinet hardware and accessories, including:
 - 1. Drawer and Door Pulls (MA-3, MA-5)
 - 2. Cabinet Hinges (MA-1)
 - 3. Magnetic Latches (MA-2)
 - 4. Trash, Recycling and Compost Bins (MA-4)
- C. Wood Trim Board (WD-2).
- D. Wood Veneer Casework (PLY-1, PLY-2), Refer to Section 06 20 00 Finish Carpentry.
- D. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 10 00 Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 06 20 00 Finish Carpentry: Wood veneer, base, door frames and wood trim.
- D. Section 07 92 00 Joint Sealers: sealant at millwork and countertops at walls
- E. Section 12 36 00 Countertops: countertops, support brackets, and grommets.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.
- B. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards, U.S. Version 3.0.
- C. HPVA HP-1 American National Standard for Hardwood and Decorative Plywood.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Shop Drawings: Provide casework locations, large scale plans, elevations, cross sections, rough-in and anchor placement dimensions and tolerances, clearances required. Indicate materials, component profiles, configurations, assembly methods, fastening methods, jointing details, utility and service requirements and locations, accessory listings, hardware location and schedule of finishes.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Product Data: Provide data for hardware accessories.
- D. Finish Verification Samples:
 - 1. For each finish product specified, two each, 3 inches x 5 inches, of colors and finishes selected by architect.
- E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

1.05 DESIGN REQUIREMENTS

A. Reinforce frame and support counters in all areas, to safely support a load of 200 lbs (90 kg) concentrated on one square foot (0.093 sq m) in any area with no indentation showing on surface and with permanent set not exceeding 0.005 inch (0.127 mm).

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
 - 1. Single Source Responsibility: Provide and install this work from single fabricator.
- B. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, quality as indicated for specific items.
- C. Single Source Responsibility: Provide and install this work and that of Section 062000 from single fabricator.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Accept casework on site. Inspect on arrival for damage.
- B. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.
- C. Protect units from moisture, soiling, or damage during handling and installation.
- D. Handle materials and products to prevent damage to edges, ends, or surfaces.
- E. Protect work surfaces throughout the construction period with corrugated cardboard covering the top and securely taped to edges.

1.08 FIELD CONDITIONS

- A. Coordinate casework installation with size, location and installation of service utilities.
- B. Coordinate layout and installation of blocking and reinforcement in walls for support of casework.
- C. Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete. Coordinate fabrication schedule with construction progress to avoid delaying the work.
- D. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- E. Do not deliver product until the following conditions are met:
 - 1. Windows and doors are installed and the building is secure and weathertight.
 - 2. Ceiling, overhead ductwork and lights are installed.
 - 3. All painting is completed and floor tile is installed.
- F. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

1.09 SCOPE OF THE CASEWORK SUPPLIER/INSTALLER:

- A. Casework and accessories: Furnish to building, and unpack and/or uncrate, set in place, level and fasten all specified casework and equipment.
- B. Clean up: Remove debris, dirt, and rubbish accumulated as a result of delivery of this equipment and leave premises broom clean and orderly.
- C. ADA-Americans With Disabilities Act Requirements: The following special requirements shall be met, where specifically indicated on architectural plans as "ADA," at public spaces or by General Note. To be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations:

- 1. Countertop height: with or without cabinet below, not to exceed a height of 34 inches A.F.F., (Above Finished Floor), at a surface depth of 24 inches.
- 2. Knee space clearance: to be a minimum 27 inches A.F.F., and 30 inches clear span width. ¾" inch deep shelving, adjustable of fixed: not to exceed a range from 9 inches A.F.F. to 54 inches A.F.F.
- 3. Sink cabinet clearances: in addition to above, upper knee space frontal depth to be no less than 8 inches, and lower toe frontal depth to be no less than 11 inches, at a point 9 inches A.F.F.
- D. Fillers, scribes, access holes: Provide all necessary fillers and scribes for a complete job. Provide all access holes in cabinets and countertops required by mechanical, electrical, and HVAC contractors.

1.10 SCOPE NOT COVERED BY CASEWORK SUPPLIER/INSTALLER:

- A. Service to and within equipment: Furnishing piping system, traps, drain lines, and conduit within equipment, in service turrets or tunnels, through, under or along backs of working surfaces and in reagent racks above countertops.
- B. Setting of plumbing fixtures and accessory fixtures, and final connections of such.
- C. Plumbing services: Furnishing, installation and connection of traps, drain lines, drop-in sinks, vents, steam fittings and special plumbing fixtures or piping to meet local codes, whether or not specifically called for in the contract documents.
- D. Electrical services: Furnishing and installation of rigid and flexible conduit, fittings, and special electrical equipment and accessories, wire, pulling of wire, and wiring and connection to electrical boxes, receptacles, switches, lights, and flush plates. Work shall be in accordance with local codes, whether or not specifically called for in the contract documents.
- E. Bracing and supports: Furnishing and installation of all framing and reinforcements of wall, floors and ceilings necessary to adequately support the equipment, and all bucks and plaster grounds required for proper installation of equipment. Casework supplier/installer to direct others as to the type of bracing required and the location needed.
- F. Base molding applied to casework, furnished and installed by flooring contractor.

PART 2 PRODUCTS

2.01 CABINETS

- A. Quality Standard: Grades as indicated, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Wood Veneer Faced Cabinets: Premium Grade
 - 1. Exposed Surfaces: HPVA HP-1 Grade A, Alder, plain sliced, book-matched.
 - 2. Semi-Exposed Surfaces: HPVA HP-1 Grade A, species as selected by Architect to match or compliment exposed surfaces, plain sliced, random-matched.
 - 3. Concealed Surfaces: Manufacturer's option.
- C. Cabinet Construction:
 - 1. Door and Drawer Front Edge Profiles: Square edge with thin applied band, matching face.
 - 2. Door and Drawer Front Retention Profiles: Fixed panel.
 - 3. Casework Construction Type: Type A Frameless.
 - 4. Interface Style for Cabinet and Door: Style 1 Overlay
 - 5. Grained Face Layout for Wood Veneer Cabinet and Door Fronts: Flush panel.
 - a. Premium Grade:
 - 1) Provide vertical run and match for doors, drawer fronts and false fronts within each cabinet unit.
 - 2) Provide well-matched doors, drawer fronts and false fronts across multiple cabinet faces in one elevation.

- 3) Cathedral Grain: Point grain crown up and run in the same direction for entire project.
- 6. Adjustable Shelf Loading: 40 psf.
 - a. Deflection: L/144.
- 7. Cabinet Style: Flush overlay.
- 8. Cabinet Doors and Drawer Fronts: Flush style.
- 9. Drawer Side Construction: Lock-jointed and nailed.
- 10. Drawer Construction Technique: Lock shoulder joints.

2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.
- B. Provide sustainably harvested wood, certified or labeled; see Section 01 60 00.

2.03 LUMBER MATERIALS

- A. Softwood Lumber: NIST PS 20; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade II/Custom; average moisture content of 5-10 percent; species as follows:
 - 1. Concealed Surfaces: Species contractors choice.
- B. Hardwood Lumber: NHLA; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade II/Custom; average moisture content of 5-10 percent; species as follows:
 - 1. Concealed Surfaces: Species contractors choice.

2.04 PANEL MATERIALS

- A. Veneer Faced Panel Products (Hardwood Plywood): HPVA HP-1
- B. Softwood Plywood, Not Exposed to View: Any face species, veneer core; PS 1 Grade A-B, glue type as recommended for application.

2.05 COUNTERTOPS

A. Countertops: See Section 12 36 00.

2.06 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.
- E. Grommets: see Section 12 36 00 Countertops
- F. Countertop Support Brackets: see Section 12 36 00 Countertops

2.07 HARDWARE

- A. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self rests, polished chrome or satin chrome finish, for nominal 1 inch spacing adjustments.
 - 1. Product: 346ANO manufactured by Knape and Vogt.
- B. Drawer and Door Pulls (MA-5): 6" Tap Drawer Pull, satin stainless steel.
 - 1. Product: Mockett DP3C
- C. Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, satin stainless steel.
 - 1. Deadbolt cylinders compatible with keying system.
 - 2. Key removable in the locked and unlocked position.
 - 3. Locations: as noted on millwork drawings

- D. Drawer Slides:
 - 1. Type: Full extension with overtravel.
 - 2. Static Load Capacity: Extra Heavy Duty grade.
 - 3. Mounting: Side mounted.
 - 4. Stops: Integral type.
 - 5. Features: Provide self closing/stay closed type.
 - 6. Manufacturers:
 - a. Accuride International, Inc: www.accuride.com.
 - b. Grass America Inc: www.grassusa.com.
 - c. Knape & Vogt Manufacturing Company: www.knapeandvogt.com.
 - d. Substitutions: See Section 01 60 00 Product Requirements.
- E. Hinges: European style concealed self-closing type, stainless steel with satin finish.
 - 1. Manufacturers:
 - a. Grass America Inc: www.grassusa.com.
 - b. Hafele; www.hafele.com
 - c. Hardware Resources: www.hardwareresources.com.
 - d. Julius Blum, Inc: www.blum.com.
 - e. Substitutions: See Section 01 60 00 Product Requirements.
- F. Door Swing Restrictor: for use in preventing casework doors from opening and striking adjacent walls
 - 1. Surface-mounted chain or cable for butt hinge cabinets.
 - 2. Concealed method for European hinges (Contractor to coordinate with hinge manufacturer):
 - a. Dura Supreme Cabinetry: Hinge Restriction Clip
 - b. Grass TEC 864 85 Degree Hinge Angle Reduction Clip
 - c. Rockler: Blum Restrictor Clip
 - d. Approved equal
- G. Wall Cleats: French cleats for stud wall partitions, with lower cleat fastened to wall and upper cleat fastened to millwork.
- G. Countertop Support Bracket: see Section 123600
- I. Trash, Recycling and Compost Bins (MA-4): 50 Quart Double Pull Out Waste Bins with Soft-Close Feature
 - 1. Bin Size: Double 35 Quart
 - 2. Frame Material: Steel
 - 3. Bin Material: Plastic, white
 - 4. Product: REV-A-SHELF, 5149-18DM-211

2.08 FABRICATION

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
 - 1. Run grain vertically at all panels.
 - 2. Provide center matched panels at each elevation.

- 3. Provide sequence matching across each elevation.
- 4. Carry figure of cabinet fronts to toe kicks.
- E. Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes, and fixtures and fittings. Verify locations of cutouts from on-site dimensions. Fully finish exposed cut edges.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- F. Secure cabinets and counter bases to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.
- H. Seal joint between back/end splashes and vertical surfaces.
- I. Provide matching casework filler panel to occupy remaining space between casework and adjacent walls as necessary to accommodate for field dimensions.

3.03 INSTALLATION ITEMS BY TRADE CONTRACTOR

- A. Install plumbing and electrical service to and within equipment.
- B. Set plumbing fixtures and accessory fixtures, and make final connections of such.
- C. Complete wiring and connection to electrical boxes, receptacles, switches, lights, and flush plates. Work shall be in accordance with local codes, whether or not specifically called for in the contract documents.
- D. Close ends of units, splash aprons, shelves and bases with sealant.

3.04 ADJUSTING

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

3.05 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.
- B. Clean all materials provided under this section and all adjacent materials, which may have become soiled from this work.
 - 1. High Pressure Laminates (HPL): refer to NEMA publication Ld3-2005 Annex B Care and Cleaning of Laminates.
- C. Wipe out millwork interiors and empty drawers of dirt and debris. Remove pencil marks and other blemishes from millwork surfaces.

- D. Remove foreign matter that could affect operation or appearance of hardware.
- E. Make final adjustments to drawers and doors. Doors shall swing freely. All doors shall be aligned both vertically and horizontally. Drawers shall open and close smoothly, without binding or excessive slide and play.

3.06 PROTECTION OF FINISHED WORK

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Cover with protective cover, taped to casework.
- C. Remove temporary protective cover at date of Substantial Completion.

SECTION 07 21 00

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass Fiber Batt insulation (INSUL-1) in ceiling.
- B. Foamed-in-Place insulation (INSUL-2) for:
 - 1. Filling exterior wall crevices.
 - 2. Filling perimeter window and door shim spaces.
 - 3. At junctions of dissimilar wall and roof materials.

1.02 RELATED REQUIREMENTS

- A. Section 08 43 13 Aluminum Framed Storefronts: Spray foam Insulation (INSUL-2)
- B. Section 09 21 16 Gypsum Board Assemblies: Acoustic insulation (INSUL-1) inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ASTM E136 Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C.
- D. ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- E. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.05 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 before installation time.
 - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

1.06 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation Inside Wood Stud Cavity Walls: Batt insulation (INSUL-1).
- B. Insulation for filling joints, crevices, and shim spaces: spray foam (INSUL-2).

2.02 BATT INSULATION MATERIALS

- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
 - 4. Formaldehyde Content: Zero.
 - 5. Thermal Resistance: R-value of 3.17 per inch.
 - 6. Facing: Unfaced.
 - 7. Products:
 - a. CertainTeed Corporation: www.certainteed.com/#sle.
 - b. Guardian Building Products, Inc.
 - c. Johns Manville: www.jm.com/#sle.
 - d. Knauf Insulation.
 - e. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: www.ocbuildingspec.com/#sle.
 - f. Substitutions: See Section 01 60 00 Product Requirements.

2.03 FOAMED-IN-PLACE INSULATION

- A. Shim Space Insulation: Polyurethane type, single component spray foam system, reduced expansion spray foam system; semi-rigid; closed cell.
 - 1. Application: Fill shim spaces in window, curtain wall and entrance framing, for sealing seams in board insulation within the joint, and joints greater than 1/8" between furring and insulation.
 - 2. Thermal Value (R), Minimum: 4.50 per inch, when tested in accordance with ASTM C 518.
 - 3. Density: 1.3 lb/cu ft, when tested in accordance with ASTM D 1622.
 - 4. Flame Spread: 20, when tested in accordance with UL 1715 Fire Test.
 - 5. Smoke Development: 25, when tested in accordance with UL 1715 Fire Test.
 - 6. Product:
 - a. Convenience Products: "Touch 'n Seal No-Warp Foam".
 - b. Hilti: "CF 812 Window and Door Pro Low-Pressure Filler Foam".
 - c. Approved equivalent.

2.04 ACCESSORIES

- A. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
 - 1. Application: Sealing of interior circular penetrations, such as pipes or cables and repairing existing vapor barrier.
 - 2. Width: Are required for application.
 - 3. Temperature Resistance: Range of minus 40 to 212 degrees F.
- B. Adhesive: Type recommended by insulation manufacturer for application.
 - 1. Must show compatibility with adjacent products.
- C. Vapor Barrier: Polyethylene Plastic Vapor Barrier, 6mil.
 - 1. Application: Placed interior side of batt insulation, Tape seam with Polyethylene tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.

- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.
- C. Verify substrate materials are compatible with insulation & adhesives.

3.06 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in ceiling cavity spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. Provide vapor barrier on the interior side of the batt insulation.

3.07 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 08 71 00 Door Hardware: Setting door thresholds in sealant.
- B. Section 08 80 00 Glazing: Glazing sealants and accessories.
- C. Section 09 21 16 Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.
- D. Section 09 30 00 Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.

1.03 REFERENCE STANDARDS

- A. ASTM C661 Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
- B. ASTM C834 Standard Specification for Latex Sealants.
- C. ASTM C919 Standard Practice for Use of Sealants in Acoustical Applications.
- D. ASTM C920 Standard Specification for Elastomeric Joint Sealants.
- E. ASTM C1193 Standard Guide for Use of Joint Sealants.
- F. ASTM C1248 Standard Test Method for Staining of Porous Substrate by Joint Sealants.
- G. ASTM C1311 Standard Specification for Solvent Release Sealants.
- H. ASTM D2240 Standard Test Method for Rubber Property--Durometer Hardness.
- I. SCAQMD 1168 South Coast Air Quality Management District Rule No.1168.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of experience.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.1. For silicone sealants within 20 years.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Adhesives Technology Corporation: www.atcepoxy.com.
 - 2. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 3. Bostik Inc: www.bostik-us.com.
 - 4. Chem Link, Inc: www.chemlinkinc.com.
 - 5. Dow Corning Corporation: www.dowcorning.com/construction/sle.
 - 6. Fortifiber Building Systems Group: www.fortifiber.com/sle.
 - 7. Hilti, Inc: www.us.hilti.com/#sle.
 - 8. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com/sle.
 - 9. Pecora Corporation: www.pecora.com/?sle.
 - 10. Tremco Global Sealants: www.tremcosealants.com.
 - 11. Sherwin-Williams Company: www.sherwin-williams.com.
 - 12. Sika Corporation: www.usa-sika.com.
 - 13. W.R. Meadows, Inc: www.wrmeadows.com/sle.
 - 14. Substitutions: See Section 01 60 00 Product Requirements.
- B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
 - 1. Adhesives Technology Corporation: www.atcepoxy.com.
 - 2. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 3. Bostik Inc: www.bostik-us.com.
 - 4. Dayton Superior Corporation: www.daytonsuperior.com.
 - 5. Dow Corning Corporation: www.dowcorning.com/construction/sle.
 - 6. Pecora Corporation: www.pecora.com/?sle.
 - 7. The QUIKRETE Companies: www.quikrete.com.
 - 8. Tremco Global Sealants: www.tremcosealants.com.
 - 9. Sherwin-Williams Company: www.sherwin-williams.com.
 - 10. Sika Corporation: www.usa-sika.com.
 - 11. W.R. Meadows, Inc: www.wrmeadows.com/sle.
 - 12. Substitutions: See Section 01 60 00 Product Requirements.

2.02 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

2.03 NONSAG JOINT SEALANTS

- A. Type General Purpose Exterior Sealant (**JS-1**) Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M, G, O and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
 - 2. Non-Staining to Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
 - 5. Color: To be selected by Architect from manufacturer's standard range.
 - 6. Cure Type: Single-component, neutral moisture curing.
 - 7. Applications:
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different exposed materials.
- B. Type Sanitary Sealant Mildew-Resistant Silicone Sealant (Kitchen, Restroom): ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1. Color: Clear
 - 2. BASIS OF DESIGN:
 - a. BASF Building Systems; Omniplus.
 - b. Dow Corning Corporation; 786 Mildew Resistant.
 - c. GE Advanced Materials Silicones; Sanitary SCS1700.
 - d. Pecora Corporation: www.pecora.com.
 - e. Sika Corporation; Sikasil GP: www.usa.sika.com/#sle.
 - f. Tremco Incorporated; Tremsil 200 Sanitary.
 - 3. Applications:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bath countertops and wall surfaces.
- C. Type Acoustical Sealant Acrylic-Urethane Sealant: Water-based; ASTM C920, Grade NS, Uses M and A; single component; paintable; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 12-1/2 percent, minimum.
 - 2. Hardness Range: 15 to 40, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: White.
 - 4. Applications:
 - a. In sound-rated wall assemblies, and where not indicated as fire-rated:
 - 1) gaps between top stud runner and structure, between bottom stud track and floor, between gypsum wall board and floor, and between gypsum wall board and structure.
 - 2) gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
- D. Type General Purpose Interior Sealant (**JS-2**)- Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Grade: ASTM C834; Grade NF.
 - 3. Applications:

- a. Interior wall and ceiling control joints in non-wet areas.
- b. Joints between door, window, and other frames and adjacent construction.
- c. Other interior joints for which no other type of sealant is indicated.

2.04 SELF-LEVELING SEALANTS

- A. Type Sealing horizontal expansion joint in concrete sidewalk (unpolished) Single component Self-Leveling Polyurethane Joint Filler: intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
 - 1. Composition: Single or multi-component, 100 percent solids by weight.
 - 2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
 - 3. Color: Gray
 - 4. Joint Width, Minimum: 1/8 inch.
 - 5. Joint Width, Maximum: 1 inch.
 - 6. Joint Depth: Provide product suitable for joints from 1/8 inch to 2 inches in depth including space for backer rod.
 - 7. Manufacturers:
 - a. Sikaflex Self-leveling sealant
 - b. Akonaflex Pro Self-leveling Expansion joint filler
 - c. Qickrete Polyurethane Self-Leveling Sealant

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - L. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrates and joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - 1. Width/depth ratio of 2:1.
 - 2. Neck dimension no greater than 1/3 of the joint width.
 - 3. Surface bond area on each side not less than 75 percent of joint width.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Do not seal the following types of joints.
 - 1. Intentional weepholes in masonry.
 - 2. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - 3. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - 4. Joints where installation of sealant is specified in another section.
 - 5. Through-penetrations in sound-rated assemblies that are also fire-rated assemblies.
- I. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- J. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

A. Protect sealants until cured.

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; fire rated and non-rated.

1.02 RELATED REQUIREMENTS

- A. Section 06 20 00 Finish Carpentry: Wood door frames.
- B. Section 08 71 00 Door Hardware.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.
- B. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards, U.S. Version 3.0.
- C. NFPA 80 Standard for Fire Doors and Other Opening Protectives.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing or hardware and other details.
- D. Specimen warranty.
- E. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified in this section and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 PROJECT CONDITIONS

A. Coordinate the work with door opening construction, door frame and door hardware installation.

1.08 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Algoma Hardwoods: www.algomahardwoods.com
 - 2. Eggers Industries: www.eggersindustries.com.
 - 3. Graham Wood Doors: www.grahamdoors.com.
 - 4. Haley Brothers: www.haleybros.com.
 - 5. Marshfield Door Systems, Inc: www.marshfielddoors.com.
 - 6. Oregon Door: www.oregondoor.com/#sle.
 - 7. VT Industries, Inc: www.vtindustries.com/#sle.
 - 8. Substitutions: See Section 01 60 00 Product Requirements.

2.02 DOORS

- A. Doors: See drawings for locations and additional requirements.
 - 1. Quality Standard: Premium Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
 - 3. No added urea-formaldehyde.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Wood veneer facing with factory transparent finish to match Architect's sample.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 DOOR FACINGS

- A. Veneer Facing for painted Finish: Face to be Sound Grade or better per W.D.M.A. I.S.1A
 - 1. Medium Density Overlay (MDO) or Close Grain Hardwood, mill option
 - 2. Vertical Edges: Mill option species of W.D.M.A I.S.1A minimum thickness.
- B. Facing Adhesive: Type I waterproof.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
 - 2. Provide solid blocking for other through-bolted hardware.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 Finishing for grade specified and as follows:
- B. Factory finish on both faces and vertical edges in accordance with color sample to be provided.
- C. Seal door top and bottom edge with color sealer to match door facing.

2.07 ACCESSORIES

- A. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.
- B. Door Hardware: See Section 08 71 00.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
 1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

SECTION 08 34 00

SINGLE PANEL HYDRAULIC DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Furnish Hydraulic Single-Swing System complete from one manufacturer. Provide all labor, materials, tools, and equipment to furnish the Hydraulic Single-Swing System complete as herein specified.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 Rough Carpentry. Door opening jamb and head members.
- B. Section 07 21 00 Thermal Insulation.
- C. Section 08 80 00 Glazing
- D. Section 09 91 13 Exterior Painting. Field painting.
- E. Section 09 91 23 Interior Painting. Field painting.

1.03 REFERENCE STANDARDS

- A. ASTM International (ASTM):
 - 1. ASTM A36 Standard Specification for Carbon Structural Steel.
 - 2. ASTM A500 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 Minimum Design Loads for Buildings and Other Structures.
- C. American Welding Society (AWS).
- D. Hydraulics Institute (HI).
- E. International Building Code (IBC).
- F. National Electric Code (NEC).

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics.
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
- D. Delegated-Design: For systems indicated by a Registered Professional Engineer, Certified and Licensed in the state or municipality the project is located.
 - 1. Details of fabrication of components.
 - 2. Signed and sealed design calculations for systems indicated used to determine load carrying capacities.
 - 3. Analysis Data: Signed and sealed.

4. Sizing Methods and Calculations: Signed and sealed.

1.05 QUALITY ASSURANCE

- A. Provide each Hydraulic Single-Swing System as a complete unit by one manufacturer, including frames, panels, brackets, guides, hardware, operators, and installation accessories to suit opening.
- B. Wind Loading: Design and reinforce Hydraulic Single-Swing system to withstand a wind loading pressure to comply with state and federal code requirements.
- C. Preparation of the opening shall conform to current criteria set forth by the International and Standard Building Code.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Proper storage of the system before installation and continued protection during and after installation will be the responsibility of the general contractor.

1.07 WARRANTY

A. Manufacturer's standard limited warranty including seven (7) year warranty on materials and workmanship of the door structure and three (3) year warranty on electrical and hydraulic components.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers.
 - 1. Subject to compliance with requirements, manufacturers offering products which may be incorporated into the work, include, but are not limited to, the following:
 - 2. Basis of Design: Crown Door LLC. Hydraulic Single Swing System
- B. Upon compliance with all the criteria specified in this section, manufacturers wishing to bid products similar to the product specified must submit to the architect 10 days prior to bidding complete data in support of compliance. The submitting manufacturer guarantees the proposed substituted product complies with the product specified and as detailed on the drawings
 - 1. Substitutions: See Section 01 60 00 Product Requirements.

2.02 MATERIALS

- A. Product to be Hydraulic Single-Swing System.
 - 1. Construct operable panel and frame sections with structural steel (of ASTM-A500 grade minimum) framing to comply with applied wind code:
 - 2. Operable panel and frame shall be constructed of structural steel tubing, and other structural steel shapes, and shall be designed to the same loading requirements for live, dead and wind loads as the surrounding construction.
 - 3. System shall be designed so that no center "cane bolt" is required in the floor.
 - 4. Operable panel and frame shall be factory-welded at all joints and connections, with smooth welds not to exceed 1/4" [6] thickness.
 - 5. Inside-Sash (infill) glass retainer system shall be factory pre-installed and seam-sealed, and necessary setting blocks, spacers, butyl and foam tape shall be supplied.
 - 6. System frame, operable panel, and factory pre-installed, inside-sash glass retainer shall be primed with gray-zinc, powder-based, epoxy primer, and finished with manufacturer's standard powder coat.
 - 7. Factory-Supplied neoprene seals/weather stripping will be shipped loose for field-install to protect against damage during transport.

- B. Single-Swing System shall be operated by hydraulic cylinders that are mechanically fastened to the panel frames.
 - 1. Cylinders will be designed to carry the required loads during operation, open position, and closed position. Internal stops will be installed so as not to allow over-extension of the cylinders, therefore restricting the system from opening or closing beyond its limit.
 - 2. Lift straps or cables, horizontal top and bottom drive shafts, pulleys and strap or cable "kick outs" are unacceptable.
 - 3. System shall be locked closed by means of the hydraulic cylinders providing a minimum of 1000 lbs. of closing force.
- C. Power Operator Standard voltage is 220-240v, single phase.
 - 1. Constant contact push-button or key-switch controls for separate mounting.
 - 2. Power unit to power (2) hydraulic cylinders which open and close the system. Power unit to be prewired and factory tested.
 - 3. "Open-Close" control units will be wired for constant-hold operation.
 - 4. Incoming electrical source to hydraulic power unit to be supplied by others (manufacturer's standard)
 - 5. Each door operator shall have thermal overload protection for the motor.
- D. Glazing.
 - 1. Provide insulating glass for exterior applications (GL-1)
- E. Finishes.
 - 1. Entire system frame, operable panel, and factory pre-installed, inside-sash glass retainer shall be primed with gray-zinc, powder-based, epoxy primer, and finished with manufacturer's standard powder-coat.
- F. Accessories
 - 1. Provide photoelectric or lead-edge pressure sensor that stops (or stops and reverses) the downward movement of the door/window.

2.03 OPERATION

A. Hydraulic Single-Swing System shall be extended/retracted in the opening using a constant-contact key switch, operating hydraulic cylinders mounted to the adjacent wall

PART 3 EXECUTION

3.01 SAFETY

- A. Hydraulic power unit to have a manual emergency let-down valve for closing the system in case of a power outage.
- B. Hydraulic Single-Swing System to incorporate pressure compensated orifice valves.
- C. Photoelectric or lead-edge pressure sensor optional.

3.02 INSTALLATION

- A. Installation of the Hydraulic Single-Swing System shall be by a contractor familiar with this type of installation and be in strict accordance with the approved build drawings and manufacturers standard printed specifications, instructions, and recommendations. All moving parts will be left in good operating condition.
- B. Permanent or temporary electric wiring shall be brought to the power unit location before installation. After the Hydraulic Single-Swing System is installed, the general contractor assumes the responsibility of any damage to the system or system components during construction until the building is turned over to the owner.

C. Fill reservoir with hydraulic fluid (provided by others). Use ATF for cold weather applications or #32 hydraulic fluid for all other applications.

3.03 CLEANING

A. All surfaces shall be wiped clean and free of handprints, grease, and oil.

3.04 TRAINING

- A. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
- B. Operating keys and owner's manual shall be provided to owner's representative.

SECTION 08 41 26

ALL-GLASS ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior all-glass storefronts. (GLES-1, GLES-2)
- B. Interior all-glass sidelights and transoms. (GL-2)
- C. Interior swinging and sliding glass doors.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 08 71 00 Door Hardware: Hardware items other than specified in this section.
- C. Section 08 80 00 Glazing: Glass and glazing accessories.

1.03 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware.
- C. Delegated Design: The design for the All-Glass Entrance System will be the responsibility of the system manufacturer and installer, subject to review by the Architect.
- D. Shop Drawings: For all-glass entrances and storefronts.
 - 1. Include plans, elevations, and sections.
 - 2. Include details of fittings and glazing, including isometric drawings of patch fittings and rail fittings.
 - 3. Door hardware locations, mounting heights, and installation requirements.
- D. Samples: For each type of exposed finish indicated.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least ten years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of experience and approved by manufacturer.

1.05 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Special Warranty: Installer agrees to repair or replace components of all-glass systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion, except as follows:
 - a. Concealed Floor Closers: 10 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Comply with performance requirements specified, as determined by testing of all-glass entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction
- B. Structural Loads:
 - 1. Wind Loads: As indicated on Drawings.
 - 2. Other Design Loads: As indicated on Drawings.

3. Deflection Limits: Deflection normal to glazing plane is limited to 1/175 of clear span or 3/4 inch, whichever is smaller.

C. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes. 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.02 MANUFACTURERS

1

- A. Provide Basis of Design manufacturer listed, or a standard or custom product from one of the other listed manufacturers with equivalent performance, material properties, features, general configuration, appearance, and warranty.
- B. All-Glass Entrances and Storefronts:
 - BASIS OF DESIGN: C.R. Laurance Co., Inc or approved equal.
 - a. 1 1/2 inch deep top channel: WU1SASL.
 - b. 1" deep bottom channel: WU3SASL.
 - c. Finish: Clear anodized.
 - d. Glass Swing Door (GLES-1): Patch Fitting Pivot Door System (PH20BA Top door patch, PH10CA Bottom door patch, 90 degree hold open and ADA compliant concealed overhead closer)
 - e. Glass Sliding Door (GLES-2): CRL2901C
 - f. Concealed closer: OHC-609-90NHO (Assa Abloy Glass Solution)
 - g. Door pull: refer to hardware section 08 71 00
 - h. Glazing: ½ inch under 9'-0" (GL-2), Fully Tempered: See Section 08 80 00
 - i. Glass thickness indicated is minimum. Actual thickness to be determined by the glazing supplier to meet code requirements.
 - j. Finish: Satin Anodized
 - k. Substitutions: See Section 01 60 10 Substitution Procedures

2.03 METAL COMPONENTS

- A. Fitting Configuration:
 - 1. Manual-Swinging, All-Glass Entrance Doors and Sidelights: Patch fittings at head and sill on pivot side, and for lock at sill of swing side.
 - 2. All-Glass Storefronts: Recessed glazing channel at top and bottom.
- B. Patch Fittings: Satin Anodized.
- C. Rail Fittings:
 - 1. Material: Match patch-fitting metal and finish.
 - 2. Height:
 - a. Top Rail: As indicated.
 - b. Bottom Rail: As indicated.
 - 3. Profile: As indicated.
 - 4. End Caps: Manufacturer's standard precision-fit end caps for rail fittings.

- D. Accessory Fittings: Match patch fitting metal and finish for the following:
 - 1. Overhead doorstop.
 - 2. Center-housing lock.
- E. Anchors and Fastenings: Concealed.
- F. Weather Stripping: Pile type; replaceable without removing all-glass entrance doors from pivots.

2.04 ENTRANCE DOOR HARDWARE

- A. General: Heavy-duty entrance door hardware units in sizes, quantities, and types recommended by manufacturer for all-glass entrance systems indicated. For exposed parts, match metal and finish of patch fittings and rail fittings
- B. Concealed Overhead Closers and Top Pivots: Center hung; BHMA A156.4, Grade 1; including cases, bottom arms, top walking beam pivots, plates, and accessories required for complete installation.
 - 1. Swing: Single Acting.
 - a. Positive Dead Stop: Coordinated with hold-open angle if any, or at angle selected.
 - 2. Hold Open: Automatic, at angle selected.
 - 3. Opening-Force Requirements:
 - a. Egress Doors: Not more than 15 lbft to release the latch and not more than 30 lbft to set the door in motion and not more than 15 lbf to open the door to its minimum required width.
 - b. Accessible Interior Doors: Not more than 5 lbf to fully open door.
- C. Push-Pull Set: See Section 08 71 00 Door Hardware.

2.05 BUTT-GLAZING SEALANTS

- A. Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Uses NT, G, and A.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Bostik, Inc.
 - b. Dow Corning Corporation.
 - c. GE Construction Sealants; Momentive Performance Materials Inc.
 - d. Dow Corning Corporation.
 - e. Tremco Incorporated.

2.06 FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm
- B. Color: as follows:
 - 1. ALSF-1: Clear anodized finish
 - 2. ALSF-2: Clear anodized finish
- C. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.07 FABRICATION

- A. Provide holes and cutouts in glass to receive hardware, fittings, and accessory fittings before tempering glass. Do not cut, drill, or make other alterations to glass after tempering.
 - 1. Fully temper glass using horizontal (roller-hearth) process, and fabricate so that when glass is installed, roll-wave distortion is parallel with bottom edge of door or lite.
- B. Factory assemble components and factory install hardware and fittings to greatest extent possible.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install all-glass systems and associated components according to manufacturer's written instructions.
- B. Set units level, plumb, and true to line, with uniform joints.
- C. Maintain uniform clearances between adjacent components.
- D. Lubricate hardware and other moving parts according to manufacturer's written instructions.
- E. Set, seal, and grout floor closer cases as required to suit hardware and substrate indicated.
- F. Install butt-joint sealants according to manufacturer's instructions and as specified in Section 07 92 00 "Joint Sealants" to produce weathertight installation.

3.02 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.03 ADJUSTING

A. Adjust operating hardware for smooth operation.

3.04 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

SECTION 08 43 13

ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
 - 1. Thermally-broken exterior storefront (ALSF-1)
 - 2. Non-thermally-broken interior aluminum entrance door (ALSF-2).
- B. Infill panels of glass (GL-1 and GL-3)
- C. Aluminum doors.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 08 71 00 Door Hardware: Hardware items other than specified in this section.
- C. Section 08 80 00 Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 Care and Handling of Architectural Aluminum From Shop to Site.
- B. AAMA 609 & 610 Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document).
- C. AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
- D. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix).
- E. ASTM B209/B209M Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- F. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- G. ASTM B221M Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
- H. ASTM E330/E330M Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- I. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware,.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Samples: Submit two samples 4 by 12 inches in size illustrating finished aluminum surface.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least ten years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.07 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.08 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a three year period after Date of Substantial Completion.
- C. Provide ten year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide Basis of Design manufacturer listed, or a standard or custom product from one of the other listed manufacturers with equivalent performance, material properties, features, general configuration, appearance, and warranty.
- B. Aluminum-Framed Storefronts:
 - 1. **BASIS OF DESIGN:** Kawneer North America: www.kawneer.com/#sle.
 - a. Exterior Storefront: Encore Framing System with 360 Thermal Entrance
 - b. Interior Entrances: 350 Standard Entrances
 - 2. Oldcastle BuildingEnvelope: www.oldcastlebe.com/#sle.
 - 3. Pittco Architectural Metals Inc: www.pittcometals.com/#sle.
 - 4. Tubelite, Inc: www.tubeliteinc.com/#sle.
 - 5. Wausau; www.wausauwindow.com.
 - 6. YKK AP America Inc: www.ykkap.com.
 - 7. Substitutions: See Section 01 60 00 Product Requirements.

2.02 ALUMINUM-FRAMED STOREFRONT

- A. Interior Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Fabrication Method: Shop/factory unitized system.
 - 2. Glazing Method: Either shop/factory or field glazed system.
 - 3. Glazing Rabbet for Interior Glazing: For 1/4 inch monolithic glazing.
 - 4. Glazing Position: as follows:
 - a. Exterior (ALSF-1): front-set
 - b. Interior (ALSF-2): Aluminum door frame to receive 350 Standard aluminum door

- 5. Vertical Mullion Dimensions: as follows:
 - a. Exterior (ALSF-1): 1 3/4 inches wide by 4 1/2 inches deep.
 - b. Interior (ALSF-2): 1-3/4 inches wide by 4-1/2 inches deep.
- 6. Finish: Clear Anodized coatings:
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
- 7. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
- 8. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
- 9. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- 10. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
- 11. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
- 12. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- 13. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glazing and heel bead of glazing compound.
- B. Performance Requirements
 - 1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of structural notes/drawings.
 - b. Member Deflection: Limit member deflection to 1/175 in any direction, with full recovery of glazing materials.
 - 2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 10 psf.
 - 3. Air Leakage: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.24 psf pressure differential across assembly.
 - 4. Condensation Resistance Factor of Framing: 50, minimum, measured in accordance with AAMA 1503.
 - 5. U-value Including Glazing (Glass to Exterior): 0.77 Btu/(hr sq ft deg F), or better.

2.03 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections.
 - 1. Framing members for interior and vestibule applications need not be thermally broken.
 - 2. Frame components shall be screw spline construction.
 - 3. Glazing Stops: Flush.
- B. Glazing: See Section 08 80 00.
- C. Thermal Barrier

- 1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
- 2. Barrier material shall be poured-in-place, two-part polyurethane. A nonstructural thermal barrier is unacceptable.
- D. Exterior Swing Doors: Glazed aluminum.
 - 1. Provide thermally broken doors for exterior or semi-tempered locations
 - 2. Thickness: 2 1/4 inches, or manufacturer's standard for thermally-broken doors specified.
 - 3. Top and Vertical Stiles: medium
 - 4. Bottom Rail: 10 inches wide.
 - 5. Glazing Stops: Square.
 - 6. Finish: to match adjacent storefront.
- E. Interior Swing Doors: Glazed aluminum, narrow stile.
 - 1. Thickness: 1-3/4 inches.
 - 2. Rails: medium stile.
 - 3. Bottom Rail: 10 inches wide.
 - 4. Glazing Stops: Square.
 - 5. Finish: to match adjacent storefront.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M); minimum wall thickness of .080" (2 mm).
- B. Sheet Aluminum: ASTM B209/B209M.
- C. Fasteners: Stainless steel.
- D. Exposed Flashings: Aluminum sheet, 20 gauge, 0.032 inch minimum thickness; finish to match framing members.
- E. Concealed Flashings: Stainless steel, 26 gauge, 0.0187 inch minimum thickness.
- F. Sealant for Setting Thresholds: Non-curing butyl type.
- G. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- H. Glazing Accessories: See Section 08 80 00.

2.05 FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm
- B. Color: as follows:
 - 1. ALSF-1: Clear anodized finish
 - 2. ALSF-2: Clear anodized finish
- C. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.06 HARDWARE

- A. Door Hardware: As specified in Section 08 71 00.
 - 1. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
 - 2. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Install insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of sealant and secure.
- J. Install glass and infill panels in accordance with Section 08 80 00, using gasket glazing method.
- K. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 ADJUSTING

A. Adjust operating hardware for smooth operation.

3.05 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Swinging doors.
- B. Sliding doors.
- C. Other doors to the extent indicated.

1.03 DOOR HARDWARE INCLUDES

- A. Mechanical door hardware.
- B. Cylinders specified for doors in other sections.

1.04 RELATED SECTIONS

- A. Division 08 Section "Flush Wood Doors"
- B. Division 08 Section "Aluminum-Framed Entrances and Storefronts

1.05 REFERENCE STANDARDS

- A. ASTM C475/C475M Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- B. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board.
- C. ASTM C1047 Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base.
- D. ASTM C1396/C1396M Standard Specification for Gypsum Board.
- E. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- F. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- G. GA-216 Application and Finishing of Gypsum Board.

1.06 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- C. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
- 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
- 2. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
- 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
- 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.07 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware

installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.08 DELIVERY, STORAGE AND HANDLING

- A. A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.09 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and prewired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.10 WARRANTY

- A. A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Ten years for mortise locks and latches.
 - 2. Five years for exit hardware.
 - 3. Twenty five years for manual overhead door closer bodies.

1.11 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 - 5. Manufacturers:
 - a. Hager Companies (HA) BB Series, 5 knuckle.
 - b. McKinney (MK) TA/T4A Series, 5 knuckle.
 - c. dormakaba Best (ST) F/FBB Series, 5 knuckle.
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
 - 1. Manufacturers:

a. Pemko (PE).

2.3 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
 - 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 - 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 - 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 - 4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 - 5. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood (RO).
 - c. Trimco (TC).

2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
 - 1. Threaded mortise cylinders with rings and cams to suit hardware application.
 - 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 - 4. Tubular deadlocks and other auxiliary locks.
 - 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - 6. Keyway: Match Facility Standard.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
 - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:
 - 1. Change Keys per Cylinder: Two (2)
 - 2. Master Keys (per Master Key Level/Group): Five (5).
 - 3. Construction Keys (where required): Ten (10).
- F. Construction Keying: Provide construction master keyed cylinders.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
 - 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) ML2000 Series.
 - b. Sargent Manufacturing (SA) 8200 Series.

2.6 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 - 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 - 4. Dustproof Strikes: BHMA A156.16.

2.7 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
 - 1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 - 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 - 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 - 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 - 5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.

- b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
- 6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
- 7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
- 8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
- 9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
- 10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
 - 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) ED4000 / ED5000 Series.
 - b. Sargent Manufacturing (SA) 80 Series.

2.8 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
 - 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
 - 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 - 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
 - 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide nonhanded units standard.
 - 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) DC6000 Series.
 - b. Norton Rixson (NO) 8500 Series.

c. Sargent Manufacturing (SA) - 1431 Series.

2.9 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood (RO).
 - c. Trimco (TC).

2.10 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. Pemko (PE).
 - 2. Reese Enterprises, Inc. (RE).
 - 3. Zero (ZE).

2.11 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.12 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.2.01

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
 - Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 - 1. Quantities listed are for each pair of doors, or for each single door.
 - 2. The supplier is responsible for handing and sizing all products.
 - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 - 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Manufacturer's Abbreviations:

1. MK - McKinney 2. PE - Pemko

3. AD - Adams Rite

- 4. SA SARGENT 5. OT - Other 6. KA - Kaba Ilco
- 7. RO Rockwood
- 8. NO Norton

Hardware Sets

Set: 1.0

Doors: 101A

1	Continuous Hinge	CFM_SLF_HD1		ΡE
1	Rim Exit Device	<u>16 AD8504 Less Pull</u>	US32D	SA
1	Cylinder	Match Facility Standard		ОТ
1	Pull	RM201 Mtg-Type 12XHD	US32D	RO
1	Auto Operator & Actuators	Reuse Existing		ОТ
1	Door Stop	<u>471 EXP</u>	US26D	RO
1	Threshold	Per Detail & Field Conditions <u>x FHSL14</u>		PE
1	Gasket	By Door Manufacturer		
1	Sweep	<u>315CN</u>		PE

Notes: Exit device must be dogged for auto operator to function.

Set: 2.0

Doors: 101B

1	Continuous Hinge	CFM SLF HD1		PE
1	Rim Exit Device	16 AD8504 Less Pull	US32D	SA
1	Cylinder	Match Facility Standard		ОТ
1	Pull	RM201 Mtg-Type 12XHD	US32D	RO

4

1	Auto Operator & Actuators	Reuse Existing		ОТ
1	Door Stop	<u>471 EXP</u>	US26D	RO
1	Gasket	By Door Manufacturer		

Notes: Exit device must be dogged for auto operator to function.

Set: 3.0

Doors: E116A

1	Rim Exit Device, Alarmed	AL 8504 Less Pull	US10BE	SA
1	Exit Device Trim	814-FSW x Special Template	US10BE	SA
1	Cylinder	Match Facility Standard		ОТ
1	Balance of Hardware	Existing to Remain		ОТ

Note: Provide a different key system from the rest of the building to allow after hour access.

Set: 4.0

Doors: 106

Pull	RM324 Mtg-Type 5HD	US32D	RO
Balance of Hardware	By Door Supplier		ОТ
	Pull Balance of Hardware	Pull RM324 Mtg-Type 5HD Balance of Hardware By Door Supplier	PullRM324 Mtg-Type 5HDUS32DBalance of HardwareBy Door Supplier

3	Hinge, Full Mortise	TA2714	US10BE	MK
1	Classroom Lock	8237 LNJ	US10BE	SA

1	Cylinder	Match Facility Standard		ОТ
1	Door Stop	441H / 409	US10BE	RO
1	Gasket	S773D		PE

Set: 6.0

Doors: 111

3	Hinge, Full Mortise	TA2714	US10BE	MK
1	Passage Latch	8215 LNJ	US10BE	SA
1	Door Stop	441H / 409	US10BE	RO
1	Threshold (for auto door bottom)	151A / 236D FHSL14 (verify flooring)		PE
1	Gasket	S773D		PE
1	Door Bottom	STC411APK		PE

Set: 7.0

Doors: 112

2	Pull	RM324 Mtg-Type 5HD	US32D	RO
1	Wall Stop	<u>409</u>	US32D	RO
1	Balance of Hardware	By Door Manufacturer		ОТ

Set: 8.0

Doors: OHDR-1

		Per Detail x	
1	Threshold	Manufacturer's full range of colors.	PE
1	Balance of Hardware	By Door Manufacturer	ОТ

Set: 10.0

Doors: E103, E104

1	Privacy Lock	V21 8265 LNJ	US10BE	SA
1	Balance of Hardware	Existing to Remain/		ОТ

Set: 11.0

Doors: 101-TH

1	Classroom Security Lock	<u>8240 LNJ</u>	US10BE	SA
2	Cylinder	Match Facility Standard		ОТ
1	Balance of Hardware	Existing to Remain		ОТ

Notes: Verify hardware compatibility with existing door.

Set: 12.0

Doors: 119, 121

1	Privacy Lock	V21 8265 LNJ	US10BE	SA
1	Closer	1430	US10BE	SA
1	Balance of Hardware	Existing to Remain/		ОТ

Notes: At doors 119, 121, reuse existing hardware, including hinges, strikes, stops, kick plates, Etc.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units (GL-1).
- B. Glazing units, for interior glazing (GL-1, GL-2).
- C. Mirrors, frameless.
- D. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 Joint Sealants: Sealants for other than glazing purposes.
- B. Section 08 41 26 All-Glass Entrance Storefronts
- C. Section 08 43 13 Aluminum-Framed Storefronts: storefront assemblies requiring glazing.
- D. Section 10 28 00 Toilet, Bath, and Laundry Accessories: Framed mirrors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 Safety Standard for Architectural Glazing Materials.
- B. ANSI Z97.1 American National Standard for Safety Glazing Materials Used in Buildings Safety Performance Specifications and Methods of Test.
- C. ASTM C864 Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- D. ASTM C1036 Standard Specification for Flat Glass.
- E. ASTM C1048 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
- F. ASTM C1193 Standard Guide for Use of Joint Sealants.
- G. ASTM C1376 Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.
- H. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- I. ASTM E413 Classification for Rating Sound Insulation.
- J. ASTM E1300 Standard Practice for Determining Load Resistance of Glass in Buildings.
- K. ASTM E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation.
- L. GANA (GM) GANA Glazing Manual.
- M. GANA (SM) GANA Sealant Manual.
- N. NFRC 100 Procedure for Determining Fenestration Product U-factors.
- O. NFRC 200 Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
- P. NFRC 300 Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
 - 1. On mirror glass: mastic, and edge trim.

- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Shop Drawings: Include mirror elevations with field-verified dimensions, edge details, mirror hardware, and attachment details.
- E. Samples for Selection: Submit a minimum of three different translucent glass samples for selection by the Architect.
- F. Certificate: Certify that sound-rated units meet or exceed specified requirements.
- G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- H. Preconstruction Mirror Mastic Compatibility Test: Submit mirror mastic products to mirror manufacturer for testing to determine compatibility of mastic with mirror safety backing.
 - 1. Testing is not required if data are submitted based on previous testing of mirror mastic products and mirror backing matching those submitted.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA (GM) and FGMA Sealant Manual for glazing installation methods.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.
- C. Installer Qualifications: Company approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing according to manufacturer's written instructions and as needed to prevent damage to glazing from moisture, condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with glazing manufacturer's written instructions for shipping, storing, and handling glazing as needed to prevent deterioration of coatings, damage to edges, and abrasion of glass surfaces and applied coatings. Store indoors.

1.07 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.
- C. Store products in manufacturer's unopened packaging until ready for installation.

1.08 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
- C. Manufacturer's Special Warranty for Silvered Mirrored Glass: Written warranty, made out to Owner and signed by mirrored glass manufacturer agreeing to replace silvered mirrored glass units that deteriorate as defined below, within Five years from date of manufacture, but not less than three years from date of Substantial Completion.
 - 1. Deterioration of Silvered Mirrored Glass: Defects developed from normal use that are attributable to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning silvered mirrored glass contrary to mirrored glass manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Float Glass Manufacturers:
 - 1. AGC Glass North America, Inc: www.agc-yourglass.com/#sle.
 - 2. Cardinal Glass Industries: www.cardinalcorp.com.
 - 3. Guardian Glass, LLC: www.guardianglass.com.
 - 4. Pilkington North America Inc: www.pilkington.com/na/#sle.
 - 5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
 - 6. Substitutions: See Section 01 60 00 Product Requirements.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Design Pressure: as indicated in Structural drawings.
 - 2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 4. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
 - 2. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I Transparent Flat, Class 1 Clear, Quality Q3.
 - 2. Kind HS Heat-Strengthened Type: Complies with ASTM C1048.
 - 3. Kind FT Fully Tempered Type: Complies with ASTM C1048.
 - 4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
- B. Mirror Glass (MIR-1): Clear Annealed Float Glass: 1/4 inch thick. ASTM C 1036, Type I (transparent glass, flat), Class 1 (clear), Quality q2 (mirror) with successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard organic protective coating applied to second glass surface to produce a coating system complying with FS DD-M-411.
 - 1. Film Backing for Safety Mirrors: Film backing and pressure-sensitive adhesive; both compatible with mirror backing paint as certified by mirror manufacturer.

2.04 INSULATING GLASS UNITS

- A. Manufacturers:
 - 1. Glass: Any of the manufacturers specified for float glass.
 - 2. Cardinal Glass Industries: www.cardinalcorp.com.
 - 3. Guardian Industries Corp: www.sunguardglass.com.
 - 4. Oldcastle Glass; www.oldcastleglass.com.
 - 5. Pilkington North America Inc: www.pilkington.com/na.
 - 6. Viracon, Apogee Enterprises, Inc: www.viracon.com.
 - 7. **BASIS OF DESIGN (FOR IG UNITS)**: Vitro (formerly PPG Industries, Inc); Solarban 60 + Acuity: www.ppgideascapes.com.
 - 8. Substitutions: See Section 01 60 00 Product Requirements.
- B. Insulating Glass Units: Types as indicated.
 - 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 - 2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 - 3. Warm-Edge Spacers: Low-conductivity thermoplastic with dessicant warm-edge technology design.
 - a. Spacer Width: As required for specified insulating glass unit.
 - b. Spacer Height: Manufacturer's standard.
 - c. Products:
 - 1) Technoform Glass Insulation; TGI-Spacer: www.glassinsulation.us/#sle.
 - 2) Substitutions: See Section 01 60 00 Product Requirements.
 - 4. Spacer Color: match framing color.
 - 5. Edge Seal:
 - a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone sealant as secondary seal applied around perimeter.
 - 6. Color: Black.
 - 7. Purge interpane space with dry air, hermetically sealed.
- C. Type GL-1 Insulating Glass Units: Vision glass, double glazed.
 - 1. Applications: Toggle-glazed units in timber-framed curtainwall.
 - 2. Space between lites filled with argon.
 - Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 a. Tint: Clear.
 - 4. Warm-edge spacer, unless otherwise required for toggle-glazing.
 - Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 a. Tint: Clear.
 - 6. Total Thickness: 1 inch.
 - 7. Thermal Transmittance (U-Value), Winter Center of Glass: 0.3, maximum.
 - 8. Visible Light Transmittance (VLT): 67 percent, minimum.
 - 9. Solar Heat Gain Coefficient (SHGC): 0.28 percent, maximum.
 - 10. Glazing Method: Dry glazing method, gasket glazing.

2.05 GLAZING UNITS

- A. Monolithic Vision Glazing (GL-2):
 - 1. Glass Type: Fully tempered mid-iron float glass.
 - 2. Tint: Clear.

- 3. Thickness: 1/2 inch, nominal, unless indicated otherwise or required by code or per GANA recommendations based on spans.
- 4. Glazing Method: Wet glazing.
- B. Monolithic Vision Glazing (GL-3):
 - 1. Glass Type: Fully tempered mid-iron float glass.
 - 2. Tint: Clear.
 - 3. Thickness: 1/4 inch, nominal, unless indicated otherwise or required by code or per GANA recommendations based on spans.
 - 4. Glazing Method: Dry glazing method, gasket glazing.

2.06 ACCESSORIES

- A. Setting Blocks: Neoprene, with 80 to 90 Shore A durometer hardness; ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
 - 1. Width: 1/2 inch.
 - 2. Thickness: As required for application.
- D. Glazing Adhesive (for wall-mount installation): Neutral cure silicone
- E. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; color black.
- F. Glazing Clips: Manufacturer's standard type.
 - 1. Provide 1/4-inch z-clips as indicated, mounted to glass with neutral cure silicone adhesive and to wall with mechanical fasteners.
- G. Mirror Mastic: An adhesive setting compound, produced specifically for setting mirrored glass by spot application, certified by both mirrored glass manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrored glass will be installed.
 - 1. Gunther Mirror Mastics.
 - 2. Palmer Products Corporation.
 - 3. Sommer and Maca (Somaca).
 - 4. Substitutions: Section 016000 Product Requirements.
- H. Mirror Adhesive: Silicone pre-polymer based, chemically compatible with mirror coating and wall substrate.
- I. Mirror Glazing Clips: Manufacturer's standard type, where required. Refer to drawing details for typical mirror hardware.
- J Interior Glazing Film (FILM-1): Glass finishes field-applied application to glass decorative films.
 - 1. Basis of Design: 3M, Fasara Glas Finishes Gradation
 - a. Style: SH2FGDM 1270 Diamond
 - b. Size: 50" Wide
 - c. Installation: 50% Opaque starting at floor, Gradation starting at floor up to 100% transparent at 50".

2.07 FABRICATION

- A. Mirrors:
 - 1. Mirror Edge Treatment: Flat polished. Seal edges of mirrors with edge sealer after edge treatment to prevent chemical or atmospheric penetration of glass coating.
 - 2. Film-Backed Safety Mirrors: Apply film backing with adhesive coating over mirror backing paint, as recommended in writing by film-backing manufacturer, to produce a surface free of bubbles, blisters, and other imperfections.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that the minimum required face and edge clearances are being provided.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
- D. Verify that sealing between joints of glass framing members has been completed effectively.
- E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry immediately before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
- C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
- D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
- E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
- F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - EXTERIOR DRY GLAZING METHOD (GASKET GLAZING)

- A. Application Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - MIRRORS

A. Install mirrors in accordance with GANA recommendations.

- B. Set mirrors with edge clearance free of surrounding construction.
- C. Set mirrors with adhesive, applied in accordance with adhesive manufacturer's instructions.

3.06 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 09 05 61

COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
 - 1. Resilient tile and sheet.
 - 2. Carpet tile.
 - 3. Thin-set ceramic tile and stone tile.
- B. Removal of existing floor coverings.
- C. Preparation of new concrete floor slabs for installation of floor coverings.
- D. Testing of concrete floor slabs for moisture and alkalinity (pH).
- E. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
- F. Remedial floor coatings.

1.02 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements: Additional requirements relating to testing agencies and testing.

1.03 DEFINITIONS

- A. MVE: Moisture Vapor Emission.
- B. MVER: Moisture Vapor Emission Rate; measured in lbs per1000 ft2 / 24 hours.
- C. RH: Relative Humidity; measured in percentage.
- D. VOC: Volatile Organic Compound; measured in grams/liter.
- E. CSP: Concrete Surface Profile defined by ICRI.

1.04 REFERENCE STANDARDS

- A. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- B. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- C. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- D. RFCI (RWP) Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.
- B. Pre-Installation Meeting:
 - 1. Convene minimum two weeks prior to starting work of this section.
 - 2. Discuss contract document requirements, moisture tests, manufacturer recommendations, installer's recommendations, scheduling, and protection of work from damage by other trades.
 - 3. Attendance required by: Contractor, Floor Installer, Manufacturer's Representative, Independent testing agency, Concrete Subcontractor, Ready Mix supplier.
 - 4. Objective of conference is:

- a. Review methods and procedures.
- b. Tour job site representative areas to inspect and discuss condition of substrate.
- c. Review concrete finishing requirements.
- d. Review and finalize construction schedule to ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- e. Review required inspections, testing, certifications, material usage procedures.
- f. Review environmental restrictions and forecasts.
- g. Confirm compatibility of MVE control coatings with other concrete chemicals specified.
- h. Record content of conference including attendance and topics.
- 5. Furnish record of pre-installation conference to all parties who are affected by MVE control systems work.

1.06 SUBMITTALS

- A. Visual Observation Report: For existing floor coverings to be removed.
- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
 - 1. Manufacturer's statement of compatibility with types of flooring applied over remedial product.
 - 2. Test reports indicating compliance with specified performance requirements, performed by nationally recognized independent testing agency.
 - 3. Specimen Warranty: Copy of warranty to be issued by coating manufacturer and certificate of underwriter's coverage of warranty.
- D. Testing Agency's Report:
 - 1. Description of areas tested; include floor plans and photographs if helpful.
 - 2. Summary of conditions encountered.
 - 3. Moisture and alkalinity (pH) test reports.
 - 4. Copies of specified test methods.
 - 5. Recommendations for remediation of unsatisfactory surfaces.
 - 6. Product data for recommended remedial coating.
 - 7. Submit report to Architect.
 - 8. Submit report not more than two business days after conclusion of testing.
- E. Adhesive Bond and Compatibility Test Report.
- F. Installer's Qualification Statement.

1.07 QUALITY ASSURANCE

- A. Supply all components of MVE Control System from single source manufacturer.
- B. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.
- C. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.
- D. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
 - 1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.

- E. Contractor's Responsibility Relating to Independent Agency Testing:
 - 1. Provide access for and cooperate with testing agency.
 - 2. Confirm date of start of testing at least 10 days prior to actual start.
 - 3. Allow at least 4 business days on site for testing agency activities.
 - 4. Achieve and maintain specified ambient conditions.
 - 5. Notify Architect when specified ambient conditions have been achieved and when testing will start.
- F. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

1.09 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
- B. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
 - 1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
 - 2. ASTM F3010 qualified, fluid-applied, two-component, 100 percent solids epoxy resin, low viscosity, penetrating, one-coat membrane forming system; formulated for application on concrete substrates to reduce MVER to level required for installation of floor covering indicated, including adhesives.
 - 3. Products:
 - a. Allied Construction Technologies, Inc. (ACTech), GoEarly Technology; www.actechperforms.com
 - b. ARDEX Engineered Cements; ARDEX MC RAPID: www.ardexamericas.com/#sle.
 - c. Custom Building Products; TechMVC Moisture Vapor and Alkalinity Barrier: www.custombuildingproducts.com/#sle.
 - d. ISE Logik: MVEC 700; www.iselogik.com
 - e. Koster American Corporation; Koster VAP 1 2000: www.kosterusa.com.

- f. LATICRETE International, Inc; LATICRETE NXT Vapor Reduction Coating with LATICRETE NXT Level Plus: www.laticrete.com/#sle.
- g. MAPEI Americas: Planiseal VS or VS Fast; www.mapei.com/US-EN
- h. Maxxon Corporation: MVP; www.maxxoncorporation.com
- i. TEC, an H.B. Fuller Construction Products Brand; TEC LiquiDam with TEC Level Set 200 SLU: www.tecspecialty.com/#sle.
- j. Tnemec Company, Inc; Series 208 Epoxoprime MVT: www.tnemec.com/#sle.
- k. UZIN UTZ NORTH AMERICA, INC; UZIN PE 460 with UZIN PE 280 and UZIN NC 170 LevelStar: https://us.uzin.com/#sle.
- I. Substitutions: See Section 01 60 00 Product Requirements.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 - 1. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
 - a. Do not attempt to remove coating or penetrating material.
 - b. Do not abrade surface.
 - 2. Preliminary cleaning.
 - 3. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
 - 4. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 6. Specified remediation, if required.
 - 7. Patching, smoothing, and leveling, as required.
 - 8. Other preparation specified.
 - 9. Adhesive bond and compatibility test.
 - 10. Protection.
- B. Remediations:
 - 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
 - 2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
 - 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

- A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
- B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 PRELIMINARY CLEANING

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

3.04 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

3.05 INTERNAL RELATIVE HUMIDITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

3.06 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
 - 1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
 - Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
 - 3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.

C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.07 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

3.08 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

3.09 APPLICATION OF REMEDIAL FLOOR COATING

A. Comply with requirements and recommendations of coating manufacturer.

3.10 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 09 29 00

GYPSUM BOARD

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum wallboard (GWB-1).
- B. Gypsum ceiling board (GCB-1, GCB-2).
- C. Joint treatment and accessories.
- D. Mud-in trim
- E. Painting of above-ceiling firewall warning signs required by code.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07 92 00 Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. ASTM C475/C475M Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- B. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board.
- C. ASTM C1047 Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base.
- D. ASTM C1396/C1396M Standard Specification for Gypsum Board.
- E. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- F. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- G. GA-216 Application and Finishing of Gypsum Board.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for the following:
 - 1. Gypsum Wallboard
 - 2. Gypsum Ceiling board
 - 3. Perforated Gypsum Ceiling board
 - 4. Interior Trim
 - 5. Joint Treatment Materials
 - 6. Acoustical sealant
- C. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.
- D. Samples for the following products:
 - 1. Trim Accessories
 - 2. Perforated Gypsum Ceiling.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing.
- B. Perform in accordance with ASTM C 840.

1.06 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.07 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration

PART 2 PRODUCTS

2.01 SOURCE LIMITATIONS

A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

2.02 PERFORMANCE REQUIREMENTS

A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.03 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
 - 3. Thickness:
 - a. Vertical Surfaces: 5/8 inch (GWB-1).
 - b. Ceilings: 1/2 inch (GCB-1).
 - c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 - d. Edges: Tapered.
 - 4. Paper-Faced Products:
 - a. American Gypsum Company; FireBloc Type C Gypsum Wallboard: www.americangypsum.com/#sle.
 - b. CertainTeed Corporation; Type C Drywall: www.certainteed.com/#sle.
 - c. Continental Building Products; Firecheck Type C: www.continental-bp.com/#sle.
 - d. Georgia-Pacific Gypsum; ToughRock Fireguard C: www.gpgypsum.com/#sle.

- e. National Gypsum Company; Gold Bond BRAND Fire-Shield Gypsum Board: www.nationalgypsum.com/#sle.
- f. Substitutions: See Section 01 60 00 Product Requirements.
- 5. Mold Resistant Paper Faced Products:
 - a. American Gypsum Company; M-Bloc Type C: www.americangypsum.com/#sle.
 - b. CertainTeed Corporation; M2Tech 5/8" Type C Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
 - c. Continental Building Products; Mold Defense: www.continental-bp.com/#sle.
 - d. Georgia-Pacific Gypsum; ToughRock Mold-Guard: www.gpgypsum.com/#sle.
 - e. National Gypsum Company; Gold Bond XP Gypsum Board: www.nationalgypsum.com/#sle.
 - f. Substitutions: See Section 01 60 00 Product Requirements.
- C. Perforated Gypsum Ceiling Board (GCB-2):
 - 1. Application: As indicated in the drawings.
 - 2. Edges: Square (FE or SK Edge)
 - 3. Perforated Gypsum Ceiling Board
 - a. Regular Type: Thickness 1/2 inch.
 - b. Products:
 - Perforated Gypsum Board and Accessories: Gypsorb, LLC Address: 4813 NW 8th Ave., Seattle WA 98107 Telephone: 206-571-5710 / 609-775-5522 Web: www.gypsorb.com
 - 2) Substitutions: See Section 01 60 00 Product Requirements.
 - 4. Pattern: STRATA 12-20-35.
 - 5. Grid Suspension Assemblies (Ceilings):
 - a. SURFACE DIMENSION MUST BE [min] 60 MM IN WIDTH AT SHORT EDGE JOINTS.
 - 1) Gypsorb Streamline Framing System to be hung from Clark Dietrich 1-1/2" cold rolled channel
 - 2) Armstrong World Industries with Gypsorb Blocking Assembly

2.05 GYPSUM WALLBOARD ACCESSORIES

- A. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- B. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
 - 1. Types: As detailed or required for finished appearance.
 - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
 - 3. Products:
 - a. Same manufacturer as framing materials.
 - b. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
 - c. Trim-tex, Inc: www.trim-tex.com/#sle.
 - d. Substitutions: See Section 01 60 00 Product Requirements.
 - 4. Window Reveal Angle (TRIM-1): trim-free, square-set interior steel window reveal that eliminates the need for moldings and trims.
 - a. Product: EZConcept: EzyReveal or approved equal
- C. Decorative Gypsum Vinyl Trim:
 - 1. Material: Vinyl

- 2. Finish: White
- 3. Type: Profile as selected from manufacturer's standard range.
- 4. Tear Away 'L' Bead: 1/2" deep.
 - a. Product: Trim-Tex: 9010 ; www.trim-tex.com
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners at glass-faced gypsum or cement board.
 - 2. Paper Tape: 2 inch wide, creased paper tape for joints and corners at paper-faced gypsum.
 - 3. Joint Compound: Drying type, vinyl-based, ready-mixed.
 - 4. Joint Compound: Setting type, field-mixed.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.
- B. Verify that rough-in utilities are in proper location.

3.02 FRAMING INSTALLATION

- A. Suspended Ceilings and Soffits: Space framing and furring members as permitted by standard unless noted more restrictively on drawings.
 - 1. Level ceiling system to a tolerance of 1/1200.
 - 2. Laterally brace entire suspension system.
- B. Studs: Space studs as permitted by standard.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- D. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
 - 1. Orientation: Vertical.
 - 2. Spacing: As permitted by standard.
- E. Blocking: Install wood blocking or mechanically fastened steel sheet blocking for support of:
 - 1. Framed openings.
 - 2. Countertop and shelf supports
 - 3. Wall mounted cabinets.
 - 4. Plumbing fixtures.
 - 5. Toilet partitions.

- 6. Toilet accessories.
- 7. Wall-mounted door hardware.
- 8. Handrails
- 9. Corner guards
- 10. Wall hooks
- 11. Chalkboards, tack boards, and marker boards.
- 12. Owner provided wall mounted equipment, whether owner-installed or contractor-installed.
- 13. Other locations as indicated in drawings.

3.03 ACOUSTIC WALL INSTALLATION

- A. Minimize penetrations, such as, but not limited to, ductwork, piping, plenum grilles, etc., of walls recommended at 55 STC or greater.
- B. Any wall recommended at STC 45 or higher must seal all penetrations through wall with non-hardening sealant. If the perimeter opening is greater than ½", the penetration must be filled with acoustic batt insulation prior to being sealed with non-hardening sealant.
- C. Backboxes, receptacles, and other similar equipment must not share stud cavity space with adjacent room in walls recommended at STC 45 or greater, and shall be sealed with acoustic backer putty
- D. The outer most layers of gypsum board must be sealed with a bead of non-hardening sealant to the soffits, ceiling structure, and to the floor structure.
- E. If multiple layers of gypsum board are used, the installation must be staggered so that the seams do not line up between layers.
- F. Installation must follow manufacturer's guidelines where acoustic products such as, but not limited to, resilient channels, dampening compound, mass loaded vinyl, resilient clips, resilient hangers, insulation, sealant, etc. are specified.
- G. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
 - 1. Do not compress insulation.
- H. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place one bead continuously on substrate before installation of perimeter framing members.
 - 2. Place continuous bead at perimeter of each layer of gypsum board.
 - 3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

D. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

3.06 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish, and other areas specifically indicated.
 - a. Spray-applied high build drywall surfacer is not allowed.
 - 2. Level 4: Walls and ceilings to receive other paint finishes, unless otherwise indicated.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
 - 5. Level 0: Temporary partitions.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding are not required at base layer of double-layer applications.
- D. Where Level 5 finish is indicated, slightly thin all-purpose joint compound, roll on wall with 24-inc roller and wipe down with drywall knife.
- E. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 51 00

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units (ACT-1).

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 29 00 Gypsum Board: coordination with adjacent gypsum board ceilings

1.03 REFERENCE STANDARDS

- A. ASCE 7 Minimum Design Loads for Buildings and Other Structures.
- B. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM C635/C635M Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- D. ASTM C636/C636M Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
- E. ASTM E580/E580M Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions.
- F. ASTM E1264 Standard Classification for Acoustical Ceiling Products.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, mechanical and electrical items installed in the ceiling, and perimeter conditions.
- C. Product Data: Provide data on suspension system components, acoustical units, and trim or accessories.
- D. Samples: Submit two samples 4 by 4 inch in size illustrating material and finish of acoustical units.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: 1 carton of each type and size.
 - 3. Turn over to owner, for storage on-site or off-site.

1.06 QUALITY ASSURANCE

A. Designer Qualifications for Seismic Design: Perform under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.

- B. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- C. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.

1.07 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide Basis of Design manufacturer listed in the Interior Finish Schedule, or an approved standard or custom product from one of the other listed manufacturers with equivalent performance, material properties, features, general configuration, appearance, and warranty.
- B. Acoustic Tiles/Panels:
 - 1. BASIS OF DESIGN: CertainTeed Corporation: www.certainteed.com.
 - 2. Armstrong World Industries, Inc: www.armstrong.com.
 - 3. USG: www.usg.com.
 - 4. Substitutions: See Section 01 60 00 Product Requirements.
- C. Suspension Systems:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01 60 00 Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category D and complying with the following:
 - 1. Local authorities having jurisdiction.

2.03 ACOUSTICAL UNITS

- A. Acoustical Units General: ASTM E1264, Class A.
 - 1. VOC Content: As specified in Section 01 61 16.
- B. Acoustical Tiles (ACT-1): Glass fiber with membrane-faced overlay, with the following characteristics:
 - 1. Classification: ASTM E1264 Type XII.
 - 2. Size: Swing Down, 24 by 48 inches.
 - 3. Thickness: 11/8 inch.
 - 4. NRC: 0.85, determined in accordance with ASTM E1264.
 - 5. Panel Edges: Semi-Concealed
 - 6. Color: Coated Fiberglass mat, White
 - 8. Suspension System: 15/16" EZ Stab Classic System
 - 9. Products:
 - a. **BASIS OF DESIGN:** CertainTeed Corporation: <u>www.certainteed.com</u>. Techstyle Acoustic Ceiling Panel.
 - b. Substitutions: See Section 01 60 00 Product Requirements.

2.04 SUSPENSION SYSTEM(S)

- A. Suspension Systems General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
 - 1. Provide seismic systems.
 - 2. Materials:

- a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
- B. Concealed Suspension System: Hot-dipped galvanized steel grid and cap.
 - 1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 - 2. Profile: Tee; 15/16 inch face width.
 - 3. Finish: Baked enamel.
 - 4. Color: White.

2.05 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Hold-Down Clips: Manufacturer's standard clips to suit application.
- D. Seismic Clips: Manufacturer's standard clips for seismic conditions and to suit application.
- E. Perimeter Moldings: Same metal and finish as grid.
 - 1. Size: As required for installation conditions.
 - 2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.
- F. Metal Edge Trim for Suspension Systems: Steel or extruded aluminum; provide attachment clips, splice plates, and preformed corner pieces for complete trim system.
 - 1. Trim Height: 6 inch, unless otherwise detailed.
 - 2. Finish: Baked enamel.
 - 3. Color: to match adjacent grid.
 - 4. Products:
 - a. Armstrong: Axiom Classic; www.armstrong.com
 - b. USG Corporation; Compasso Suspension Trim: www.usg.com/ceilings/#sle.
- G. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.
- E. Seismic Suspension System, Seismic Design Categories D, E, and F: Hang suspension system with grid ends attached to the perimeter molding on two adjacent walls; on opposite walls, maintain a 3/4 inch clearance between grid ends and wall.
- F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- I. Do not eccentrically load system or induce rotation of runners.
- J. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch movement. Maintain visual closure.

3.04 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
 - 3. Double cut and field paint exposed reveal edges.
- F. Install sealant at perimeter at walls indicated to have an STC rating.
- G. Install hold-down clips on panels within 20 ft of an exterior door.

3.05 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

SECTION 09 65 00

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient sheet flooring (LINO-1)
- B. Resilient base (RB-1, RB-2).

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 05 61 Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

- A. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- B. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- C. ASTM F1861 Standard Specification for Resilient Wall Base.
- D. ASTM F2034 Standard Specification for Sheet Linoleum Floor Covering.
- E. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Sustainable Design Submittal: Submit VOC content documentation for flooring and adhesives.
- E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.

1.07 FIELD CONDITIONS

A. Store materials for not less than 1 week prior to installation in area of installation at temperature range recommended by manufacturer.

- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 degrees F or more than 95 degrees F.
- C. Do not install floor coverings and adhesives when the moisture condition of concrete slab exceeds manufacturer's recommendations.

1.08 WARRANTY

A. Wear: ten years

PART 2 PRODUCTS

2.01 SHEET FLOORING

- A. Linoleum Sheet: Homogeneous wear layer bonded to backing, with color and pattern through wear layer thickness.
 - 1. Manufacturers:
 - a. Armstrong World Industries, Inc: www.armstrong.com/#sle.
 - b. BASIS OF DESIGN (LINO-1): Forbo Flooring, Inc; Walton Cirrus:
 - www.forboflooringna.com/#sle.c. Johnsonite, a Tarkett Company; www.johnsonite.com/#sle.
 - Minimum Requirements: Comply with ASTM F2034, Type corresponding to type specified.
 - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
 - 4. VOC Content Limits: As specified in Section 01 61 16.
 - 5. Backing: Jute fabric.
 - 6. Thickness:
 - a. LINO-1 (floor): 2.5 mm
 - 7. Pattern: as indicated in Drawings.
 - 8. Color: 3355 Rosemary Green

2.02 RESILIENT BASE

- A. Resilient Base (RB-1, RB-2): ASTM F1861, Type TS rubber, vulcanized thermoset; top set as indicated below.
 - 1. Manufacturers:
 - a. BASIS OF DESIGN: Flexco, TS Wallflowers Rubber, WF-029.
 - b. Substitutions: See Section 01 60 00 Product Requirements.
 - 2. Height: 4 inch.
 - 3. Thickness: 0.125 inch.
 - 4. Finish: Satin.
 - 5. Length: rolls; 4 foot section prohibited.
 - 6. Color: as indicated in Material/Product ID List in the Drawings.
 - 7. Style: as indicated in Material/Product ID List in the Drawings;
 - 8. Accessories: Premolded external corners.

2.03 ACCESSORIES

- A. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
 1. VOC Content Limits: As specified in Section 01 61 16.
- B. Underlayment, at floors: High-density synthetic rubber sheet for sound control and moisture impermeability.
 - 1. Thickness: 1.52 mm (0.060")
 - 2. Roll Width: 36 or 54 inches
 - 3. Permeability (ASTM E96): < 1 perm

- 4. Acoustical (ASTM E2179): ΔIIC 17
- 5. Product: Tarkett SureStart

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test in accordance with Section 09 05 61.
 - 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
 - 3. Follow moisture and alkalinity remediation procedures in Section 09 05 61.
- D. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for pH and moisture emission rate in accordance with ASTM F 710; obtain instructions if test results indicate moisture emission rate greater than 3 lb per 1000 sq ft per 24 hours.
 - 1. Perform calcium chloride moisture test on slabs "at service temperature" and in accordance with ASTM F 1869 for each 500 sq ft of floor area.
 - 2. Contractor may be required to perform in-situ relative humidity testing per ASTM F 2170.
- E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.
- D. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor and wall conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
 - 1. Spread only enough adhesive to permit installation of materials before initial set.
 - 2. Fit joints and butt seams tightly.
 - 3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
 - 2. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SOUND CONTROL UNDERLAYMENT

A. Install in accordance with underlayment manufacturer's instructions.

3.05 INSTALLATION - SHEET FLOORING

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
- B. Seams are prohibited in bathrooms, kitchens, toilet rooms, and custodial closets.
- C. Cut sheet at seams in accordance with manufacturer's instructions.
- D. Seal seams by heat welding where indicated.

3.06 INSTALLATION - WALL PANELS

- A. Install stair coverings in one piece for full width and height of panel.
- B. Adhere over entire surface. Fit accurately and securely.
- C. Chemically bond seams using seam sealer.

3.07 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.08 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's instructions.

SECTION 09 68 13

TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered (CPT-1, CPT-2, CPT-3, CPT-4, CPT-5)
- B. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 05 61 Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

- A. ASTM D2859 Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
- B. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- C. CRI 104 Standard for Installation of Commercial Carpet.
- D. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Shop Drawings: Indicate layout of joints and direction of carpet pile.
- D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 Product Requirements, for additional provisions.
 - 2. Extra Carpet Tiles: 1 carton of each color and pattern installed.
 - 3. Turn over to owner, for storage on-site or off-site.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience.

1.06 MOCK-UPS

- A. See Section 01 40 00 Quality Requirements for additional requirements.
- B. Construct one mock-up, size as indicated on Drawings, indicating installation of CPT-1A/B/C/D patterns.
- C. Locate as indicated on Level 1 South Finish Plan.

D. Mock-up may remain as part of work.

1.07 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.
- B. Maintain minimum 70 degrees F ambient temperature 24 hours prior to, during and 24 hours after installation.
- C. Ventilate installation area during installation and for 72 hours after installation.

1.08 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish extra materials, from the same production run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile Carpeting Materials: For each type, color, texture, and finish, full width by length to equal to 5 percent of amount installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide Basis of Design manufacturer listed in the Finish Schedule, or an Architect-approved standard or custom product with equivalent performance, material properties, features, general configuration, appearance, and warranty.
- B. Tile Carpeting:
 - 1. BASIS OF DESIGN: Interface, Inc: <u>www.interface.com/#sle</u>.
 - 2. BASIS OF DESIGN: Flor, www.flor.com
 - 3. Substitutions: See Section 01 60 00 Product Requirements.

2.02 MATERIALS

- A. Tile Carpeting (CPT-#): Heterogenous construction of nylon tufted level loop, manufactured in one color dye lot.
 - 1. Properties:
 - a. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
 - b. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
 - c. Dye Method: 100% Solution Dyed
 - d. Primary Backing: CQuestBioX
 - 2. Model / Colors / Patterns: As indicated in Material/Product ID List in the Drawings
 - 3. Tile Size: As indicated in Material/Product ID List in the Drawings
 - 4. Install Method: As indicated in Material/Product ID List in the Drawings.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.
 1. Adhesive "dots" prohibited.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test in accordance with Section 09 05 61.
 - 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.
 - 3. Follow moisture and alkalinity remediation procedures in Section 09 05 61.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions and CRI 104 (Commercial).
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay out carpet and locate seams in accordance with shop drawings.
 - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
 - 2. Do not locate seams perpendicular through door openings.
 - 3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
 - 4. Locate change of color or pattern between rooms under door centerline.
 - 5. Provide monolithic color, pattern, and texture match within any one area.
- F. Fully adhere carpet tile to substrate.
- G. Trim carpet tile neatly at walls and around interruptions.
- H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

SECTION 09 72 00

WALL COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Felt wall coverings – FELT-1A, FELT-1B, FELT-2A, FELT-2B and FELT-2C

1.02 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: For each type of product:
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each type of wall covering and for each color, pattern, texture, and finish specified, full width by 36-inch-long in size.
- E. Maintenance Data: Manufacturer's instructions and recommendations for maintenance of wall coverings.

1.03 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for installation.
 - 1. Build mockups for each type of wall covering on each substrate required. Comply with requirements in ASTM F1141 for appearance shading characteristics.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.04 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 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.
- 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

2.01 PERFORMANCE REQUIREMENTS

- A. Wall materials shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.".
- B. 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..

2.02 FELT WALL COVERINGS – FELT

- A. FELT-1A, KIREI
 - 1. Product: EMBOSSED PANEL SERIES
 - 2. Style: GROOVY 3.0.
 - 3. Color: 384 SEAWEED.
 - 4. Panel Size: 110.2" x 44.5" x 0.35"
 - 5. Thickness: 0.8"
 - 6. NRC: 0.30
 - 7. Content: RECYCLED PET
- B. FELT-1B, KIREI
 - 1. Product: EMBOSSED PANEL SERIES
 - 2. Style: GROOVY 3.0.
 - 3. Color: 454 MUSHROOM.
 - 4. Panel Size: 110.2" x 44.5" x 0.35"
 - 5. Thickness: 0.8"
 - 6. NRC: 0.30
 - 7. Content: RECYCLED PET
- C. FELT-2A, KIREI
 - 1. Product: MURA WALLCOVERING
 - 2. Color: SOLID MURA 384.
 - 3. Panel Size: 6M x 1210mm ROLL
 - 4. NRC: 0.10
 - 5. Content: RECYCLED PET
- D. FELT-2B, KIREI
 - 1. Product: MURA WALLCOVERING
 - 2. Color: SOLID MURA MUSHROOM 454.
 - 3. Panel Size: 6M x 1210mm ROLL
 - 4. NRC: 0.10
 - 5. Content: RECYCLED PET
- E. FELT-2C, KIREI
 - 6. Product: MURA WALLCOVERING
 - 7. Color: SOLID MURA 579 OLIVE GREEN.
 - 8. Panel Size: 6M x 1210mm ROLL
 - 9. NRC: 0.10

10. Content: RECYCLED PET

2.03 ACCESSORIES

- A. Adhesive: Mildew-resistant, non-staining, strippable adhesive, for use with specific wall covering and substrate application indicated and as recommended in writing by wall-covering manufacturer.
 - Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of A&E ARCHITECTS, PC MISSOULA PUBLIC LIBRARY MSR DESIGN MISSOULA, MONTANA WALL COVERINGS 097200 - 3 Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.".
- B. Primer/Sealer: Mildew resistant, complying with requirements in Section 099123 "Interior Painting" and recommended in writing by primer/sealer and wall-covering manufacturers for intended substrate.
- C. Metal Primer: Interior ferrous metal primer complying with Section 099123 "Interior Painting" and recommended in writing by primer and wall-covering manufacturers for intended substrate.

PART 3 EXECUTION

3.01 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. Plaster: Allow new plaster to cure. Neutralize areas of high alkalinity. Prime with primer recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
 - 3. Metals: If not factory primed, clean and apply primer recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
 - 4. Gypsum Board: Prime with primer as recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
 - 5. Painted Surfaces: Treat areas susceptible to pigment bleeding.
- D. Check painted surfaces for pigment bleeding. Sand gloss, semigloss, and eggshell finish with fine sandpaper.
- E. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.
- F. Acclimatize wall-covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

3.02 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.
- D. Install wall covering without lifted or curling edges and without visible shrinkage.

- E. 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.
- F. Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without overlaps or gaps between strips.
- G. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.
- H. Remove excess adhesive at seams, perimeter edges, and adjacent surfaces.
- I. Reinstall hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.

3.03 PROTECTION

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

SECTION 09 91 13

EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints (PT-#)
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Steel and iron.
 - 2. Wood.

1.02 RELATED REQUIREMENTS:

- A. Section 01 61 16 Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 91 23 Interior Painting

1.03 DEFINITIONS

- A. MPI Gloss Level 1 (Flat or Matte): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3 (Eggshell): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 5 (Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D 523.

1.04 ACTION SUBMITTALS

- A. Product Data
 - 1. For each type of product, include the following:
 - a. Preparation requirements and application instructions.
 - b. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - c. Product list cross-referenced to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. For all paints and coatings, provide manufacturer's documentation indicating compliance with the following requirements as detailed in Part 2:
 - a. General Emissions Evaluation
 - b. VOC Content Requirements for Wet Applied Products.
 - c. Paint Content Restrictions.
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.

1.05 INFORMATIONAL SUBMITTALS

- A. Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm) with all content characterized and screened.
 - 1. For each product, provide one of the following documents:
 - a. Health Product Declaration (HPD)
 - b. Declare Label

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1.06 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. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.07 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- B. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
 - b. Other Items: Architect will designate items or areas required.
 - 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.09 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. BASIS OF DESIGN: Sherwin-Williams Company (The).
- B. Substitutions: See Section 01 60 00 Product Requirements.

2.02 PAINT, GENERAL

- A. MPI Standards:
 - 1. Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
 - 2. All paints and coatings to meet MPI X-Green Performance Standards except where otherwise indicated.
- B. Material Compatibility:

- 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. General Emissions Evaluation: Products must be compliant with the California Department of Public Health (CDPH) Standard Method v1.1–2010 or later version.
 - 1. Compliance to be confirmed with one of the following certifications:
 - a. UL GreenGuard Gold.
 - b. SCS Indoor Advantage Gold.
 - c. Master Painters Institute (MPI) Extreme Green (X-Green).
 - d. Green Wise Gold.
 - e. Compliance with CHPS (Collaborative for High Performance Schools).
- D. VOC Content Requirements for Wet Applied Products:
 - All paints and coatings wet-applied on site must meet the applicable VOC limits of the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective February 5, 2016, except as follows:
 - a. All interior paints and coatings, including colorants and tints, shall not exceed the limits defined below, measured in grams per liter (g/L) less water and less exempt compounds:
 - 1) Flat: 10
 - 2) Non-Flat: 10
 - 3) Primers: 10, except as allowed by specified MPI Number.
 - 4) Colorants do not increase the VOC content of the base paint when tinted.
- E. Paint Content Restrictions
 - 1. All interior paints and coatings must be free of alkylphenol ethoxylates (APEs).
 - a. This means paint products do not contain intentionally added or unintentionally added/residual APEs (above 100 ppm)
 - 2. All paints and coatings must be free of antimicrobial products.
 - a. Antimicrobials added to materials or products for the sole purpose of preserving the product are exempt from this restriction.
 - 3. Compliance with above restrictions to be confirmed with one of the following documents:
 - a. Green Seal Paint Standard GS-11 Certification, Green Seal, Inc.
 - b. Material Ingredients Disclosure Documentation indicating product is Red List Free.
 - c. Manufacturer's signed letter of confirmation.
- F. Provide products with Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm), with all content characterized and screened, to be verified through the HPD or Declare Label.
- G. Colors: As indicated in a color schedule, on the Material ID sheet in the Drawings.

2.03 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
 - 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 - 2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.
 - 1. Report, in writing, conditions that may affect application, appearance, or performance of paint.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMUs): 12 percent.
 - 3. Wood: 15 percent.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:
 - 1. SSPC-SP 2.
 - 2. SSPC-SP 3.
 - 3. SSPC-SP 7/NACE No. 4.
 - 4. SSPC-SP 11.

- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.03 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.04 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.05 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.06 EXTERIOR PAINTING SCHEDULE

- A. Concrete Substrates:
 - 1. Latex System:
 - a. Prime Coat: Primer sealer, latex.
 - 1) S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils (0.203 mm) wet, 3.2 mils (0.081 mm) dry.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, satin.
 - 1) S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.
- B. Ferrous Metal, Galvanized-Metal, and Aluminum Substrates:
 - 1. Water-Based Light Industrial Coating System:
 - a. Prime Coat: Primer, water based.
 - 1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.
 - b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
 - c. Topcoat: Light industrial coating, exterior, water based eggshell.
 - 1) S-W Pro Industrial Eg-Shel Acrylic B66-660 Series, at 2.5 to 4.0 mils (0.064 to 0.102 mm) dry, per coat.
- C. Wood Substrates: Including exposed wood items not indicated to receive shop-applied finish.
 - 1. Latex System:
 - a. Prime Coat: Primer, latex for exterior wood.
 - 1) S-W Exterior Latex Primer, B42, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry, per coat.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, satin.
 - 1) S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

SECTION 09 91 23

INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints (PT-#)
- C. Materials for back priming woodwork.
- D. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Steel and iron.
 - 2. Wood.
 - 3. Gypsum board.

1.02 RELATED REQUIREMENTS:

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 DEFINITIONS

- A. MPI Gloss Level 1 (Flat or Matte): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3 (Eggshell): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 5 (Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D 523.

1.04 ACTION SUBMITTALS

- A. Product Data
 - 1. For each type of product, include the following:
 - a. Preparation requirements and application instructions.
 - b. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - c. Product list cross-referenced to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. For all paints and coatings, provide manufacturer's documentation indicating compliance with the following requirements as detailed in Part 2:
 - a. General Emissions Evaluation
 - b. VOC Content Requirements for Wet Applied Products.
 - c. Paint Content Restrictions.
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.

1.05 INFORMATIONAL SUBMITTALS

- A. Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm) with all content characterized and screened.
 - 1. For each product, provide one of the following documents:
 - a. Health Product Declaration (HPD)

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1.06 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. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.07 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- B. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
 - b. Other Items: Architect will designate items or areas required.
 - 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.09 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. <u>Sherwin-Williams Company (The)</u>.
- B. Substitutions: See Section 01 60 00 Product Requirements.

2.02 PAINT, GENERAL

- A. MPI Standards:
 - 1. Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
 - 2. All paints and coatings to meet MPI X-Green Performance Standards except where otherwise indicated.
- B. Material Compatibility:

- 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. General Emissions Evaluation: Products must be compliant with the California Department of Public Health (CDPH) Standard Method v1.1–2010 or later version.
 - 1. Compliance to be confirmed with one of the following certifications:
 - a. UL GreenGuard Gold.
 - b. SCS Indoor Advantage Gold.
 - c. Master Painters Institute (MPI) Extreme Green (X-Green).
 - d. Green Wise Gold.
 - e. Compliance with CHPS (Collaborative for High Performance Schools).
- D. VOC Content Requirements for Wet Applied Products:
 - All paints and coatings wet-applied on site must meet the applicable VOC limits of the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective February 5, 2016, except as follows:
 - a. All interior paints and coatings, including colorants and tints, shall not exceed the limits defined below, measured in grams per liter (g/L) less water and less exempt compounds:
 - 1) Flat: 10
 - 2) Non-Flat: 10
 - 3) Primers: 10, except as allowed by specified MPI Number.
 - 4) Colorants do not increase the VOC content of the base paint when tinted.
- E. Paint Content Restrictions
 - 1. All interior paints and coatings must be free of alkylphenol ethoxylates (APEs).
 - a. This means paint products do not contain intentionally added or unintentionally added/residual APEs (above 100 ppm)
 - 2. All paints and coatings must be free of antimicrobial products.
 - a. Antimicrobials added to materials or products for the sole purpose of preserving the product are exempt from this restriction.
 - 3. Compliance with above restrictions to be confirmed with one of the following documents:
 - a. Green Seal Paint Standard GS-11 Certification, Green Seal, Inc.
 - b. Material Ingredients Disclosure Documentation indicating product is Red List Free.
 - c. Manufacturer's signed letter of confirmation.
- F. Provide products with Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm), with all content characterized and screened, to be verified through the HPD or Declare Label.
- G. Colors: As indicated in a color schedule, on the Material ID sheet in the Drawings.

2.03 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
 - 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 - 2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

2.04 PRIMERS/SEALERS

- A. Interior Latex Primer/Sealer: MPI #149 X-Green.
 - 1. VOC Content: E Range of E3 (<11g/L).
 - 2. Environmental Performance Rating: EPR 3.

2.05 WOOD PRIMERS

- A. Interior Latex-Based Wood Primer: MPI #137 X-Green.
 - 1. VOC Content: E Range of E3 (<51g/L).
 - 2. Environmental Performance Rating: EPR 3.

2.06 METAL PRIMERS

- A. Primer, Rust-Inhibitive, Water Based: MPI #107 X-Green.
 - 1. VOC Content: E Range of E3 (<51g/L).
 - 2. Environmental Performance Rating: EPR 3.
- B. Primer, Galvanized, Water Based: MPI #134 X-Green.
 - 1. VOC Content: E Range of E3 (<51g/L).
 - 2. Environmental Performance Rating: EPR 3.

2.07 BLOCK FILLERS

- A. Block filler, latex, interior/exterior, MPI #4 X-Green.
 - 1. VOC Content: E Range of E3 (<51g/L).

2.08 WATER-BASED PAINTS

- A. Flat (MPI Gloss Level 1) MPI #143 X-Green
 - 1. VOC Content: E Range of E3 (<11g/L).
 - 2. Environmental Performance Rating: EPR 4.
- B. Eggshell (MPI Gloss Level 3) MPI #145 X-Green
 - 1. VOC Content: E Range of E3 (<11g/L).
 - 2. Environmental Performance Rating: EPR 4.5.
- C. Semi-gloss (MPI Gloss Level 5), MPI #147 X-Green
 - 1. VOC Content: E Range of E3 (<11g/L).
 - 2. Environmental Performance Rating: EPR 5.5.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMUs): 12 percent.
 - 3. Wood: 15 percent.
 - 4. Gypsum Board: 12 percent.

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- 5. Plaster: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Plaster Substrates: Verify that plaster is fully cured.
- E. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:
 - 1. SSPC-SP 2.
 - 2. SSPC-SP 3.
 - 3. SSPC-SP 7/NACE No. 4.
 - 4. SSPC-SP 11.
- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.03 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed in equipment rooms:
 - a. Equipment, including panelboards and switch gear.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Tanks that do not have factory-applied final finishes.
 - h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - 2. Paint the following work where exposed in occupied spaces:
 - a. Equipment, including panelboards.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - h. Other items as directed by Architect.
 - 3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.04 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.05 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.06 INTERIOR PAINTING SCHEDULE

- A. Steel Substrates:
 - 1. Institutional Low-Odor/VOC Latex System MPI INT 5.1S:
 - a. Prime Coat: Primer, rust inhibitive, water based MPI #107 X-Green.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147 X-Green.
- B. Galvanized-Metal Substrates:
 - 1. Institutional Low-Odor/VOC Latex System MPI INT 5.3N:
 - a. Prime Coat: Primer, galvanized, water based, MPI #134 X-Green.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147 X-Green.
- C. Wood Substrates:
 - 1. Institutional Low-Odor/VOC Latex System MPI INT 6.3V:
 - a. Prime Coat: Primer, latex, for interior wood, MPI #137 X-Green.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145 X-Green.
- D. Gypsum Board and Plaster Substrates:
 - 1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
 - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149 X-Green.
 - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
 - c. Topcoat: Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145 X-Green.

SECTION 10 28 00

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories: for toilet rooms, utility rooms, and rooms with sinks; including, but not limited to:
 - 1. Combination Toilet Paper Dispenser (TA-2)
 - 2. Combination Towel Dispenser (TA-9)
 - 3. Soap Dispenser (TA-11)
 - 4. Coat Hook (TA-19, TA-20)
 - 5. Diaper Changing Station (TA-24)
 - 6. Sharps Disposal (TA-25)

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 Rough Carpentry: Concealed supports for accessories, including blocking.
- B. Section 08 80 00 Glazing: Frameless mirrors.

1.03 REFERENCE STANDARDS

- A. ADA Standards Americans with Disabilities Act (ADA) Standards for Accessible Design.
- B. ASTM A269/A269M Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
- C. ASTM A666 Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.05 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- C. Schedule: submit schedule listing accessories, by room, with quantities and sizes.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. BASIS OF DESIGN: See individual items for Basis of Design product(s).
 - 1. Provide Basis of Design manufacturer listed below , or a standard or custom product from one of the other listed manufacturers with equivalent performance, material properties, features, general configuration, appearance, and warranty.
 - 2. Proposed substitutions shall be similar to specified items in configuration and finish.
- B. Commercial Toilet, Shower, and Bath Accessories:
 - 1. AJW Architectural Products: www.ajw.com.
 - 2. ASI American Specialties, Inc: www.americanspecialties.com.
 - 3. Bradley Corporation: www.bradleycorp.com.
 - 4. BASIS OF DESIGN (TA-2, TA-9, TA-11, TA-25): Bobrick
 - 5. BASIS OF DESIGN (TA-19, 20): Hafele
 - 6. BASIS OF DESIGN (TA-24): ASI

- 7. Substitutions: Section 01 60 00 Product Requirements.
- C. Provide products of each category type by single manufacturer.

2.02 MATERIALS

- A. Accessories General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.
- B. Keys: Provide four keys for each accessory to Owner; master key lockable accessories.
- C. Stainless Steel Sheet: ASTM A666, Type 304.
- D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
- E. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Stainless Steel: Satin finish.
- B. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 PUBLIC TOILET ROOM ACCESSORIES

- A. All toilet room Accessories: As indicated in Material/Product ID List in the Drawings.
- B. Substitutions: Section 01 60 00 Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.
- D. Verify installation of blocking, reinforcing plates, and concealed anchors in walls, and ceilings.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations. see also mounting height chart in drawings.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

SECTION 12 36 00

COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work:1. Solid Surface (SSF-1)
- b. Accessories, including:
 - 2. Grommets (MA-10).

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 Rough Carpentry; installation of concealed blocking
- B. Section 06 41 00 Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 American National Standard for Particleboard.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.
- D. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards, U.S. Version 3.0.
- E. NSI (DSDM) Dimensional Stone Design Manual, Version VIII.

1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:1. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- E. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Natural Stone Institute (NSI) Accredited Natural Stone Fabricator; www.naturalstoneinstitute.org/#sle.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.
- C. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver countertops until painting and similar operations that could damage countertops have been completed in installation areas.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

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

1.08 WARRANTY

A. Correct defective work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.
- B. Solid Surface Countertops (SSF-1): Sheet or slab of solid surface over continuous substrate.
 - 1. Flat Sheet Thickness: ½ inch
 - 2. Manufacturer List: Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications.
 - a. Manufacturers:
 - 1) **BASIS OF DESIGN:** Corian by DuPont
 - 2) Substitutions: See Section 01 60 00 Product Requirements.
 - b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with NSI (DSDM).
 - c. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - d. Finish on Exposed Edges: Honed.
 - e. Color and Pattern: As indicated in Material / Product ID List in Drawings.
 - 3. Exposed Edge Treatment: Built up to minimum 3/4 inch thick; square edge.
 - 4. Back and End Splashes: Same sheet material, thicknesses as detailed, square top; height as indicated in Drawings.
 - 5. Skirts: As indicated on drawings.
 - 6. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 Countertops, Premium Grade.

2.02 MATERIALS

- A. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment; not coated, laminated or of composite construction; meeting following criteria.
- B. Flammability: Class 1 and A when tested to UL 723.
- C. Adhesive for Bonding to Other Products: One component silicone to ASTM C920.
- D. Sealant: A standard mildew-resistant, FDA/UL[®] [and NSF/ANSI 51 compliant in Food Zone area,] recognized silicone color matched sealant or clear silicone sealants.
- E. Sink/Bowl Mounting Hardware: Manufacturer's approved bowl clips, brass inserts and fasteners for attachment of undermount sinks/bowls.
- F. Heat Reflecting Tape: Manufacturer's standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.

- G. Grommets (MA-10): Round stainless steel grommets for cut-outs with matching flip-top stainless steel caps with slot for wire passage
 - 1. Size: 2 1/2 inch hole, nominal.
 - 2. Finish/Color: satin chrome (24D)
 - 3. Manufacturer: Doug Mockett EDP-5 2-1/2"

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - a. Rout a 1/8 inch drip groove at underside of exposed overlapping edges, set back 1/2 inch from face of edge.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Solid Surfacing: Fabricate tops and wall panels up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
- C. Wall-Mounted Counters: Provide skirts, aprons, and braces as indicated on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

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

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Seal joint between back/end splashes and vertical surfaces.
 - 1. Where applied cove molding is not indicated use specified sealant.

3.04 TOLERANCES

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

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

A. Protect installed products until completion of project.

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