placentia
LIBRARY DISTRICT
Inspiration, Innovation and Imagination

AGENDA

PLACENTIA LIBRARY DISTRICT
BOARD OF TRUSTEES
UNUSUAL DATE MEETING

December 18, 2018
6:30 p.m.
History Room

Mission Statement:
Placentia Library District provides lifelong learning and reading opportunities that inspire, open minds, and bring our community together.

The Centennial Vision Statement:
The Vision of the Trustees is intended to help celebrate the 100-year anniversary of the District.

- We will be the place where the community "sees and experiences" the technical edge and premier programming.
- We will renovate and expand our Library.
- We will remain financially self-sufficient.
- We will seek strong community support.
- We will reach our community with an active marketing plan.
- We will increase the percentage of our operating budget that supports establishing the premier collection in Orange County.
- We will plan for maintaining our qualified and professional staff.

AGENDA DESCRIPTIONS: The Agenda descriptions are intended to give members of the public notice and a general summary of items of business to be transacted or discussed. The Board may take any action which it deems to be appropriate on the Agenda and is not limited in any way by the notice of the recommended action.

REPORTS AND DOCUMENTATION: Reports and documentation relating to Agenda items are on file in the Administrative Office and the Reference Department of Placentia Library District, and are available for public inspection. A copy of the Agenda packet will be available for use during the Board Meetings. Any person having any question concerning any Agenda item may call the Library Director at 714-528-1925, Extension 200.

PLEDGE OF ALLEGIANCE Library Board President

CALL TO ORDER

1. Call to Order — Library Board President
2. Roll Call — Recorder
3. Adoption of Agenda
   This is the opportunity for Board members to delete items from the Agenda, to continue items, to re-order items, and to make additions pursuant to Government Code Section 54954.2(b).
   Presentation: Library Director
   Recommendation: Adopt by Motion

4. Oral Communications
Members of the public may address the Library Board of Trustees on any matter within the jurisdiction of the Board. Presentations by the public are limited to 5 minutes per person. Members of the public are also permitted to address the Library Board of Trustees on specific Agenda Items before and at the time that an Item is being considered by the Board. Action may not be taken on items not on the Agenda except in emergencies or as otherwise authorized. Reference: California Government Code Sections 54954.3, 54954.2(b).

TRUSTEE & ORGANIZATIONAL REPORTS

5. Board President Report - oral
The President makes announcements of general interest to the community and the Library Board of Trustees as well as conducting any ceremonial matters.

6. Trustee Reports
The Trustees make announcements of general interest to the community and the Library Board of Trustees, and report on meetings attended on behalf of the Board of Trustees.

7. Library Director Report

8. Placentia Library Friends Foundation Board of Director's Report

CONSENT CALENDAR (Items 9 – 22)

Presentation: Library Director
Recommendation: Approve by Motion

Items 9 – 22 may be considered together as one motion to approve the Consent Calendar. Items may be removed for individual consideration before the Consent Calendar is adopted. Items removed must then each have a separate motion.

MINUTES (Item 9)

9. Minutes of the November 19, 2018 Library Board of Trustees Meeting. (Receive & File and Approve)

CASH FLOW ANALYSIS (Items 10 – 11)

10. Check Register for November 2018. (Receive & File and Approve)

11. FY2018-2019 Cash Flow Analysis through November 2018; the Schedule of Anticipated Property Tax Revenues for FY2018-2019 as provided by the Orange County Auditor. (Receive & File).

TREASURER'S REPORTS (Items 12 – 15)

12. Financial Reports for November 2018 for Placentia Library District Accounts on Deposit with the Orange County Treasurer. (Receive & File)

13. Balance Sheet for November 2018. (Receive & File)

14. Acquisitions Report for November 2018. (Receive & File)

15. Entrepreneurial Activities Report for November 2018. (Receive & File)

GENERAL CONSENT REPORTS (Items 16 – 18)

16. Personnel Report for November 2018. (Receive, File, and Ratify Appointments)

17. Circulation Report for November 2018. (Receive & File)

18. Review of Shared Maintenance Costs with the City of Placentia under the JPA. (Receive & File)

STAFF REPORTS (Items 19 – 22)

19. Administration Report for November 2018.

20. Children's Services Report for November 2018.

21. Adult Services Report for November 2018.

22. Placentia Library Web Site & Technology Report for November 2018.

PRESENTATION

23. Presentation of the 2018 Employee of the Year Award from President Carline to Victor Meza, Interim Library Assistant.

NEW BUSINESS

24. Presentation of Fiscal Year 2017-2018 Financial Audit White, Nelson, Diehl, Evans LLP.

25. Reports from library staff on their California Library Association experience and workshops.

26. Presentation of proposals for general contractor service for the centennial renovation project.

27. Presentation of proposals for printing service.

28. Discussion of Educational Assistance reimbursement requests from Fernando Maldonado, Interim Business Manager and Christie Hwang, Library Aide.

29. Updates of the centennial renovation project by Library Director Contreras.

30. Adoption of Resolution 18-03: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Establish the Board of Trustees Regular Meeting Dates for Calendar Year 2019.

31. Adoption of Resolution 18-04: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Certify the Appointments for the Office of Trustee of the Placentia Library District; Administration of the Oath of Office.

32. Election of Officers.

33. Appointment of Library Board Representatives for 2019 by the Board President:
Incumbents are italicized.
- Representative to Special District Local Area Formation Commission (LAFCO) – *Trustee Shkoler* and *Secretary Martin* as alternate.
- Representative to the Orange County Council of Governments – *Trustee DeVecchio.*
- Representative to the Placentia Library Friends Foundation (PLFF) – *President Carline* and *Secretary Martin* as alternate.
- Representative to the Independent Special District of Orange County – *Trustee Minter*
- Personnel Committee – *President Carline and Trustee Shkoler*
- Redevelopment Successor Agency Oversight Board – *Trustee Shkoler*

ADJOURNMENT

34. Agenda Preparation for the January Date Meeting which will be held on January 21, 2019 at the Placentia Chamber of Commerce office, located at 117 N. Main Street, unless re-scheduled by the Library Board of Trustees.

35. Review of Action Items.
No action or discussion shall be taken on any item not appearing on the posted Agenda, unless authorized by law.

36. Adjourn

**********CERTIFICATION OF POSTING**********

I, Alyssa Stolze, Administrative Assistant of the Placentia Library District, hereby certify that the Agenda for the December 18, 2018 Unusual Date Meeting of the Library Board of Trustees of the Placentia Library District was posted on December 14, 2018.

Alyssa Stolze, Administrative Assistant

PLACENTIA LIBRARY DISTRICT
REGULAR DATE MEETING OF THE BOARD OF TRUSTEES
NOVEMBER 19TH, 2018

CALL TO ORDER

President Carline called the Regular Date Meeting of the Placentia Library District (PLD) Board of Trustees to order on November 19th, 2018 at 6:34 pm.

Members Present: President Gayle Carline, Secretary Jo-Anne Martin, Trustee DeVecchio, Trustee Al Shkoler

Members Absent: Trustee Elizabeth Minter

Staff Present: Jeanette Contreras, Library Director; Yesenia Baltierra, Public Services Manager; Timothy Hino, Business Manager; Jon Legree, Technology Manager; Alyssa Stolze, Administrative Assistant

Guests: Marc Davis, DavisFarr

ADOPTION OF AGENDA

It was motioned by Trustee Shkoler and seconded by Secretary Martin to adopt the Agenda (Item 3).

AYES:	Carline, Martin, DeVecchio, Shkoler
NOES:	None
ABSENT:	Minter

ORAL COMMUNICATION

(Item 4).

BOARD PRESIDENT REPORT

President Carline attended two Joint Use Agreement meetings, the Prayer Breakfast, and the Staff Appreciation Dinner.

TRUSTEE & ORGANIZATIONAL REPORTS

Secretary Martin attended the Veteran's Village Groundbreaking Ceremony and noted what a terrific event it was.

Trustee DeVecchio attended the Veteran's Village Groundbreaking Ceremony and the Staff Appreciation Dinner.

Trustee Shkoler attended the Staff Appreciation Dinner.

Trustee Minter was absent.

LIBRARY DIRECTOR REPORT

Library Director Contreras attended the Staff Appreciation Dinner, Prayer Breakfast, met with PLFF and their fundraising consultant, attended the California Special District's conference, met with the Valencia High School principal to discuss partnership with ValTech and the new makerspace, and reported out on the success of the Teens' Haunted Maze event.

FRIENDS FOUNDATION REPORT

President Sherri Dahl reported out on the transferring of duties since some members resigned, has been meeting and working with Director Contreras for fundraising, and PLFF is planning the Author's Luncheon.

CONSENT CALENDAR

It was moved by Trustee Shkoler and seconded by Trustee DeVecchio to approve Agenda Item 9-22. A roll call vote was taken:

AYES:	Carline, Martin, DeVecchio, Shkoler, Minter
NOES:	None
ABSENT:	None

MINUTES FOR THE JUNE 18TH, 2018 BOARD MEETING

Minutes for the October 15th, 2018 Board of Trustees Meeting were received, approved, and filed. (Item 9)

CASH FLOW ANALYSIS and TREASURER'S REPORTS

Check Registers for October 2018 – received and filed (Item 10)
Fund 707 Balance Report for October 2018 – received and filed (Item 11)

Financial Reports through October 2018 for Placentia Library District Accounts on Deposit with the Orange County Treasurer and Placentia Library District General Ledger: Summary of Cash and Investments. (Item 12)

Balance Sheets for October 2018 – received and filed. (Item 13)
Acquisitions Report for October 2018 – received and filed. (Item 14)
Service Revenue Report for October 2018– received and filed. (Item 15)

GENERAL CONSENT REPORTS

Personnel Report for October 2018 – received and filed. (Item 16)
Circulation Report for October 2018 – received and filed. (Item 17)
Review of Shared Maintenance Costs with the City of Placentia – received and filed. (Item 18)

STAFF REPORTS

Administration Report for October 2018 (Item 19)
Children's Services Report for October 2018 (Item 20)
Adult Services Report for October 2018 (Item 21)
Placentia Library Website Technology Report for October 2018 (Item 22)

CLOSED SESSION

President Carline reported out on the closed session held prior to the meeting. The Board convened for the annual review of Library Director Jeanette Contreras and agreed on a ten percent raise, which would include the 2% COLA. Retro-payment from September 8th would also be included.

MR. MARC DAVIS FROM DAVISFARR WILL PRESENT AN ACCOUNTING AUDIT OF

Mr. Marc Davis from Davis Farr presented his findings on the analysis of past invoices and shared costs between the City of Placentia and the District. Mr. Davis answered questions from the Board and provided further clarification where needed.

THE PLACENTIA LIBRARY DISTRICT'S PAYABLES.

REVIEW THE PLACENTIA LIBRARY DISTRICT'S CURRENT CREDIT CARD MERCHANT AND AUTHORIZE A CHANGE AS PRESENTED.

Director Contreras presented the staff recommendation for the District to terminate the credit card account with Bank of the West and establish a new account with Umpqua. Director Contreras explained how the services provided by Umpqua includes personal and commercial banking products and services including financing options such as lines of credit, equipment, and real estate. Secretary motioned to approve changing the Placentia Library District's current credit card merchant from Bank of the West to Umpqua and was seconded by Trustee DeVecchio.

AYES:	Carline, Martin, DeVecchio, Shkoler
NOES:	None
ABSENT:	Minter

ADOPT RESOLUTION 18-02: A RESOLUTION OF THE BOARD OF TRUSTEES OF THE PLACENTIALIBRARY DISTRICT OF ORANGE COUNTY TO AMEND THE FISCAL YEAR 2017-2019 BUDGET FOR THE PLACENTIA LIBRARY DISTRICT OF ORANGE COUNTY.

Director Contreras requested the approval for the Board to amend the 2017-2019 budget so it would include the approved cost of the Renovation and Energy efficiency projects. This amendment includes an overall budget of $3.8 million, which includes the renovation cost. Overall, there would be a $70,000 increase to the budget. Business Manager Tim Hino and Director Contreras answered additional questions from the Board followed by the motion to adopt Resolution 18-02: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Amend the Fiscal Year 2017-2019 Budget for the Placentia Library District of Orange County by Trustee DeVecchio and seconded by Secretary Martin.

AYES:	Carline, Martin, DeVecchio, Shkoler
NOES:	None
ABSENT:	Minter

AUTHORIZE A CLOSURE ON NOVEMBER 30, 2018 FOR A STAFF DEVELOPMENT DAY TO DISCUSS AND DEVELOP THE 2019-2021 FISCAL YEARS BUDGET.

Director Contreras presented the request to close the District for staff to convene to discuss the upcoming budget cycle. The request for the closure on November 30th, 2018 would be to allow staff to develop the Fiscal Year 2019-2021 Budget for budget work sessions with the Library Board of Trustees in the coming months. It was motioned to authorize a closure on November 30th, 2018 for Staff Development Day by Trustee Shkoler and seconded by Secretary Martin.

AYES:	Carline, Martin, DeVecchio, Shkoler
NOES:	None
ABSENT:	Minter

LIBRARY DIRECTOR WILL PROVIDE AN UPDATE ON THE RENOVATION AND ENERGY EFFICIENCY PROJECT PROGRESS.

Director Contreras presented the Board with an update on the renovation and energy efficiency projects process. This update included the current status of the removal of the HVAC, roofing timeline, and current staff workplaces.

ESTABLISH A COMMITTEE TO DEVELOP A CENTENNIAL COMMEMORATIVE BOOK.

Director Contreras presented the opportunity to the Board to pursue the creation of a Centennial Commemorative Book that would include photos and captions of the District throughout the past one hundred years. It was motioned by Secretary Martin to create an AD-HOC committee to investigate the cost and involvement of taking on the project, with President Carline and Trustee Shkoler as the committee members, to decide if they would like to move forward with the Book. It was seconded by Trustee Shkoler.

AYES:	Carline, Martin, DeVecchio, Shkoler
NOES:	None
ABSENT:	Minter

REVIEW OF ACTION ITEMS

The next Board Meeting will be held on Tuesday, December 18th, 2018 at 6:30 p.m. in the History Room.

ADJOURNMENT

The Board of Trustees Regular Date Meeting of November 19th, 2018 was adjourned at 7:53 p.m.

Gayle Carline, President
Library Board of Trustees

Jo-Anne W. Martin, Secretary
Library Board of Trustee

Placentia Library District
Check Register
November 2018

Type	Date	Num	Name	Memo	Amount
Bill Pmt -Check	11/05/2018	10147	Alyssa Stolze	Reimbursement	-132.07
Bill Pmt -Check	11/05/2018	10148	Baker & Taylor	Books	-550.32
Bill Pmt -Check	11/05/2018	10149	BankCard Center-Bank of the West	VOID: Check not received for September 2018 c	0.00
Bill Pmt -Check	11/05/2018	10150	Cintas	Cleaning Supplies	-279.14
Bill Pmt -Check	11/05/2018	10151	City of Placentia	September 2018 Mariposa Landscapes	-1,492.67
Bill Pmt -Check	11/05/2018	10152	Coleen Wakai	Literacy Outreach and Mileage Reimbursement	-48.43
Bill Pmt -Check	11/05/2018	10153	Davis Farr LLP	City Invoice Analysis & Findings	-984.55
Bill Pmt -Check	11/05/2018	10154	Fernando Maldonado	Halloween Teen Event	-963.20
Bill Pmt -Check	11/05/2018	10155	Golden State Water Company	9/20-10/18/18 Services	-606.43
Bill Pmt -Check	11/05/2018	10156	Jeanette Contreras	CLA 2018 Hotel and Car Authorizations	-2,767.81
Bill Pmt -Check	11/05/2018	10157	Kiwanis Club of Placentia	AD Space 1 & 21 Listing	-1,200.00
Bill Pmt -Check	11/05/2018	10158	Midwest Tape	DVD's	-446.26
Bill Pmt -Check	11/05/2018	10159	O.C. Plumbing	Unclog and replace part on toilet in public area	-492.06
Bill Pmt -Check	11/05/2018	10160	Placentia-Yorba Linda Unified School Di	Posters for CLA	-5.17
Bill Pmt -Check	11/05/2018	10161	Placentia Women's Round Table	Prayer Breakfast 2018: G. Carline, J. Martin, A. S	-100.00
Bill Pmt -Check	11/05/2018	10162	Public Agency Retirement Services	For Payroll on 10/31/18	-2,181.34
Bill Pmt -Check	11/05/2018	10163	Yesenia Baltierra.	Reimbursement	-361.55
Check	11/05/2018	10164	Placentia Library District	For Payroll 11/14/18	-55,000.00
Bill Pmt -Check	11/05/2018	10165	BankCard Center-Bank of the West	Credit Card Payment for 9/29/18 to 10/28/18	-19,282.66
Bill Pmt -Check	11/13/2018	10166	Arcelia Janitorial Service	Services 10/1-10/31/18	-1,188.00
Bill Pmt -Check	11/13/2018	10167	Baker & Taylor	Books	-492.86
Bill Pmt -Check	11/13/2018	10168	Berger Transfer & Storage	VOID: Moving boxes into PODs for Storage on 1	0.00
Bill Pmt -Check	11/13/2018	10169	California Library Association	Institutional Membership for 2019	-750.00
Bill Pmt -Check	11/13/2018	10170	CALNET3	10/2-11/1/18 Phone	-125.64
Bill Pmt -Check	11/13/2018	10171	Glasby Maintenance Supply	Maintenance Supplies	-301.23
Bill Pmt -Check	11/13/2018	10172	Kathy Carn	Cardstock for C21	-19.38
Bill Pmt -Check	11/13/2018	10173	Midwest Tape	DVD's	-270.89
Bill Pmt -Check	11/13/2018	10174	Recorded Books Inc.	Audiobooks Oct 2018	-898.11
Bill Pmt -Check	11/13/2018	10175	Salazar Associates	C21 Pennants	-2,021.56
Bill Pmt -Check	11/13/2018	10176	SDRMA	Medical for December 2018	-21,124.20
Bill Pmt -Check	11/13/2018	10177	Staples Advantage	PO 381B	-64.65
Bill Pmt -Check	11/13/2018	10178	Minuteman Press	Heritage Parade Posters	-371.74
Bill Pmt -Check	11/19/2018	10179	Adriana Baltierra	Day of the Dead Program	-150.00
Bill Pmt -Check	11/19/2018	10180	Baker & Taylor	Books	-624.72
Bill Pmt -Check	11/19/2018	10181	Bear State	HVAC service on 10/22/18	-220.00
Bill Pmt -Check	11/19/2018	10182	Best Best & Krieger	Fee/Nexus Study Oct 2018	-613.97
Bill Pmt -Check	11/19/2018	10183	CALNET3	Internet 10/2/18-11/1/18	-238.48
Bill Pmt -Check	11/19/2018	10184	Cintas	Cleaning Supplies	-510.33
Bill Pmt -Check	11/19/2018	10185	Click Consulting	Managed Services Plan October 2018	-3,500.00
Bill Pmt -Check	11/19/2018	10186	Jeanette Contreras	Reimbursement for Car Rental for CLA	-445.18
Bill Pmt -Check	11/19/2018	10187	Legacy Integrative Solutions	Printing services	-583.51
Bill Pmt -Check	11/19/2018	10188	Mariposa Landscapes, Inc.	Main line break in Sept 2018	-2,284.00

Placentia Library District
Check Register
November 2018

Bill Pmt -Check	11/19/2018	10189	Midwest Tape	DVD's	-2,643.68
Bill Pmt -Check	11/19/2018	10190	O.C. Plumbing	Service on 11/2/18	-226.22
Bill Pmt -Check	11/19/2018	10191	Patriot Environmental Lab Services, Inc.	Asbestos Testing	-2,324.00
Bill Pmt -Check	11/19/2018	10192	Republic Services	Recycling Container Service 10/1-10/31/18	-144.30
Bill Pmt -Check	11/19/2018	10193	Unique Management Services, Inc.	Collection services October 2018	-80.55
Bill Pmt -Check	11/19/2018	10194	Wendy Amireh	CLA Reimbursement	-386.76
Bill Pmt -Check	11/19/2018	10195	White Nelson Diehl Evans LLP	FY 17/18 Audit	-3,000.00
Check	11/19/2018	10196	Placentia Library District	For payroll on 11/28/2018.	-60,000.00
Bill Pmt -Check	11/19/2018	10197	Jeanette Contreras	CLA 2018 Reimbursement (post trip)	-3,213.89
Bill Pmt -Check	11/19/2018	10198	Public Agency Retirement Services	PP 10/26/18-11/08/18	-2,192.67
Bill Pmt -Check	11/21/2018	10199	Woodruff, Spradlin & Smart	Construction Documents Legal Review Oct 2018	-1,017.18
Bill Pmt -Check	11/26/2018	10200	Baker & Taylor	Books	-337.75
Bill Pmt -Check	11/26/2018	10201	Berger Transfer & Storage	VOID: Additional work to redistribute POD's weig	0.00
Bill Pmt -Check	11/26/2018	10202	Capitol Door Services	PM Service 3 of 4	-160.00
Bill Pmt -Check	11/26/2018	10203	Cintas	Cleaning Supplies	-270.42
Bill Pmt -Check	11/26/2018	10204	City of Placentia	Invoice for August through September 2018	-13,515.64
Bill Pmt -Check	11/26/2018	10205	Dick's Lock & Safe	Keys for JCI	-44.00
Bill Pmt -Check	11/26/2018	10206	Midwest Tape	DVD's	-852.10
Bill Pmt -Check	11/26/2018	10207	OverDrive	E-Books	-399.99
Bill Pmt -Check	11/26/2018	10208	PODS Enterprises, LLC	Storage Units	-340.76
Bill Pmt -Check	11/26/2018	10209	SoCalGas	Gas for 10/17-11/15/18	-46.15
Bill Pmt -Check	11/26/2018	10210	Berger Transfer & Storage	POD Weight Redistribution for Storage on 11/26/	-469.00
Bill Pmt -Check	11/26/2018	10211	Jon Legree	Reimbursement for CLA	-459.70
					-215,816.87

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

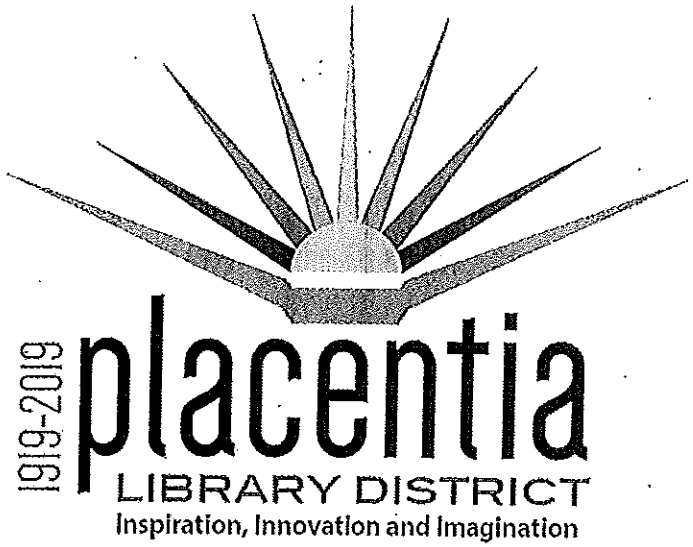
FROM: Fernando Maldonado, Interim Business Manager

SUBJECT: **Fund Balance Report through November 2018 for Placentia Library District Fund 9LX with Orange County Treasurer**

DATE: December 18, 2018

Fiscal Year 2018-2019	
07/31/2018	2,515,468.78
8/31/2018	2,518,547.43
9/30/2018	2,521,728.47
10/31/2018	2,325,166.55
11/30/2018	2,328,648.65
12/31/2018	
01/31/2019	
2/28/2019	
3/31/2019	
04/30/2019	
5/31/2019	
6/30/2019	

Fiscal Year 2017-2018	
07/31/2017	2,491,457.82
8/31/2017	2,493,625.46
9/30/2017	2,495,857.28
10/31/2017	2,498,084.78
11/30/2017	2,500,309.42
12/31/2017	2,502,508.82
01/31/2018	2,502,381.29
2/28/2018	2,502,253.65
3/31/2018	2,504,538.94
04/30/2018	2,509,766.98
5/31/2018	2,512,623.18
6/30/2018	2,512,581.20



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Financial Reports through November 2018 for the Placentia Library District Accounts on Deposit with the Orange County Treasurer and the Placentia Library District General Ledger**

DATE: December 18, 2018

Summary of Cash and Investments as of November 30, 2018

Cash with Orange County Treasurer Fund 9LX	**2,328,648.65**
General Fund Checking – Bank of the West	**380,049.62**
General Fund Savings – Bank of the West	**698,383.41**
(Impact Fees in Savings – Restricted)	*$631,598.33*
Payroll Checking – Wells Fargo Bank	**$9,059.87**
Total Cash and Investments	**3,416,141.55**

I hereby certify that the investments are in compliance with Placentia Library District Policy 3035 – Investment of District Funds, as adopted by the Library Board of Trustees, and California Government Code Section 53646(b)(1); and that Placentia Library District has the ability to meet its budgeted expenditures for the next six(6) months.

Jeanette Contreras
Library Director

1919-2019 placentia
LIBRARY DISTRICT
Inspiration, Innovation and Imagination

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PLACENTIA L... ARY DISTRICT
YTD REVENUE REPORT
As of November 30, 2018

Acct #	DESCRIPTION		BUDGET (AMENDED)	YTD ACTUAL	BALANCE	PERCENT % RECEIVED
PROPERTY TAX REVENUE						
4010	Property Taxes - Current Secured		2,353,852	11,447	(2,342,405)	0.5%
4020	Property Taxes - Current Unsecured		63,270	43,843	(19,427)	69.3%
4030	Property Taxes - Prior Secured		0	-	0	0.0%
4040	Property Taxes - Prior Unsecured		0	-	0	0.0%
4050	Property Taxes - Curr Supplemental		72,162	17,490	(54,672)	24.2%
4060	Property Taxes - Prior Supplemental		0	0	0	23.0%
4070	Interest on Unspport Tax		0	-	0	0.0%
4080	Penalties & Costs on Delinq Taxes		1,113	16,061	14,947	1442.4%
4090	Taxes Special Dist Augmentation		9,538	-	(9,538)	0.0%
4190	State - Homeowners Property Tax Relief		51,177	-	(51,177)	0.0%
		Sub Total	2,551,113	88,841	(2,462,273)	3.5%
INTEREST REVENUE						
4600	Interest		8,500	16,196	7,696	190.5%
		Sub Total	8,500	16,196	7,696	190.5%
GRANT REVENUE						
4210	State Grants		30,000	18,000	(12,000)	60.0%
4230	Other Grants		20,000	-	(20,000)	0.0%
		Sub Total	50,000	18,000	(32,000)	36.0%
MISCELLANEOUS REVENUES						
4420	Newsletter Ads		700	-	(700)	0.0%
4410	PLFF Grants		38,310	19,429	(18,881)	50.7%
4430	Other Revenue		0	15,286	15,286	1528559.0%
4440	Centennial Renovation		1,500,000	-	(1,500,000)	0.0%
4310	Fines & Fees		16,594	7,306	(9,288)	44.0%
4330, 4320	Passport/Photos		189,500	83,609	(105,891)	44.1%
4340	Meeting Room Fees		0	340	340	34000.0%
4350	Test Proctor		2,500	3,550	1,050	142.0%
		Sub Total	1,747,604	129,520	(1,618,084)	7.4%
4500	Impact Fees		90,000	556	(89,444)	0.6%
	TOTAL REVENUES YTD FOR FY 18/19:		4,447,217	253,112	(4,194,105)	5.7%
	Total Revenue without Renovation Revenue		$2,947,217	$253,112	($2,694,105)	8.6%

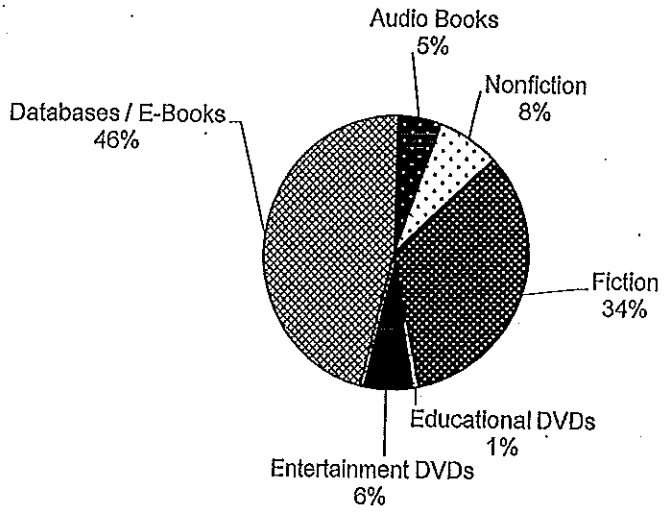
PLACENTIA LIBRARY DISTRICT
EXPENDITURES REPORT
November 30, 2018
41.66% of the year completed

ACCOUNT	DESCRIPTION	APPROPRIATIONS (AMENDED)	EXPENDED	CURRENT	REMAINDER
SALARIES & EMPLOYEE BENEFITS					
5010, 5020	Salaries & Wages	1,513,099	600,575	0.40	$912,524
5030	Retirement	58,553	21,937	0.37	$36,616
5040	Unemployment Insurance	4,000.00	-	0.00	$4,000
5050	Health Insurance	297,502	99,437	0.33	$198,065
5064	Dental Insurance	17,796	5,481	0.31	$12,315
5060	Life Insurance	5,603	1,390	0.25	$4,213
5066	AD & D Insurance	8,720	2,498	0.29	$6,222
5068	Vision Insurance	3,441	1,103	0.32	$2,338
5090	Employee Assistance Program	12,000	2,922	0.24	$9,078
5070	Workers' Compensation Insurance	13,768	1,900	0.14	$11,868
	TOTAL	$1,934,482	$737,244	0.38	$1,197,238
SERVICES & SUPPLIES					
5100	Communications	9,120	1,947	0.21	$7,173
5170	Household Expenses	15,000	7,686	0.51	$7,314
5099	Library Insurance	17,000	5,467	0.32	$11,533
5205	Maintenance Expense	25,000	9,361	0.37	$15,639
5220-5280, 5160, 5180, 5210	Maintenance, Buildings & Improvements	75,000	35,048	0.47	$39,952
5290	Memberships	9,000	4,689	0.52	$4,311
5300,5310,5350	Office Expenses & Postage	77,500	25,725	0.33	$51,775
5400	Prof/Specialized Services	204,950	59,548	0.29	$145,402
5495	Programs	52,067	1,586	0.03	$50,481
5500	Books/Library Materials	352,000	70,221	0.20	$281,779
5600	Meetings/Professional Development	44,640	25,406	0.57	$19,234
5700	Mileage/Parking	1,600	571	0.36	$1,029
5800	Utilities	59,858	23,648	0.40	$36,210
	TOTAL	$942,735	$270,904	0.29	$671,831
	OPERATING EXPENSES	$2,877,217	$1,008,148	0.35	$1,869,069
FIXED ASSETS & TAXES					
1310	Building & Improvements	$30,000	-	0.00	$30,000
4200	Equipment & Furniture	$30,000	-	0.00	$30,000
6100	Taxes and Assessments	$10,000	8,513	0.85	$1,487
	TOTAL	$70,000	8,513	0.12	$61,487
CAPITAL PROJECT					
5211	Renovation	$4,100,000	474,109	0.12	$3,625,891
	TOTAL	$4,100,000	474,109	0.12	$3,625,891
TOTAL BUDGET		$7,047,217	$1,490,769	0.21	$5,556,448
	Total Expenses without Renovation Expenses	$2,947,217	$1,016,661	0.34	$1,930,556

Placentia Library District

ACQUISITIONS REPORT FOR FISCAL YEAR 2018-2019 THROUGH THE MONTH OF NOV. 2018

	YTD 2018/19	YTD 2018/19	YTD 20118/19	YTD 2017/18	YTD 2017/18	YTD 2017/18
	Amount	Titles	Volumes	Amount	Titles.	Volumes
Total Fiction	$20,660	557	615	$20,594	950	1094
Total Non-Fiction	$4,635	195	377	$13,571	455	694
Total Databases / E-Books	$28,401	140	0	$8,758	1	0
Total Audio Books	$3,279	72	72	$1,072	247	249
Total Educational DVDs	$425	12	12	$1,478	37	37
Total Entertainment DVDs	$3,968	110	159	$2,986	63	105
Total Library of Things	$0	0	0	$0	0	0
YTD TOTAL MATERIALS	$61,368	1086	1235	$48,459	1753	2179
Budget	$272,000			$255,689		
% Spent YTD	23%			19%		



The 2017-2018 materials budget was $255,689. The Library Board approved $79,387 to rollover into the 2018-2019 fiscal year materials budget.

ACQUISITIONS REPORT FOR FISCAL YEAR 2018-2019 THROUGH THE MONTH OF NOVEMBER 2018

Prepared by Katie Matas, Librarian I

	GENERAL FUND			ADOPT-A-BOOK/GRANT			TOTAL PURCHASED			DONATED			TOTAL ITEMS		
	Amount	Titles	Volumes	Amount	Titles	Volumes	Amount	Titles	Volumes	Value	Titles	Volumes	Amount	Titles	Volumes
Adult Fiction	$18,548	449	462	$0	0	0	$18,548	449	462	$243	8	8	$18,791	457	470
Total Adult Fiction	$18,548	449	462	$0	0	0	$18,548	449	462	$243	8	8	$18,791	457	470
Adult Non-Fiction	$4,196	178	200	$0	0	0	$4,196	178	200	$206	7	7	$4,402	185	207
Adult Reference	$275	6	6	$0	0	0	$275	6	6	$621	13	13	$896	19	19
Adult magazines	$0	0	159	$0	0	0	$0	0	159	$0	0	0	$0	0	159
Total Adult Nonfiction	$4,471	184	365	$0	0	0	$4,471	184	365	$827	20	20	$5,298	204	385
TOTAL ADULT PRINT MATERIALS	$23,019	633	827	$0	0	0	$23,019	633	827	$1,070	28	28	$24,089	661	855
Adult Music CDs	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Adult Audio Books	$3,279	72	72	$0	0	0	$3,279	72	72	$0	0	0	$3,279	72	72
Adult E-books	$5,255	115	0	$0	0	0	$5,255	0	0	$0	0	0	$5,255	0	0
Adult Educational DVDs	$425	12	12	$0	0	0	$425	12	12	$0	0	0	$425	12	12
Adult Entertainment DVDs	$2,867	64	107	$0	0	0	$2,867	64	107	$0	0	0	$2,867	64	107
Library of Things	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
TOTAL ADULT NON-PRINT MATERIALS	$11,826	263	191	$0	0	0	$11,826	263	191	$0	0	0	$11,826	263	191
TOTAL ADULT MATERIALS	$34,845	896	1,018	$0	0	0	$34,845	896	1,018	$1,070	28	28	$35,915	924	1,046
Young Adult Fiction	$468	29	29	$0	0	0	$468	29	29	$119	7	7	$587	36	36
Total Young Adult Fiction	$468	29	29	$0	0	0	$468	29	29	$119	7	7	$587	36	36
Young Adult Non-Fiction	$141	10	10	$0	0	0	$141	10	10	$0	0	0	$141	10	10
Young Adult Reference	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Total Young Adult Nonfiction	$141	10	10	$0	0	0	$141	10	10	$0	0	0	$141	10	10
TOTAL YOUNG ADULT PRINT MATERIALS	$609	39	39	$0	0	0	$609	39	39	$119	7	7	$728	46	46
Young Adult Audio Books	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Young Adult E-books	$486	19	0	$159	4	4	$645	23	4	$0	0	0	$645	23	4
Young Adult Video Games	$0	0	0	$0	0	0	$0	0	0	$751	30	30	$751	30	30
TOTAL YOUNG ADULT NON-PRINT MATERIALS	$486	19	0	$159	4	4	$645	23	4	$751	30	30	$1,396	53	34
Juvenile Fiction	$1,644	79	124	$0	0	0	$1,644	79	124	$257	20	21	$1,901	99	145
Total Juvenile Fiction	$1,644	79	124	$0	0	0	$1,644	79	124	$257	20	21	$1,901	99	145
Juvenile Non-Fiction	$23	1	1	$0	0	0	$23	1	1	$17	2	2	$40	3	3
Juvenile Reference	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Juvenile Magazines	$0	0	1	$0	0	0	$0	0	1	$0	0	0	$0	0	1
Total Juvenile Nonfiction	$23	1	2	$0	0	0	$23	1	2	$17	2	2	$40	3	4
TOTAL JUVENILE PRINT MATERIALS	$1,667	80	126	$0	0	0	1,667	80	126	$274	22	23	$1,941	102	149
Juvenile Music CDs	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Juvenile Audio Books	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Juvenile E-books	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Juvenile Educational DVDs	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
Juvenile Entertainment DVDs	$1,101	46	52	$0	0	0	$1,101	46	52	$0	0	0	$1,101	46	52
TOTAL JUVENILE NON-PRINT MATERIALS	$1,101	46	52	$0	0	0	$1,101	46	52	$0	0	0	$1,101	46	52
TOTAL JUVENILE MATERIALS	$2,768	126	178	$0	0	0	$2,768	126	178	$274	22	23	$3,042	148	201
Databases	$22,660	6	0	$0	0	0	$22,660	6	0	$0	0	0	$22,660	6	0
E-books	$5,741	134	0	$159	4	4	$5,900	138	4	$0	0	0	$5,900	138	4
TOTAL DATABASES / E-BOOKS	$28,401	140	0	$159	4	4	$28,560	144	4	$0	0	0	$28,560	144	4
Total Fiction	$20,660	557	615	$0	0	0	$20,660	557	615	$619	35	36	$21,279	592	651
Total Non-Fiction	$4,635	195	377	$0	0	0	$4,635	195	377	$844	22	22	$5,479	217	399
Total Databases / E-books	$28,401	140	0	$159	4	4	$28,560	144	4	$0	0	0	$28,560	144	4
Total Audio Books	$3,279	72	72	$0	0	0	$3,279	72	72	$0	0	0	$3,279	72	72
Total Educational DVDs	$425	12	12	$0	0	0	$425	12	12	$0	0	0	$425	12	12
Total Entertainment DVDs	$3,968	110	159	$0	0	0	$3,968	110	159	$751	30	30	$4,719	140	189
Total Library of Things	$0	0	0	$0	0	0	$0	0	0	$0	0	0	$0	0	0
TOTAL MATERIALS	$61,368	1086	1235	$159	4	4	$61,527	1090	1239	$2,214	87	88	$63,741	1177	1327

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

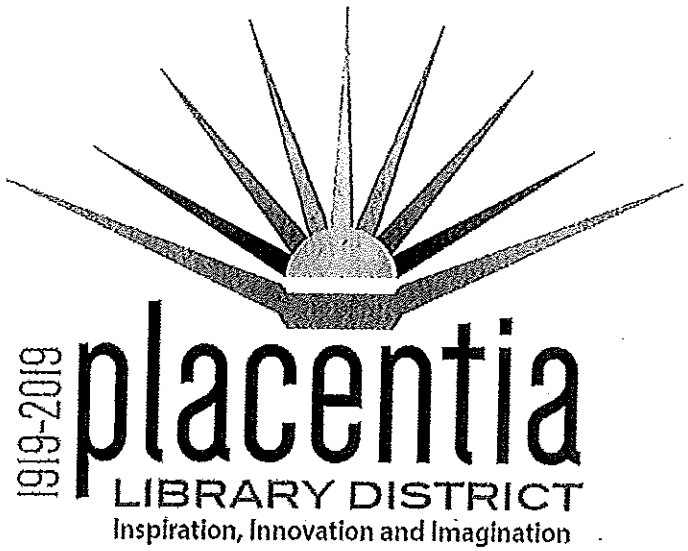
FROM: Fernando Maldonado, Interim Business Manager

SUBJECT: **Service Revenue Activities Report for November 2018**

DATE: December 18, 2018

Net Revenue Summary for November 2018

			YTD	YTD
	Nov-2018	Nov-2017	2018-2019	2017-2018
Passport	13,927.98	10,676.00	71,873.98	63,478.00
Passport Photos	2,305.30	2,772.00	11,735.10	16,618.00
Test Proctor	350.00	600.00	3,550.00	3,850.00
Fines & Fees	941.02	903.73	7,306.46	7,280.01
Meeting Room	0.00	60.00	340.00	960.00
Total	17524.30	15,011.73	94,805.54	92,186.01



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Fernando Maldonado, Interim Business Manager

SUBJECT: **Personnel Report for November 2018**

DATE: December 18, 2018

	Nov-18	Nov-17	YTD 2018-2019	YTD 2017-2018
Separation	1	1	2	2
Retirement	0	0	0	0
Appointments	0	0	1	4
Open Positions	1	2	1	5
Workers' Compensation Leave	0	0	0	0
Total	2	3	4	11

SEPARATION: Timothy Hino, Business Manager, Administration
RETIREMENT: None
APPOINTMENTS: None
OPEN POSITIONS: Business Manager, Administration

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Katie Matas, Librarian I

SUBJECT: Circulation Activity Report: **November 2018**

DATE: **December 18, 2018**

CIRCULATION	Nov-18	Nov-17		Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
New Patron Registrations	104	232		1,239	1,551	-20.1%
Total Circulation	9,036	21,434		98,481	120,369	-18.2%
Total Active Borrowers*	7,129	7,858				
Attendance	14,237	23,149		105,895	125,535	-15.6%
Adult Fiction	724	2,428		8,378	13,745	-39.0%
Adult Nonfiction	312	1,548		5,586	9,826	-43.2%
Adult Magazines	0	206		445	1,149	-61.3%
Adult Music CDs	3	63		97	462	-79.0%
Adult Audio Books	194	548		1,699	2,688	-36.8%
Adult DVDs	1,482	2,157		11,942	12,136	-1.6%
Library of Things (LOTs)	23	31		142	99	43.4%
YA Fiction	193	871		3,189	6,454	-50.6%
YA Nonfiction	31	93		357	527	-32.3%
YA Audio Books	0	0		-	-	0.0%
YA Video Games	73	58		306	366	-16.4%
JUV Fiction	5,005	9,537		36,779	54,776	-32.9%
JUV Nonfiction	261	2,352		5,524	12,583	-56.1%
JUV Magazines	0	6		30	20	0.0%
JUV Music CDs	0	29		61	111	-45.0%
JUV Audio Books	0	33		32	180	-82.2%
JUV DVDs	735	1,474		5,827	8,360	-30.3%

* YTD % change not applicable.

TEST PROCTORING

November 2018	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
9	12	74	75	-1%

PATRON COUNT

Gate Count				
Nov 2018	Nov 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
13,080	21,299	87,708	126,329	-44%

Outside Gate Counts	
Adult/Teen Programs	218
Children Programs	493
Outreach Events	446
Meeting Room Rentals	0
TOTAL	1157

Hours Open	Average Per Hour
228	57

Library Attendance Total
14,237

Closed 3 days: Veteran's, Thanksgiving, and Staff Development Day

PASSPORTS								
Nov. 2018	SUN	MON	TUES	WED	THURS	FRI	SAT	HOUR TOTALS
9:00		1		2	2	1	11	*17*
10:00		4	2	5	3	4	12	*30*
11:00		5	4	2	4	5	18	*38*
12:00		5	5	4	4	5	20	*43*
1:00	14	4	4	4	2	8	17	*53*
2:00	13	4	3	6	6	7	15	*54*
3:00	9	7	6		6	5	13	*46*
4:00		7	9	7	9	3	5	*40*
5:00		7	8	6	10			*31*
6:00		8	7	6	7			*28*
7:00		2		1				*3*
DAY TOTALS	*36*	54	48	43	53	38	*111*	***383***

Nov 2018	Nov 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
383	425	2035	2521	-24%

STAFF ACTIVITY

- Katie attended Friday Huddles on November 2nd, and 16th.
- Jon, Laura, Katie, Estella, and Tim participated in a Support Services meeting on November 27th.
- Jon, Katie, Beatrice, Laura, Estella, Eric, Danny, and Christie participated in Staff Development Day on November 30th.
- Victor became the interim Young Adult coordinator.
- Staff provided Setup/Take Down in the Plaza: 25 set-ups/ 25 breakdowns
- Meeting Room rentals patron count: 0 (renovation has started)

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Fernando Maldonado, Interim Business Manager

SUBJECT: **City of Placentia - Shared Maintenance Costs through November 2018**

DATE: December 18, 2018

CITY OF PLACENTIA INVOICES

PERIOD COVERED **FY 2017-2018**	INVOICE DATE	SO. CAL EDISON	TURF (Merchants)	GROUNDS (SA Aquatics)	AT&T	FACILITY MAINT	TOTAL
Jul-18	07/26/18	8,222.06	1,258.19	285.00	10.14	0.00	9,775.39
Aug-18	08/27/18	9,438.40		142.50	10.16	0.00	9,591.06
Sep-18	9/18/18	9,300.92	2,985.34	142.50	10.55	0.00	12,439.31
Oct-18	10/15/18	*	1,492.67	*	*	*	1,492.67
Nov-18	11/08/18	11,870.17	1,492.67	142.50	10.30	*	13,515.64
Dec-18							
Jan-19							
Feb-19							
Mar-19							
Apr-19							
May-19							
Jun-19							
	TOTAL	**$38831.55**	**$7,228.87**	**$712.50**	**$41.15**	**0.00**	**$46814.07**

**** City Billing Not Received***

PERIOD IN FY 2016-2017	*INVOICE DATE*	*SO. CAL EDISON*	*TURF*	*GROUNDS*	AT&T	*FACILITY MAINT*	*TOTAL*
Jul-17	*	*	*	*	*	*0.00*	*
Aug-17	*08-15-17*	*16,166.86*	*	*42.50*	*19.79*	*0.00*	*$16,229.15*
Sep-17	*09-20-17*	*8,558.53*	*1,452.49*	*	*	*0.00*	*$10,011.02*
Oct-17	*10-26-17*	*8,314.14*	*2,904.98*	*427.50*	*10.87*	*0.00*	*$11,657.49*
Nov-17	*11-21-17*	*5,075.75*	*	*	*9.59*	*0.00*	*$5,085.34*
Dec-17	*	*	*	+*	*	*0.00*	*
Jan-18	*01-16-18*	*8,800.12*	*1,452.49*	*285.00*	*8.10*	*0.00*	*$10,545.71*
Feb-18	*02-21-18*	*	*	*142.50*	*10.13*	*0.00*	*$152.63*
Mar-18	*03-28-18*	*9,310.29*	*	*142.50*	*	*0.00*	*$9,452.79*
Apr-18	*04-04-18*	*	*6,290.93*	*	*	*0.00*	*$6,290.93*
May-18	*05-15-18*	*4,556.81*	*2,516.38*	*285.00*	*30.52*	*0.00*	*$7,388.71*
Jun-18	*06-13-18*	*9,993.33*	*	*142.5*	*20.25*	*0.00*	*$10,156.08*
	TOTAL	*$70,775.83*	*14,617.27*	*1,467.50*	*109.25*	*0.00*	*$86,969.85*

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Administration Report for November 2018**

DATE: December 18, 2018

Meetings:

- Board Meeting – November 19th
- Friday Morning Huddles – November 2nd, 9th, 16st, 23rd and 30th
- Management Meeting- November 15th
- Staff Meeting – November 20th
- PLFF Board Meeting – November 19th
- Bodhi – November 28th
- Wells Fargo Bank – November 27th
- Conference Call Erik Mar- November 1st
- Marc Davis- November 6th
- JCI – November 29th
- Sal Addotta – November 13th
- PYLUSD Board Meeting – November 13th
- City of Placentia – November 14th
- Sherri Dahl & Robin Hoklotubbe – November 15th

Facilities:

- Movers- November 5th, 06th, 07th, 26th, and 27th
- Dick's Lock and Safe- November 7th
- Fire Master- November 8th
- Abatement Meeting- November 26th

Training / Conference:

- California Library Association November 7th, 8th, 9th, 10th, 11th, & 12th
- Webinar: Required Ethics AB 1234 Compliance Training November 13th
- Staff Development Day- November 30th

Events:

- Staff Appreciation & Recognition Dinner – November 3rd
- Prayer Breakfast – November 15th

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Yesenia Baltierra, Public Services Manager

SUBJECT: Children's Services Report for November 2018

DATE: **December 18, 2018**

MONTHLY STATISTICS

Program Statistics

Type of Program	Number of Programs November 2018	Total Attendance November 2018	Number of Programs November 2017	Total Attendance November 2017	Total Programs Y-T-D 2018-19	Total Attendance Y-T-D 2018-19	Total Programs Y-T-D 2017-18	Total Attendance Y-T-D 2017-18	% Change Programs Y-T-D 17/18-18/19	% Change Attendance Y-T-D 17/18-18/19
Storytime	9	337	11	422	52	2,290	62	2,650	-16.13%	-13.58%
Educational	11	156	18	459	50	989	66	1,732	-24.24%	-42.90%
Reading	1	67	2	137	11	1,644	19	1,945	-42.11%	-15.48%
ɔsonal Events	0	0	0	0	1	200	2	485	-50.00%	-58.76%
,tals	21	560	31	1,018	113	4,923	149	6,812	-24.16%	-27.73%

Reference/Computer Usage Statistics

	November 2018	November 2017	Y-T-D 2018-2019	Y-T-D 2017-2018	Y-T-D % change
Reference—in person	321	510	2,337	2,584	-9.56%
Reference--telephone	10	12	120	115	4.35%
Total Reference	**331**	**522**	**2,457**	**2,699**	-8.97%
*Children's computer usage	0	952	2449	5,230	-53.17%

*Public access computers currently available are designated as Adult computers. Children's computer usage is incorporated in Adult computer usage statistic.

ACHIEVEMENTS

- Lori Worden has continued her weekly outreach at Tynes Elementary School on Tuesdays and Fridays.
- Kathy Carn and Yesenia Baltierra have continued their weekly outreach with Ruby Drive Elementary.
- Kathy Carn and Yesenia Baltierra coordinated with Placentia Elementary School Librarians to donate discarded items to their library collections.
- Ana Balderas has continued with her weekly outreach with LOT 318 on Mondays and Wednesdays.
- Lori Worden attended the C21 Award ceremony for Communication at Tynes Elementary
- Yesenia Baltierra attended the C21 Award ceremony for Communication at Brookhaven Elementary on November 5th.
- Yesenia Baltierra attended the C21 Award for Communication at Van Buren Elementary on November 9th.
- Yesenia Baltierra attended the C21 Award for Communication at Golden Elementary on November 13th.

- Yesenia Baltierra, Venessa Faber and Victor Meza facilitated Harwood Staff training on November 30th.

MEETINGS

- Kathy Carn met with Yesenia Baltierra and Wendy Amireh for a Supervisors Meeting on November 7th and November 28th.
- Kathy Carn met with Yesenia Baltierra to discuss Children's Services on November 6th and 20th.
- Kathy Carn and Deanna White met with the Re-Grand Opening Committee on November 1st.
- Kathy Carn, Yesenia Baltierra, and Deanna White attended the Staff Meeting on November 20th.
- Yesenia Baltierra met with the Harwood Committee on November 13th, 26th and 28th.
- Yesenia Baltierra attended Manager's meeting on November 20th.

PROFESSIONAL DEVELOPMENT

- Kathy Carn attended the California Library Association conference in Santa Clara from November 8th- November 12th.

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Yesenia Baltierra, Public Services Manager

SUBJECT: Adult Services Report for November 2018

DATE: November 19, 2018

MONTHLY STATISTICS

Reference Desk Activity	November 2018	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
Reference -- in person	1195	1456	7,180	7,917	-9.31%
Reference -- telephone	463	525	3082	3587	-14.08%
Reference -- email/chat	0	23	27	106	-74.53%
Technology assistance	148	183	1181	1127	4.79%
Test passes	43	63	580	350	65.71%
Adult and Children's computer use (desktops)	946	1951	7572	11060	-31.54%
Adult computer usage (desktop)	1390	112	7540	8424	-10.49%
Public computer use (express laptops)	0	4	11	43	-74.42%

History Room Activity	November 2018	November 2017	Y-T-D FY 2018-19	Y-T-D FY 2017-18	Y-T-D % change
History Room Visitors	6	4	21	34	-38.24%

Volunteer Hours	November 2018	November 2017	Y-T-D FY 2018-19	Y-T-D FY 2017-18	Y-T-D % change
History Room	6	37	74	222.75	-66.78%
PLFF	283.5	332.42	1833.25	2377.63	-22.90%
General Library	95.5	557.33	1503.94	3217.46	-53.26%
Technology	0	1.75	0	18.25	-100.00%
Homework Club	69.75	73.25	236.75	228.75	3.50%
Adult Literacy Tutors	129.5	169	615.92	923.47	-33.30%
PTAC	55.25	73.5	408	672.25	-39.31%
Summer Reading Program	0	0	675.75	1365.62	-50.52%
Total Volunteer Hours	**639.5**	**1244.25**	**5347.61**	**9026.18**	**-40.75%**

Public Services Outreach Activity	November 2018	November 2017	Y-T-D FY2018-19	Y-T-D FY2017-18	Y-T-D %change
Outreach Visits	13	8	72	12	500.00%

Outreach Attendance	446	3748	2381	4359	-45.38%

Adult Programs

Type of Program	Number of Programs November	Attendance November	Number of Programs November	Attendance November	Number of Programs FYTD	Attendance FYTD	Number of Programs FYTD	Attendance FYTD	Number of Programs FYTD % change	Attendance FYTD % change
Date	2018	2018	2017	2017	FY1819	FY1819	FY1718	FY1718		
Book Club	0	0	1	4	2	16	5	28	-60.00%	-42.86%
Computer Workshops	0	0	1	12	0	0	8	86	-100.00%	-100.00%
Educational Programs	0	0	0	0	2	73	9	2317	-77.78%	-96.85%
Fine Art Programs	0	0	0	0	3	341	6	165	-50.00%	106.67%
Health & Fitness Programs	0	0	0	0	0	0	7	175	-100.00%	-100.00%
History Room Programs	1	100	1	25	3	168	4	122	-25.00%	37.70%
Home and Lifestyle Programs	0	0	0	0	0	0	3	330	-100.00%	-100.00%
Literacy Programs	4	37	7	62	23	328	28	241	-17.86%	36.10%
Reading Programs	1	30	1	22	3	522	3	477	0.00%	9.43%
Volunteer Programs	0	0	1	10	3	55	12	118	-75.00%	-53.39%
Totals	6	167	12	135	39	1,503	85	4,059	-54.12%	-62.97%

Literacy	YTD 1819	YTD 1718	% Change
English Literacy Students	46	36	27.78%
Students Graduated	0	7	-100.00%
English Literacy Tutors	41	30	36.67%

Teen Programs

Type of Program	Number of Programs November	Attendance November	Number of Programs November	Attendance November	Number of Programs FYTD	Attendance FYTD	Number of Programs FYTD	Attendance FYTD	Number of Programs FYTD % change	Attendance FYTD % change
Date	2018	2018	2017	2017	FY1819	FY1819	FY1718	FY1718		
Collaboratory	0	0	0	0	2	0	4	50	-50.00%	-100.00%
Friday Flicks	0	0	2	9	7	29	16	103	-56.25%	-71.84%
PTAC	2	41	2	42	10	209	13	263	-23.08%	-20.53%
Summer Reading Program	0	0	0	0	2	122	2	127	0.00%	-3.94%
Teen Misc.	0	0	0	0	0	0	1	61	-100.00%	-100.00%
Test	0	0	1	8	1	14	2	28	-50.00%	-50.00%
The Vault	1	17	0	0	2	167	2	223	0.00%	-25.11%
Totals	3	58	5	59	24	541	40	855	-40.00%	-36.73%

ACHIEVEMENTS

- Michelle Meades attended the first annual Orange County Archives Bazaar on Saturday November 3rd.
- Coleen Wakai coordinated Conversation Club on November 2nd, 9th, and 16th.
- Coleen Wakai attended literacy outreach at the annual CSUF Fieldwork Day on November 14th.
- Fernando Maldonado coordinated PTAC meetings on November 1st and 15th.

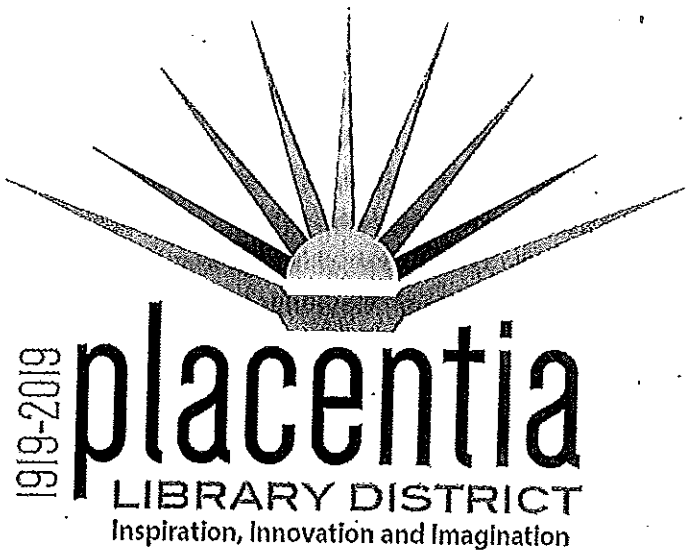
- Fernando Maldonado coordinated the Day of the Dead program on November 15th.
- Wendy Amireh and Jeannie Killianey coordinated the Winter Reading Challenge.

MEETINGS

- Wendy Amireh and Yesenia Baltierra met on November 13th, 26th, and 28th.
- Wendy Amireh attended the supervisors meetings on November 5th, and 7th.
- Wendy Amireh attended Kiwanis meetings on November 1st and 15th.
- Michelle Meades met with the Wendy Amireh on November 1st, 5th, 6th, and 7th.
- Coleen Wakai attended Huddle meetings on November 2nd, 9th, 16th and 30th.
- Adult Services staff attended the Adult Services department meeting on November 26th.
- Yesenia Baltierra, Jeannie Killainey, Fernando Maldonado, Michelle Meades, Sally Federman and Coleen Wakai attended SDD on November 30th.
- Coleen Wakai met with Wendy Amireh on November 1st, 8th, and 15th.
- Coleen Wakai met with individual literacy tutors on November 6th, 7th, 13th, 14th, and 29th.
- Coleen Wakai met with individual literacy students on November 13th.
- Jeannie Killianey and Wendy Townsend met on November 15th.
- Wendy Amireh and Victor Meza met on November 27th.
- Fernando Maldonado and Wendy Amireh met on November 13th and 26th.
- Sally Federman and Wendy Amireh met on November 5th.

PROFESSIONAL DEVELOPMENT

- Wendy Amireh, Fernando Maldonado, and Michelle Meades attended CLA on November 8th- 12th.



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Jeanette Contreras, Library Director

FROM: Tim Worden, Emerging Technologies Assistant

SUBJECT: Placentia Library Website & Technology Report for November 2018

DATE: December 17, 2018

On-line database usage	November 2018	Onsite Usage 11/18	Remote Usage 11/18	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
Placentia Library Catalog	28,082	N/A	N/A	14,587	86,801	77,582	12%
General Reference Center	227	171	56	37	506	161	214%
Biography In Context	83	78	5	114	2,170	3,091	-30%
Opposing Viewpoints	986	950	36	735	1,179	833	42%
Consumber Reports (new July 2016)	288	N/A	N/A	104	516	452	14%
Freegal	875	N/A	N/A	943	4,504	4,969	-9%
Heritage Quest	136	N/A	N/A	168	331	1,567	-79%
Novelist	137	N/A	N/A	35	278	170	64%
Public Library Core Collection Nonfiction (new June 2015 staff use only)	0	N/A	N/A	51	88	253	-65%
Pronunciator (new Sept. 2014)	53	N/A	N/A	34	116	257	-55%
ABC Mouse (new Sept. 2014)	40	N/A	N/A	40	174	254	-31%
ABC Mouse - Bring Reading Home (New March 2018)	3	N/A	N/A	N/A	146	N/A	N/A
World Book Online	5	N/A	N/A	N/A	148	N/A	N/A
Career Cruising (new June 2015)	3	N/A	N/A	10	20	25	-20%
Tumblebooks	55	N/A	N/A	90	389	669	-42%
Reference USA	445	N/A	N/A	255	972	1,732	-44%
Enki (new Oct. 2014)	5	N/A	N/A	13	16	34	-53%
Hoopla (new May 2015)	996	N/A	N/A	693	4,828	3,192	51%
Overdrive e-books	1462	N/A	N/A	1306	8,171	6,464	26%
Overdrive audio books	886	N/A	N/A	719	4,741	3,676	29%
Overdrive e-books - Placentia Advantage (New March 2018)	1,900	N/A	N/A	N/A	7,613	N/A	N/A
Overdrive audiobooks - Placentia Advantage (New March 2018)	1,793	N/A	N/A	N/A	7,258	N/A	N/A
Zinio (new Oct. 2014)	191	N/A	N/A	106	450	583	-23%
TOTAL DATABASE USAGE	**38,651**	**1,199**	**97**	**20,040**	**131,415**	**105,964**	**24%**

Computer & Online Resource Use	November 2018	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
Placentia Residents	858	1209	5,617	10,220	-45%
Non-Placentia Residents	649	928	4,195	7,269	-42%
Total	**1507**	**2137**	**9,812**	**17,489**	**-44%**

Website Traffic	November 2018	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
Website visits	7,036	11,355	48,131	65,338	-26%
Page Hits	11,423	19,563	80,262	110,269	-27%
Users	3,751	7,116	26,507	36,387	-27%
Pages/Session	1.62	1.72	N/A	N/A	N/A
Avg. Session Duration	00:02:17	00:02:27	N/A	N/A	N/A
% New Sessions	69	53	N/A	N/A	N/A

Wifi Use	November 2018	November 2017	Y-T-D 2018-19	Y-T-D 2017-18	Y-T-D % change
	1,205	2,029	7,696	11,149	-31%
Total	**1,205**	**2,029**	**7,696**	**11,149**	**-31%**

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

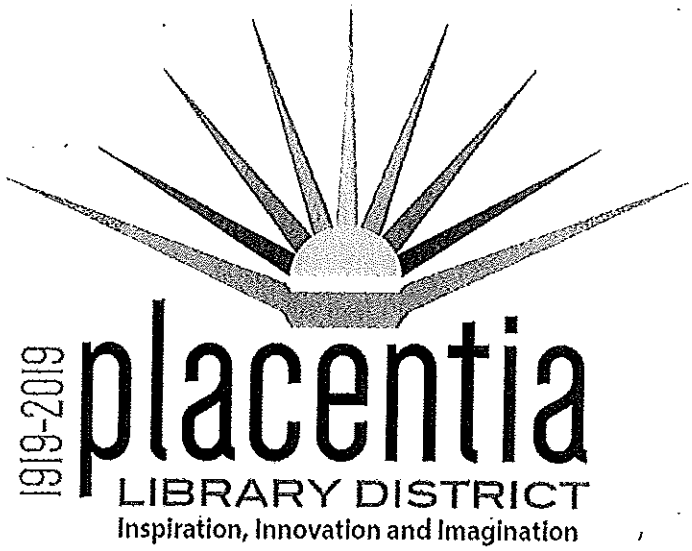
TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Employee of the Year Presentation**

DATE: December 18, 2018

PRESENTATION
President Gayle Carline will present the 2018 Employee of Year Award to Victor Meza, interim Library Assistant.



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Presentation of Fiscal Year 2017-2018 Financial Audit from White, Nelson, Diehl, Evans Firm.**

DATE: December 18, 2018

BACKGROUND

Ms. Daphnie Munoz from White, Nelson, Diehl, Evans will present the final findings for the Fiscal Year 2017-2018 Audit of Financial Transactions for the Placentia Library District.

The audit report will be furnished at the meeting.

RECOMMENDATION

Receive & File the Financial Audit for Fiscal Year 2017-2018.

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Reports from Library Staff on their Attendance at the Annual California Library Association (CLA) Conference.**

DATE: December 18, 2018

BACKGROUND

At the May 21, 2018 Library Board of Trustees meeting, the Board approved library staff to attend the annual California Library Association conference in Santa Clara. The following staff will provide the Board with their experience:

- Jon Legree, Technology Manager
- Wendy Amireh, Adult Services Supervisor
- Kathy Carn, Children's Services Supervisor
- Michelle Meades, History Room Librarian
- Fernando Maldonado, Interim Business Manager
- Tim Worden, Emerging Technology Assistant
- Laura DeLeon, Library Clerk
- Victor Meza, Library Clerk
- Christie Hwang, Library Aide

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LIBRARY DISTRICT
Inspiration, Innovation and Imagination

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Presentation of Proposals for General Contractor Service for the Centennial Renovation Project.**

DATE: December 18, 2018

BACKGROUND

When the Placentia Library District first opened in 1919, it was designed to serve a population of less than 2,000 by loaning books to the residents of Placentia. Fastforward nearly 100 years later, the Library is the hub of the community, serving a population of 52,228 residents. Almost 325,975 people visited the Library and 280,710 items were loaned in 2016-2017.

The roles filled by the Library have changed dramatically, mainly due to rapid innovation due to technological developments. The Library is a place for education and self-help opportunities, it transforms lives through literacy, and it changes communities by supporting community and civic engagement. It is a place that welcomes everyone equally, offers visitors a place to stay in touch with their families, friends, and business associates while encouraging users to contribute back to their communities.

The focus of the renovation will be improving the building space to accommodate 21st century technology and community needs. The Library is the one place in the community that is free and accessible to all, every day of the week. Existing space will be reconfigured to reflect the community's needs and inputs based on library best practices and emerging service trends. We embrace the Library's new roles of a convener, creator, collaborator and connector of innovative spaces for our community. The new space is designed to create new experiences that help to inspire, imagine, and innovate.

In 2017 and 2018 presentations were made to community partners and the public with charrette exercises in 2017 and conversations held in 2018. On June 28, 2017, the Library Board of Trustees adopted the 2017-2019 Fiscal Year Budget. The Budget included a capital improvement plan for renovation of the public area and implementation of an energy efficiency project.

On November 13, 2018 the Library began a formal competitive bidding process for the renovation project. Three companies participated in the onsite walkthrough with library staff. On December 12, 2018, the Library completed the bidding process. One bid was received at the base bid price of $1,469,100. Cal-City Construction was the only and lowest responsive and responsible bidder. Cal-City Construction has successfully

completed projects with other libraries including Los Nietos Library, South Whittier Library, Lomita Library and El Camino Library.

Attachment A is the RFP as made available to the public on November 13, 2018.

Attachment B is the Bid Tabulation.

Attachment C is the proposal from Cal-City Construction.

Fiscal Impact: $1,469,100

RECOMMENDATIONS

1. Motion to award the contract to Cal-City Construction in the amount of $1,469,100 for the renovation project and authorize the Board President to execute the contract.

2. Authorize motion with a roll call vote.

3. Roll call vote.

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Inspiration, Innovation and Imagination

Date: November 13, 2018

Request for Proposals (RFP) – Placentia Main Library – Renovation

Submit Written Bid To: Placentia Library District Attn.: Administration
411 E. Chapman Ave.
Placentia, CA 92870
714-528-1925, ext. 200

Written Bids Shall Be Submitted By: December 12, 2018, 1:00 p.m., PDT **NO EXCEPTIONS.** Late submittals will not be considered. Written bids must be received by the time and at the location specified above. Postmarks will not be accepted. Bids addressed to anyone other than the designation specified above under "Submit written Bid to" section will not be accepted. **Note: All submitted bids shall be sealed.**

Project comprises labor, materials and services necessary for: The partial interior remodel and refurbishment of an existing single story, approximately 27,875 square foot public library. The building is Type V A, without fire alarm or fire sprinkler systems, with a layout that includes a range of child, teen and adult public spaces, and staff support spaces. Refer to Drawings for detailed information on interior spaces that are considered part of the Project scope.

Successful bidder shall furnish payment and performance bonds, each in the amount of 100 percent of the Contract price.

Prospective bidders must attend the mandatory pre-bid site inspection tour on Friday, November 16, 2018 at the Placentia Library District, 411 East Chapman Avenue, Placentia, CA 92870. Inspection tour will begin at 11:00 a.m. at the North Entrance Lobby.

Bid forms and project documents will be available for download at the Library website:
http://placentialibrary.org/about/request-for-proposals

Bid Opening will be December 12, 2018 at 2:00 p.m. at Placentia Library District – History Room at: 411 East Chapman Avenue, Placentia, CA 92870. Questions and requests for further information and/or clarifications of the RFP shall be sent in writing to: Fernando Maldonado, Placentia Library District, 411 East Chapman Avenue, Placentia, CA 92870 or fmaldonado@placentialibrary.org

This project is a "public work" project that is subject to, among other laws, Labor Code Sections 1720 through 1861, inclusive.

PLACENTIA LIBRARY DISTRICT
411 E. Chapman Ave.
Placentia, CA 92870
Phone: 714-528-1925
administration@placentialibrary.org
www.placentialibrary.org

As described in the Request for Proposals, each contractor (including subcontractors) must be registered with the California Department of Industrial Relations ("DIR") in accordance with Labor Code Section 1725.5, and bidders must provide evidence of registrations for themselves and their subcontractors. Each worker on the Project must be paid not less than the applicable prevailing rates of per-diem wages in the locality in which the Work is to be performed for each craft or type of worker needed to execute the Contract ("Prevailing Wages"). A copy of the applicable rates of Prevailing Wages is on file and available for review the Place for Submitting Bids, and a copy will be posted at the Project Site. The Project is subject to compliance monitoring and enforcement by the DIR. The successful bidder will be required to post all job-site notices required by DIR regulations and other applicable law.

SPECIFICATIONS

FOR THE

PLACENTIA LIBRARY

FOR

PLACENTIA LIBRARY DISTRICT

Prepared by:

emarstudio
for public architecture
www.emarstudio.com
310 508 9390 t
310 873 3740 f
3341 Helms Avenue
Culver City, CA 90232

NOVEMBER 2018

PROJECT NUMBER: **PLD-2018-003**

PROJECT TABLE OF CONTENTS

DIVISION 15 - MECHANICAL

SECTION 01 10 00

PROJECT GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of the Contract (1.02)
B. Permanent Utility Services (1.03)
C. Work not Included (1.04)
D. Drawings (1.05)
E. Time Of Completion (1.06)
F. Long Lead Time Materials and Equipment (1.07)
G. Liquidated Damages (1.08)
H. Examination of Site and Work (1.09)
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J. Restrictions to the Work (1.11)
K. Cutting and Patching (1.12)
L. Air Quality Management District Rules (1.13)
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O. Existing Utility Lines (1.16)
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Q. Project Administration (1.18)
R. Best Management Practices (BMP) Requirements (1.19)
S. Work In Progress Under Other Contracts (1.20)

1.02 SCOPE OF THE CONTRACT

A. Work to be done under the Contract consists of furnishing all materials, all equipment, all permits, and performing the Work required by these Specifications and the Drawings hereinafter, described and necessary, to complete the construction of the Placentia Library.

B. The work includes but is not limited to the following:

1. The partial interior remodel and refurbishment of an existing single story, approximately 27, 875 square foot public library. The building is Type V A, without fire alarm or fire sprinkler systems, with a layout that includes a range of child, teen and adult public spaces, and staff support spaces. Refer to Drawings for detailed information on interior spaces that are considered part of the Project scope.
2. Exterior work is not part of the scope of work for this Project.
3. The Owner will continue to offer limited public services throughout the duration of construction. It is the Contractor's responsibility to screen / partition off areas of work and areas used for public services and to ensure that intrusion of dust, noise, and debris into the areas of public service. Coordination with the Owner's service plans,

including modifications to typical construction sequencing, is required as part of this contract.

4. The Owner will provide a Hazardous Materials Report detailing areas known to contain hazardous materials. It is the Contractor's responsibility to take all required measures when working with and around areas affected by such materials.
5. There are two projects under separate contracts with whom coordination will be required.
   a. An HVAC and electrical upgrade project including replacement of the existing HVAC system with associated structural support work and connections (but no modifications to) the existing ductwork system. Electrical work includes the installation of a rooftop mounted photovoltaic system with associate roofing and structural upgrades, and replacement of all existing fluorescent lamps with LED equivalents. This Project will be completed prior to commencement of the work included under this contract.
   b. A Fixtures, Furnishings, and Equipment (FF&E) Project, in which loose furniture, casework without plumbing fixtures, steel cantilever shelving is provided and installed. This contract will be executed concurrently with this contract, and the work will be executed simultaneously with work that is considered under the scope of this contract.

1.03 UTILITY SERVICES

The Work shall include all operations necessary to connect to required utility services, including service lines from points of connection shown on Drawings, permanent meters, connections, and inspections.

Drawing notes and/or specification provisions of trade sections concerning utilities shall take precedence over the foregoing provisions.

1.04 WORK NOT INCLUDED

All items indicated on the Drawings as "N.I.C." (not in contract).

1.05 DRAWINGS

The Work shall conform to the Drawings entitled Placentia Library with sheet numbers and titles as listed on Sheet No. G000 of the Drawings.

1.06 TIME OF COMPLETION

A. The entire Project shall be completed within two hundred fifty (250) calendar days following the required commencement date of the Work.

B. Failure to meet the deadlines set forth in section A above will be subject to Liquidated Damages identified in Paragraph 1.08.

C. Final Payment Request shall be submitted within twenty (20) days after completion of the contract work, including all punch list items.

1.07 LONG LEAD TIME MATERIALS AND EQUIPMENT

A. The Contractor shall make every effort to demand of his Subcontractors and suppliers, relative to long lead time items, that they order such items well in advance of the scheduled time of installation. Time extensions for late ordering of such materials will not be allowed.

1.08 LIQUIDATED DAMAGES

A. All time limits stated in the Contract Documents are of the essence of the Contract and should the Contractor fail to complete the work required to be done on or before the time of completion as set forth in these specifications, including any authorized extension of time, it is mutually understood and agreed by and between the awarding entity and the Contractor that the use by the public of the Contract Work will be correspondingly delayed, and that by reason thereof, the awarding entity and the public will necessarily suffer great damages; that such damages from the nature of the case will be extremely difficult and impractical to fix; and that the awarding entity and the Contractor have endeavored to fix the amount of said damages in advance as follows:

1. The sum of $1,200 a day for each day's delay in the completion of the work to be performed in number of calendar days completion period specified.

B. It is further mutually understood and agreed by and between the awarding entity and the Contractor that the sum of liquidated damages set forth above will be additive to a total of $1,200 a day for each and every day's delay in the event that the time limits, as herein before specified, are concurrently exceeded. Any authorized extensions of time will be added to the time limits stipulated.

1.09 EXAMINATION OF SITE AND WORK

A. Bidders must examine the location, physical conditions, and surroundings of the proposed Work and judge for themselves the extent to which these factors will influence the performance of the Contract Work.

B. The plans for the Work show conditions as they are supposed or believed by the Owner to exist, but it is not intended, or to be inferred, that the conditions as shown thereon constitute a representation, express or implied by the Owner or its officers, that such conditions are actually existent, nor shall the Contractor be relieved of the liability under his Contract, nor the Owner, or any of its officers, be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the plans or referred to in the Specifications and the actual conditions revealed during the progress of the Work.

1.10 COOPERATION

In the entrance and exit of all workers and in bringing in, storing, or removing of materials and the erection and maintenance of equipment and in the manner and time of prosecuting the work, the Contractor shall cooperate with those in authority on the premises to prevent the entrance of those whose presence is forbidden or undesirable, and he shall observe all rules and regulations in force on the premises and avoid undue interference with the convenience, sanitation, and routine of Owner staff occupying the premises.

1.11 RESTRICTIONS TO THE WORK

A. The Owner reserves the right to determine which of the Contractor's operations are noise, dust, or dirt producing, or which disrupt utility service, or which constitute blocking of passageways, exits, entrances, etc., or which in any way constitute an interference in the proper function of the building.

B. Contractor shall maintain clear access to all protection equipment at all times.

C. Control of Tools: During the progress of the work, all hand tools, including power driven hand tools, cables, ropes, and other implements shall be transported and retained, except when in use in an approved locked toolbox. Care shall be taken that no tool is left unguarded or left where it might be taken by an unauthorized person.

D. All work by the Contractor is subject to inspection at any time and without notice by the Owner.

E. The working hours are Monday through Friday between **7:00 a.m. to 4:00** p.m. unless otherwise specified by the Owner.

F. The entire Project shall be completed within two-hundred fifty (250) calendar days following the required commencement date of the Work.

K. The Contractor is to indicate in their written correspondence to the Owner any intent to shut off domestic an water supply and/or systems serving abutting properties. The Contractor's written request to shut off these domestic water supply and/or systems is required to include the date(s) and time(s) that such services would be shut off for each individual meter / service for which the request is being made. Domestic water service is not to be shut off for more than eight hours within a (each) 24-hour period.

1.12 CUTTING AND PATCHING

The Contractor shall perform all cutting, patching, and finishing operations occasioned by the Work under the Contract, whether or not such operations are indicated on the Drawings or specifically mentioned in the various sections of the Specifications. All such operations shall be performed in

the best practices of the various trades involved and to the satisfaction of the Owner. All patching and finishing materials shall match existing adjacent surfaces in every respect, including design, type and quality of materials, finish, and color. Cutting, patching, and finishing shall include all such operations in existing areas required by the Work under the Contract.

1.13 AIR QUALITY MANAGEMENT DISTRICT RULES

The Contractor shall become familiar with requirements of the South Coast Air Quality Management District Rules 50, 66, 66.I, 66.2, and 1113. The Contractor is responsible for conforming to and using materials which meet the requirements of the above-specified rules.

1.14 SHOP DRAWINGS

Furnish shop drawings as required in the various sections of the Specifications or as requested by the Commission. Unless otherwise specified, submit an electronic copy and six (6) hard copies of shop drawings to the Commission for review. One set will be returned to Contractor marked "no exceptions noted" or "exceptions noted." If changes are required, submit an electronic copy and six (6) hard copies of corrected shop drawings shall be delivered to the Commission. Shop drawings shall be of sufficient size and scale to clearly show all details; shop drawings of millwork and cabinet work shall show molding full size. No materials shall be furnished or Work done on items requiring shop drawings prior to acceptance. Acceptance of shop drawings shall not relieve the Contractor from responsibility for deviations from the Contract Documents, nor from responsibility for errors or omissions of any sort in the shop drawings. Neither does such acceptance relieve the Contractor from his responsibility for the correct installation, or for the proper operation in service, of items requiring shop drawings.

1.15 CLEANING

During progress of Work and upon completion of each part of the Work as defined by the sections into which these Specifications are divided or as separated by the various trades involved in the Work, each area shall be cleaned of debris emanating from the Work. The Contractor shall remove excess materials, waste, rubbish, and debris, and his construction and installation equipment from the premises. Any dirt and stains caused by the Work under the Contract shall be removed from the surfaces of the structures and from equipment and fixtures. Final acceptance of the Work done under these Specifications will not be given until the cleaning has been inspected and approved by the Owner.

1.16 EXISTING UTILITY LINES

Except as indicated on the Drawings or in the Specifications, the Contractor will not be liable for the rerouting of existing active underground lines, which may be discovered during the progress of the Work.

1.17 PROTECTIVE MEASURES

The Contractor shall provide and maintain substantial and adequate protection as may be required to protect new and existing Work and all items of equipment and furnishings for the entire duration of Work.

The Contractor shall repair or make good any and all damage or loss he may cause to the building or other City property to the full satisfaction of the Owner.

1.18 PROJECT ADMINISTRATION

All materials supplied and all Work done by the Contractor shall be under the general administration of the Owner and in accordance with the Drawings and Specifications.

1.19 WORK IN PROGRESS UNDER OTHER CONTRACTS

It is anticipated that other work may be concurrently in progress with the work of this contract. Refer to General Conditions articles, "Coordination with others and other contracts".

END OF SECTION

* * * *

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Contingency allowances.

1.2 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect/Owner of the date when final selection/design and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Owner's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.3 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.4 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Owner, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.7 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Owner for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

These allowances include material cost and Contractor overhead and profit.

A. **Allowance No. 1: Special Inspections Allowance** $20,000 for deputy inspections

B. **Allowance No. 2: Onsite Unforeseen Improvements Allowance:** $50,000 for onsite improvements as approved by the owner.

PART 4 - REMAINDER OF ALLOWANCE

A. An allowance has been established for inclusion in the contract sum to cover the costs of prescribed work and items not specified in detail with the provision that any variation between the allowance amount and the final cost of the prescribed work and items will be made by change order in order to appropriately adjust the contract sum. The Allowance must be included in the estimated construction cost. The Allowance will be used in the final discretion and direction of the County for work, services, and items related to and including, but not limited to, the following: utilities, unknown or unanticipated soil conditions, monument sign, permitting, infrastructure, and other work, services, and items that may not have been foreseen by the County. At substantial completion of the Work, the contract sum will be appropriately adjusted for the Allowance. Any amount of Allowance that remains at substantial completion of the Work will be returned to the County and the contractor will have no right to any such remainder.

END OF SECTION

SECTION 01 26 13

CONTRACTOR'S REQUEST FOR INFORMATION

PART 1 - GENERAL

1.01 SUMMARY

A. This section covers general requirements for Contractor's Requests for Information (RFI).

B. The Contractor will use Oracle/Primavera Solutions (latest version) to prepare and submit requests for information unless otherwise instructed by the Owner.

C. Related Sections:

1. General and Supplementary Conditions for changes in the Work.

2. Section 01 31 19: Coordination and Meetings

3. Section 01 33 00: Submittals

1.02 SUBMITTALS

A. Submit a Formal Written Request for Information to the Owner when:

1. An unforeseen condition or constructability question occurs.

2. Questions regarding information in the Contract Documents arise.

3. Information not found in the Contract Documents is required

B. RFIs shall be submitted within a reasonable time frame so as not to interfere with or impede the progress of the Work. The Contractor shall make every effort to keep the number of RFIs to a minimum. If the number of RFIs becomes unwieldy, the Owner may require the Contractor to abandon the RFI process and submit requests as either submittals, substitutions, or requests for change.

C. When the response to an RFI effects the cost or time duration of the project, notify the Owner in accordance with the General Conditions at the time of the submittal. Notification shall occur prior to commencing such work, so that the change order process can be initiated.

1. At time of the submittal of the RFI, notify the Owner to the time available before the response will cause a time or cost impact to the Project.

2. An answered RFI shall not be construed as approval to perform extra work.

D. Form of Submittal:

1. RFI's to be submitted in electronic format. Each request shall include the following information.

a. Project name, as listed on the Contract Documents.
b. Date.
c. RFI number.
d. Name, address, telephone and fax number of the Contractor.
e. Number and title of affected Specification Section(s).
f. Drawing numbers and detail numbers as appropriate.
g. Clear, concise explanation of information or clarification requested.

h. Blank, lined spaces for Architect's response.
i. Signature block for Commission to acknowledge review of Architect's response.
j. Mark each page of each RFI attachment in the lower right corner with the RFI number.
k. Number submitted RFIs consecutively.
l. Sign and stamp all RFI forms. RFIs form subcontractor or material suppliers shall be submitted through the Contractor. Contractor shall review all such information request prior to submitting to the Owner.

E. RFIs not meeting the requirements of this Section will not be answered and any consequential impact on the project shall be the sole responsibility of the Contractor. Unanswered RFIs will be returned with a stamp or notification "Not Reviewed."

F. RFI Log: Contractor shall maintain and update the log weekly and furnish to the Owner when requested. The log shall contain the following minimum information:
a. RFI number
b. Date submitted
c. Brief description of content or subject
d. Date answered

G. Allow a minimum of five (5) working days for review and response. The response time will be increased if more information is required, when the RFI is submitted out of sequence, or if in the opinion of the Owner, more time is required to answer the RFI.

1.03 QUALITY ASSURANCE

1. Carefully review the Contract Documents before submitting a RFI to the Owner. Verify that the information requested is not indicated in the Contract Documents or cannot be determined from a careful review.

1. The Owner may not answer RFIs for information that is readily available in the Contract Documents.

2. RFIs requesting clarification of coordination issues, shall include the Contractor's suggested solution as an attachment to the RFI.

1. Such coordination issues include, but are not limited to, pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items.

2. Provide scale drawings or sketches indicating the proposed solution.

3. RFIs which do not include a suggested solution will not be answered.

3. Do not use RFIs for the following:

1. To request approval of submittals.

2. To request approval of substitutions.

3. To request changes to the Contract Documents and to confirm action taken by the Contractor for requested changes/substitutions to the Contract Documents.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 29 73

SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Contractor schedule of values.

1. The Contractor will use Primavera Expedition 9.1 (or the latest version), Excel, and Adobe Acrobat to prepare and submit the Schedule of Values unless otherwise instructed by the Owner.

2. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, List of Subcontracts, and Submittal Schedule.

3. The Schedule of Values, unless subjected to by the Owner, the basis for the Contractor's applications for payment.

1.2 SCHEDULE OF VALUES

A. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

1. Contractor's construction schedule.

2. Application for Payment form.

3. List of subcontractors.

4. List of products.

5. List of principal suppliers and fabricators.

6. Schedule of submittals.

B. Submit the Schedule of Values to the Architect and Owner for approval at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.

C. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.

1. Identification: Include the following Project identification on the Schedule of Values:

a. Project name and location.

b. Name of the Architect.

c. Project number.

d. Owner Representative's name and address.

e. Date of submittal.

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

a. Generic name.

b. Related Specification Section.

c. Name of subcontractor.

d. Name of manufacturer or fabricator.

e. Name of supplier.

f. Change Orders (numbers) that have affected value.

g. Dollar value.

h. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

4. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.

5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

6. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

D. REVIEW AND RESUBMITTAL

1. After review by the Commission revise and resubmit Schedule as required. Resubmit revised Schedule in same manner.

2. Progress Payments will not be made until Schedule has been approved.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

SECTION 01 31 19

COORDINATION AND MEETINGS

PART 1 – GENERAL

1.01 SECTION INCLUDES:

A. Coordination
B. Preconstruction Meeting
C. Progress Meetings
D. Preinstallation Meetings

1.02 COORDINATION

A. Coordinate scheduling, submittals, and work of the various Sections of the Project Manual to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later and for accommodating items to be installed by the Owner.

B. Coordinate sequence of work to accommodate Owner occupancy as specified in Section 01 10 00.

1.03 PRECONSTRUCTION MEETING

A. Owner's Project Manager will schedule a meeting after Notice of Award.

B. Attendance Required: Architect, Project Coordinator, Prime Contractors, Major Subcontractors, Project Inspector and key County personnel.

C. Agenda:

1. Contract Agreement

   a. Transmit Performance and Material Bonds to Project Manager
   b. Review General/Supplementary Conditions
   c. Deferred Approvals

2. Receive documentation from Contractor

   a. Construction Schedule
   b. Schedule of Values
   c. List of Subcontractors with Addresses and Phone Numbers
   d. List of Submittals and Estimated Date of Submittal

3. Project Administration

   a. Application for Payment, Project Schedule, Lien Release, As-built Documents
   b. Change Orders and Proposal Requests
   c. Submittals and Substitutions, Deferred Approvals
   d. Site Meetings
   e. Testing Lab
   f. Verified Reports

4. Special Conditions

   a. Temporary Facilities
   b. Owner Occupancy
   c. Work by Owner
   d. Access to Site by third party Owner consultants

5. Construction Process

   a. Contractor to give Overview of Construction
   b. Contractor to identify items to be selected by Architect/ Owner and date selections must be made.
   c. Contractor to review special requirements for equipment, safety, and noise.

6. Project Close-Out

   a. Close-out Binder
   b. As-Built Documents
   c. Final Verified Reports

D. Architect or Owner Project Manager to record minutes and distribute copies within three days after meeting to participants, Architect and those affected by decisions made.

1.05 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work on a weekly basis or as needed.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Project Coordinator, Prime Contractors, major Subcontractors and suppliers, Project Inspector, key Owner personnel and Architect as appropriate to agenda topics for each meeting.

D. Minimum Agenda

1. Review Minutes of Previous Meetings
2. Review of Work Progress
3. Field Observations, Problems, and Decisions
4. Identification of problems which impede planned progress.
5. Review RFI Log
6. Review of Submittal Logs and Schedule or Status of Submittals.
7. Review of Off-site Fabrication and Delivery Schedules
8. Maintenance of Construction Progress Schedule
9. Corrective Measures to Regain Project Schedules
10. Planned Progress During Succeeding Work Period
11. Coordination of Projected Progress
12. Maintenance of Quality and Work Standards
13. Change Order Requests and Construction Change Directive Logs
14. Effect of Proposed Changes on Progress Schedule and Coordination
15. Other Business Relating to Work

E. Architect to record minutes and distribute copies within three days after meeting to participants, Architect, and those affected by decisions made.

1.6 PRE-INSTALLATION MEETING

A. When required in individual specification sections, convene a pre-installation meeting 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 four days in advance of meeting date.

D. Prepare agenda and preside at meeting:

1. Review conditions of installation, preparation and installation procedures.

2. Review coordination with related work.

E. Contractor to record minutes and distribute copies within three days to participants, Architect and those affected by decisions made.

1.07 COORDINATION OF SUBMITTALS

A. Schedule and coordinate Submittals

B. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate request for substitutions to assure compatibility of space, of operating elements, and effect on work of other sections.

1.08 COORDINATION OF SPACE

A. Coordinate use of project space and sequence of installation of mechanical and electrical work which is indicated diagrammatically on drawings. Follow routings shown for pipes, ducts, and conduits as closely as practical, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximum accessibility for other installations, for maintenance and for repairs.

B. In finished areas, except as otherwise shown, conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

1.09 COORDINATION WITH WORK BY OWNER

A. Coordinate any work by Owner.

1.10 COORDINATION OF CONTRACT CLOSE-OUT

A. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.

B. After Owner occupancy of premises, coordinate access to site by various sections for correction of defective work and work not in accordance with Contract Documents to minimize disruption of Owner's activities.

C. Assemble and coordinate close-out submittals specified in Section 01 70 00.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 01 32 00

CONSTRUCTION INDOOR AIR QUALITY

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Contractor shall provide all necessary equipment and material resources required to meet the requirements of this section.

B. Related Sections:

1. 01 33 00 - CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

1.02 SUBMITTALS

A. The Contractor shall provide the following documentation:

1. Construction Indoor Air Quality Management Plan: During Construction:

a. The Plan shall follow the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 2007 2nd Edition, Chapter 3.

b. Protect stored on-site or installed absorptive materials from moisture damage.

c. If permanently installed air handlers are used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 shall be used at each return air grille, as determined by ASHRAE 52.2-1999. Replace all filtration media immediately prior to occupancy with MERV 13 filter.

d. Provide a Draft of the Plan ten calendar days from the notice to proceed.

e. Provide a Final version of the Construction IAQ Management Plan after completing the requirements of this section.

1) The final Plan must be revised to reflect the actual as-built conditions of this project.

2. Construction Indoor Air Quality Procedures Photographs:

a. Provide photographs of construction IAQ management measures such as protection of ducts and on-site stored or installed absorptive materials.

b. Photographs shall be taken on at least three different occasions during the interior finish work:

1) The first two or four few weeks of the work.

2) The middle two or four few weeks of the work.

3) The last two or four few weeks of the work.

c. On each occasion a minimum of four photographs representing at least four different Construction IAQ measures shall be taken. This represents a total of twelve (12) photographs.

d. Each shall be labeled to identify the highlighted SMACNA control approach and the date it was taken must appears on the photographs.

3. Construction Indoor Air Quality Management Plan: Before Occupancy:

a. The Plan shall describe the pre-occupancy phase practices planned for the project.

b. The Plan may be incorporated into the Construction Indoor Air Quality Management Plan: During Construction.

c. Provide a Draft version of the Construction IAQ Management Plan: Before Occupancy, 30 days prior to pre-occupancy air protection efforts and obtain approval by the owner and mechanical engineer prior to initiation of the work.

d.. Provide a Final version of the Construction IAQ Management Plan: Before Occupancy, no more than two weeks after completing the process.

e. Provide a detailed narrative describing the project's pre-occupancy flush out process, pre-occupancy and post occupancy flush out process or Indoor Air Quality Testing.

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION

3.01 INDOOR AIR QUALITY MANAGEMENT DURING CONSTRUCTION

A. During construction the Contractor shall meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Association (SMACNA), IAQ Guidelines for Occupied Buildings Under Construction, 2007 2nd edition, Chapter 3, for the items listed below. The SMACNA guidelines have been modified to address the special issues and needs of a new construction project:

B. HVAC Protection:

1 Protect all air handling and distribution equipment, and air supply and return ducting during construction.

2 Adequately cover and protect all exposed air inlets and outlets openings, grilles, ducts, plenums, etc. to prevent water, moisture, dust, and other contaminate intrusion.

3 Apply protection immediately after installation of equipment and ducting.

4 Ducting runs that require more than a single day to install shall be protected at the end of

each day's Work.

5 Install air filters with a MERV filtration value of 8, as determined by ASHRAE 52-2-1999, over all air return grilles.

C. Source Control:

1 Protect stored on-site or installed absorptive or porous materials such as batt insulation and drywall from exposure to moisture.

2 Do not use wet damaged porous materials in the building.

3 Provide adequate ventilation of packaged dry products prior to installation. Remove from packaging and ventilate in a secure, dry, well-ventilated space free from strong contaminant sources and residues.

4 Provide a temperature range of 60 degrees F minimum to 90 degree F maximum continuously during the ventilation period. Do not ventilate within limits of Work unless otherwise approved by the Architect.

5 Route material deliveries and construction waste removal around the exterior of the building, not through it.

D. Pathway Interruption:

1. The Owner does not plan to occupy the building until construction is complete. Pathway interruption shall be observed and implemented per SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 2007 2nd Edition, Chap.3:

a. Depressurize the work area by adjusting the balance of portable exhaust fans. The work area should be exhausted at a rate at least 10% greater than the rate of supply air in order to maintain an effective negative pressure.

b. Pressurize occupied space when in use to exclude airborne dust, odors and other contaminants.

c. Erect barriers to contain construction area by full containment with barriers, capping of return air grille/duct and the application of negative pressure.

d. Relocate pollutant source. No construction materials shall be stored in mechanical rooms with air handling units.

e. Temporarily seal the building during activities of potentially unacceptable contaminant levels.

E. Housekeeping:

1 Minimize accumulation of dust fumes, vapors, or gases in the building.

2 Suppress dust with wetting agents or sweeping compounds.

3 Clean-up dust using a wet rag or damp mop.

4 Increase the cleaning frequency when dust build-up is noted.

5 Remove spills or excess applications of solvent-containing products as soon as possible.

6 Remove accumulated water and keep work areas as dry as possible.

7 Vacuum using HEPA filtered vacuum cleaners.

8 Store volatile liquids, including fuels and solvents, in closed containers and outside of the building when not in use.

9 Keep volatile liquid containers closed when the container is inside of the building and not in use.

F. Scheduling:

1 Schedule for application of interior finishes including time frames for the application of wet materials onto dry materials, dry materials onto wet materials, and expected curing times for applied wet materials.

2 Wet materials include all paints, adhesives, sealants, coatings, finishes and spray-applied material, such as structural fireproofing

3 Insure that all wet applied interior finish materials are properly and fully cured before installing other finish materials over them

4 Install carpets and furnishings after all other interior finish materials have been applied and fully cured

5 Provide sufficient ventilation, air circulation and air changes to properly cure materials

6 Provide sufficient ventilation, air circulation and air changes to dissipate excessive humidity when present

END OF SECTION

SECTION 01 32 16

PROJECT SCHEDULE

PART I GENERAL

1.1 SUMMARY

A. The Contractor shall prepare and maintain a Project Schedule using the critical path method (CPM) of schedule analysis.

B. The schedule is a management tool. It is used to demonstrate the Contractor's means of construction, to identify the critical path of work necessary for on-time completion and to provide a method of analyzing the effects of delays to the contract completion date.

C. The requirement for the Project Schedule is included to assure adequate planning and execution of the Work and to assist the Owner in appraising the reasonableness of the proposed Project Schedule and evaluating the progress of the Work.

D. Float is a continuously expiring project resource equally available to both the Contractor and Owner on first come first served basis.

1.2 PROJECT CONDITIONS

A. Sequencing

B. Scheduling

PART 2 PRODUCTS

2.1 AUTOMATED SCHEDULING PROGRAMS

A. The Contractor shall prepare the Project Schedule using the latest version of Oracle/Primavera Solutions Project Planner (latest version) or SureTrak Project Manager (c) or equal.

2.2 SUBMITTALS

A. IN THE EVENT THAT THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS OF THIS SECTION 01 32 16 PROJECT SCHEDULE, IT SHALL UNCONDITIONALLY WAIVE ALL CLAIMS FOR DELAY AND SHALL WAIVE ALL DEFENSES FOR THE ASSESSMENT OF LIQUIDATED DAMAGES DURING THE TIME IT IS NOT IN COMPLIANCE. IF COMPLIANCE IS ACHIEVED, THE CONTRACTOR'S CLAIMS FOR DELAY OR DEFENSES FOR LIQUIDATED DAMAGES SHALL EXCLUDE THE TIME IT WAS NOT IN COMPLIANCE WITH THIS SECTION.

B. Each Project Schedule submittal shall include a time-scaled network activity diagram (Gantt Chart).

1. The Contractor shall plot the diagram on ANSI C sized paper or other size approved by the Owner.

2. The organization and layout of the diagram shall be as directed by the Owner.

3. The network activity diagram shall show for each activity its description, its unique activity number, its estimated duration in work days and its relationship

with other activities. The critical path shall be shown on the network activity diagram.

D. The Project Schedule shall be cost loaded.

E. Preliminary Project Schedule:

1. The Contractor shall prepare a Preliminary Project Schedule and submit prior to the preconstruction conference. The Notice to Proceed for construction will not be issued until this schedule is submitted and accepted by the Owner.

2. The Contractor can elect to submit the Proposed Baseline Project Schedule in lieu of the Preliminary Project Schedule.

F. Baseline Project Schedule

1. The proposed Baseline Project Schedule shall be submitted within 10 working days after the Notice to Proceed for construction is issued or such other time as the Owner may allow. In no case shall the proposed Baseline Project Schedule be submitted later than 20 working days after the Notice to Proceed has been issued.

G. Schedule Review

1. The Owner will review Project Schedule submittals and provide written comments within 10 working days of their receipt. The review comments will only address the Contractor's compliance with the contract requirements including contract time, milestones, and Owner-imposed construction constraints. They do not constitute an approval of the Contractor's approach. Scheduling the project and the means and methods needed to achieve the schedule are solely the responsibility of the contractor.

2. Review of the Project Schedule does not relieve the Contractor of its responsibility for meeting the Contract Completion Date. Any omission of contract work from the Project Schedule shall not excuse the Contractor from completing such work within the Contract Time.

3. The Contractor shall make adjustments to the sequence of work or task duration, or shall add tasks to the Project Schedule to accommodate the Owner's needs. If such adjustments would increase the Contractor's costs for performing the work or would extend the Contract Time, the Contractor shall request a Contract Change Order, unless a Contract Change Order is requested the Contractor agrees that these adjustments are at no cost to the Owner.

PART 3 EXECUTION

3.1 GENERAL

A. The following requirements are based on using either Oracle/Primavera Solutions PC (c) or Oracle/Primavera Solutions SureTrak Project Manager (c). If the Contractor is using another scheduling program, it shall be configured to yield similar results.

B. Activity Codes

1. Each, activity shall have the following activity codes defined and completed:

a) RESP-The entity responsible for completing the activity. Each activity shall be assigned to the Contractor, subcontractor, supplier, governmental agency, or the Owner.

b) AREA-Logical subdivision of the Project generally following the CSI Uniformat. As a minimum, use the following:

i) Z-General
   a. Z10-Mobilization
   b. Z10-Submittals/Review/Procurement
   c. Z10-Time impact analysis
   d. Z10-Project Closeout

ii) A-Substructure
   a. A10-Foundation

iii) B-Shell
   a. B10-Superstructure
   b. B20-Exterior Walls, Windows. Doors & Finishes
   c. B30-Roofing

iv) C-Interiors
   a. CIO-Interior Construction
   b. C20-Stairs
   c. C30-Interior Finishes

v) D-Services
   a. D I 0-Convening systems
   b. D20-Plumbing
   c. D30-HVAC
   d. D40-Fire Protection
   e. D50-Electrical

vi) E-Equipment & Furnishings
   a. E10-Equipment
   b. E20-Furnishings

viii) G-Building Sitework
   a. G10-Site Preparation
   b. G20 Site Improvements
   c. G30-Site Civil Mechanical Utilities
   d. G40-Site Electrical Utilities

c) PHAS-Phase of work having separate completion milestone or other Contract constraint.

d) WBS-work breakdown structure codes are optional. The WBS codes shall incorporate the Uniformat codes.

C. Calendar

1. The normal workweek project calendar shall exclude weekends and observed holidays as workdays.

2. Special calendars for overtime, shift work, or extended work days may also be defined at the Contractor's option.

D. Constraints

1. No start or finish constraints shall be allowed on activities other than those required by the Contract Documents.

2. The "Must Finish Date" for the project shall be the Contract Completion Date.

E. Logical Relationships

1. Only one logical relationship shall exist between any two activities.

F. Critical Path

1. Only one critical path shall be defined.

3.2 Preliminary Project Schedule

A. It shall include all activities to be accomplished before the review of the Baseline Project Schedule is completed.

B. The Owner will review the Preliminary Project Schedule.

1. It will be the basis of measuring project progress until replaced by the Baseline Project Schedule.

C. The Preliminary Project Schedule shall show:

1. Activity relationships.

2. Project constraints.

3. The critical path.

4. The start and finish dates of all activities.

5. Submittal review and procurement of major piece of equipment.

6. Progress milestone events.

7. The time required for testing, inspection and other procedures required for acceptance of the Work.

8. Activity duration shall be no longer than twenty (20) workdays, except for submittal and procurement activities. If an activity takes longer, it shall be broken into appropriate segments of work for measurement of progress. The Owner, at its sole discretion, may waive this limitation for activities whose progress can be easily monitored.

3.3 Baseline Project Schedule

A. The proposed Baseline Project Schedule shall incorporate all the requirements and information presented in the Preliminary Project Schedule.

B. The proposed Baseline Project Schedule shall include construction activities, activities for the submittal and approval of samples of material and shop drawings, procurement activities for lone lead materials and equipment. fabrication activities for special material and equipment, and installation and testing activities.

C. Activities of the Owner that affect the schedule shall be shown with the RESP code assigned to the Owner.

D. The level of detail shall be subject to review by the Owner.

E. After review of the proposed Baseline Project Schedule, the Contractor shall revise it as requested by the Owner and resubmit it within 7 days of receiving the review comments, until approved by the Owner. The revised schedule shall become the Baseline Project Schedule.

F. Early Completion.

1. It shall be understood that the Contractor's project home office overhead and General Requirements costs are sufficient for the entire Contract Time unless the Contractor provides compelling documentation to the contrary.

a) The Contractor shall explain what means and methods it will employ to achieve early completion.

b) If the Contractor demonstrates to the Owner's satisfaction that early completion date is achievable and that its project home office overhead and General Conditions costs were estimated to cover only the estimated time shown in the early completion schedule. The Contractor has two choices:

i) Agree that the time between the early completion date and the Contract Completion Date is project float. If the Contractor elects this option, the Contractor is not eligible for additional home office overhead or extended General Conditions until the project float is consumed.

or

ii) Request a Contract Change Order reducing the Contract Time.

3.4 Schedule Updates.

A. Monthly Updates

1. Each month, the Contractor shall prepare and submit a schedule update that reflects the progress of the Work through the progress payment cutoff date, for approval by the Owner.

a) The monthly update shall be submitted at the same time as the Progress Payment Request.

b) The update shall incorporate executed and pending Contract Change Orders as they relate to the logic and sequence of the Work, the critical path, and the Contract time.

c) The monthly update shall show resource usage and provide a Cost/Schedule Status Report (CSSR) variance analysis. If resource availability is affecting the progress of the work, the Contractor shall provide a written report of how it intends to address the resource shortages and to recover the lost time.

B. Additional updates may be required when any of the following conditions exist:

1. When a delay results in an extension of Contract Time by either twenty (20) working days or by five (5) percent of the remaining duration of time to complete the Contract, whichever is less.

2. When submittal or procurement delays make rescheduling necessary.

3. When the Project Schedule does not represent actual prosecution and progress of the Work.

4. When there is a revision to the sequence of activities.

5. When an interim milestone date is likely to be missed.

6. When changes occur to the critical path.

7. When a Contract Change Order will result in an extension in the Contract Time.

C. Reports

1. The Contractor shall submit a written report of the actual construction progress with the Project Schedule update.

a) The report shall include the status of submittals and procurement of major items.

b) It shall identify changes to the Project Schedule including added or deleted activities, delays, changes in logic, changes in activity duration, and any other substantive changes to the schedule since the previous report was submitted.

c) If there is a difference in the percent complete progress as measured by the Project Schedule and the percent complete progress as measured by the Progress Payment Request, the Contractor shall explain the reason for the difference.

d) The narrative report shall include a description of problems and delays and an assessment of their effects. It shall identify corrective actions taken or proposed.

D. Time Impact Analysis

1. The update shall incorporate schedule delays and approved time extensions as they occur.

2. The delays shall be assigned an AREA code of "Time Impact Analysis" and an appropriate RESP code assigning ownership as excusable, compensable, or nonexcusable.

3. Provide a "but-for" analysis that classifies the delays as compensable, nonexcusable, and concurrent.

3.5 Three week "look-ahead" schedules.

A. At each weekly meeting, Contractor shall submit to the Owner a look-ahead schedule showing activities to be accomplished during the following three weeks. As a minimum, the look-ahead schedule shall show tasks from the current Project Schedule and tasks requiring the Owner's action.

-- End of Section --

SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

A. General: This Section specifies the administrative and procedural requirements for submittals and substitution submittals required for the performance of the Contracted Work as specified in the following Sections of the GENERAL CONDITIONS of these Specifications:

1. Shop Drawings and Manufacturer's Data.

2. References to Trade Names (as applicable to substitutions).

B. Contractor's Submittals: Required for performance of Contracted Work, include but not limited to the following:

1. Construction Schedule (with updates as required by the Owner).

2. Submittal Schedule (subject to the approval of the Consultant).

3. Daily Construction Reports.

4. Shop Drawings and Manufacturer's Data.

5. Samples.

6. Certificates of Compliance.

7. Requests For Information (RFI).

8. Mock-ups

9. Submittal Log

1.2 AUTOMATED SOFTWARE PROGRAMS

A. The Contractor may use Oracle Primavera (or the latest version) to submit and document all Contractor's Submittals or other software approved by the Owner's Representative.

1. The Contractor shall provide to the Owner a licensed copy of Oracle Primavera (if this software is used) and shall provide training to the Owner at no cost to the Owner.

1.3 SUBMITTAL PROCEDURES

A. General: Conform to the provisions of the GENERAL CONDITIONS of this Project and as may be specifically directed by the Owner.

1. Preparation and processing of submittals shall be coordinated with Contracted Work operations which includes fabrication, purchasing and delivery of work and installation of items so as not to delay Contracted Work operations.

2. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until such other submittals are received by the Owner.

3. Schedule submittals a minimum of 21 calendar days prior to dates the reviewed submittals are needed.

4. Submit electronic copy and 6 hard copies of all shop drawings, catalog data and manufacturer's data unless otherwise indicated in the technical specifications. Include the specifications section number, paragraph and item numbers on the submittal and transmittal clearly indicating the portion of the specifications being addressed in the submittal.

5. Each submittal shall cover a single transaction and not more than one section of the specifications shall be addressed in any submittal, unless approved otherwise by the Architect.

6. Each submittal shall be complete and comprehensive to the item involved, and not partial, or dependent upon another submittal for clarity. Partial or incomplete submittal wall not be acceptable.

B. Coordination and Submittals:

1. Carefully review and coordinate all aspects of each item being submitted.

2. Verify that all such submittal items conform to the Specification requirements noted in the Technical Specification Sections.

C. Submittal Identification: Affix to each submittal, the Prime Contractor's signature certifying that required coordination has been performed and include on an attached label for processing and recording action taken, noting the following:

1. Name of the Project.

2. Date of the submittal.

3. Name and address of Consultant.

4. Name and address of the Prime Contractor.

5. Name and address of the Subcontractor(s).

6. Name and address of the Supplier.

7. Name and address of the Manufacturer.

8. Reference to Specification Section Number and Title.

9. Submittal Number.

10. Reference to Drawing Sheet Number and detail(s).

D. Transmittal of Submittals: Appropriately package and label each submittal for transmittal and handling from Contractor to the Owner using a preprinted standard transmittal form verifying that the Contractor has met the following Owner requirements:

1. Conformance in all respects to the Contract Document requirements.

2. Has reviewed and coordinated all aspects of each submitted item relative to manufacturer's product data, and specifications.

3. That all deviations and/or questions have been approved and/or answered in writing by the Owner and that the approval of such submittals and/or deviations does not relieve the Contractor of responsibility caused by such deviation(s).

4. Contractor is not relieved from responsibilities for errors and omissions in the required submittals as revealed resulting from the Owner's review of such submittals.

5. It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Owner by the second submittal of a submittal item. The Owner reserves the right to withhold moneys due the Contractor to cover the costs of the Architect or other Consultant's review beyond the second submittal. On the third Contractor submittal, the Contractor will be charged $70 per hour for the Owner's or the Consultant's review time.

E. Submittal of Contractor's Construction Schedule:

1. Comply with provisions of Division 01 "Project Schedule."

2. Coordinate the Contractor's submittal of construction schedule with the lists of subcontracts.

F. Certifications: Where specifically indicated in pertinent sections of the specifications, submit proper certification from recognized producer or association in lieu of testing. Certifications shall attest to the product's compliance with requirements of the contract documents.

1.5 MISCELLANEOUS SUBMITTALS

A. Required: Contractor shall prepare a Daily Construction Report recording the following information concerning events at the job-site and submit duplicate copies to the Owner on weekly intervals:

1. List of Subcontractors and Sub-Subcontractors at the site.

2. Approximate count of personnel at the site.

3. High and low temperatures, general weather conditions.

4. Accidents and unusual events.

5. Meetings and significant decisions.

6. Stoppages, delays, shortages, losses.

7. Meter readings and similar recordings.

8. Emergency procedures.

9. Orders and requests of governing authorities.

10. Change Orders received, implemented.

11. Services connected, disconnected.

12. Equipment or system tests and start-ups.

13. Partial completions, occupancies.

14. Substantial completions authorized.

15. Start and finish of activity.

B. Comply with pertinent provisions of the GENERAL CONDITIONS as applicable to the following:

1. Record Drawings, Record Specifications, Record Product Data, Record Samples, and other record submittals.

2. Maintenance and Operating Manuals.

3. Manufacturer's Reference Data.

4. Qualification of Contractor.

5. Warranty and Guarantee.

6. Manufacturer's Recommended Installation Procedures.

7. Materials List of items proposed to be provided as specified in the Technical Specification Sections.

8. Samples, illustrating assembly details, workmanship, fabrication, connections, color selection to be submitted as specified in the Technical Specification Sections.

9. Regarding Concrete, submit Portland Cement Mill Certificates, Concrete Mix Designs, Load Tickets and Product Data.

C. Submital Log: Contractor shall maintain and update the log weekly and furnish to the Commission at each weekly meeting.

END OF SECTION

SECTION 01 35 10
SUSTAINABLE DESIGN REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general requirements and procedures for compliance with CAL-Green (2013).
   1. Compliance with requirements of CALGreen must be used as be used to evaluate substitution requests and comparable product requests.
   2. A copy of the CALGreeen Checklist is attached to the project drwings. Contractor is responsible for delivering submittal documentation demonstrating compliance with each item included on the CALGreen checklist.

B. The contractor shall designate an onsite field staff person contact for all CALGreen documentation, subcontractor supervision and submittal coordination to demonstrate construction compliance with the requirements of CALGreen.

1.2 REFERENCED CODES & STANDARDS

A. California Building Code 2013
B. California Energy Code 2013 Title 24, Part 6
C. 2013 California Green Building Standards Code
D. California Energy Commission Residential Appendices RA3
E. American Society of Heating, Refrigeration & Air Conditioning Engineers (ASHRAE) Standard 55-2004
F. ASHRAE Standard 62.2-2007
G. ASHRAE Standard 52.2-2007
H. South Coast Air Quality Management District (SCAQMD) Rule #1168
I. Green Seal Standard GS-03, Anti-Corrosive Paints, 2nd Edition, January 7,1997
J. Green Seal Standard GS-11, Paints, 1st Edition, May 20, 1993
K. SCAQMD Rule #1113, Architectural Coatings
L. Carpet & Rug Institute's Green Label Plus Program
M. Carpet & Rug Institute's Green Label Program
N. Scientific Certification Systems FloorScore Program
O. ACCA Manual D & J, ASHRAE Handbook of Fundamentals

1.3 DEFINITIONS

A. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-FSC-accredited certification body.
B. Waste Factor: the percentage of framing material order in excess of the estimated material needed for construction. Framing waste factor shall not exceed 10% based on waste cost.
C. Environmentally Preferable Product: a material or product that causes less environmental damage than its conventional alternative. Products with recycled content (25% postconsumer minimum), FSC certified, reclaimed, locally produced or low-emitting all qualify.
D. Locally Produced Materials (Regional Materials): Materials that have been extracted, harvested, recovered, and manufactured, within 500 miles of Project site. A minimum of 90% of product must qualify as extracted, harvested, recovered and manufactured within 500 miles.
E. Recycled Content: Where applicable, the recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value..
   1. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.

2. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.
3. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
4. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.

F. Tropical Wood: Wood that is harvested in one of the continents/countries listed below:
1. AFRICA (except Morocco, Tunisia, Algeria, Egypt, and Libya).
2. ASIA AND SOUTHEAST ASIA (except Japan, North Korea, South Korea, Russia).
3. AUSTRALIA and OCEANA (except New Zealand).
4. CENTRAL AMERICA, CARRIBEAN & MEXICO
5. SOUTH AMERICA (except Uruguay).

1.4 MEETINGS AND SUBMITTALS

A. Contractor shall conduct regular construction meetings as require with all subcontractors, in addition to those meetings required under other Sections. Submit a schedule of Submittals within 30 days of date established for commencement of work.

B. Contractor's personnel who shall attend construction meetings to include, but are not limited to:
1. Contractor's designated field staff person coordinating CALGreen documentation.
2. All Subcontractors with CALGreen coordination responsibilities.
3. All other attendees designated by General Contractor.

C. At a minimum, CALGreen goals and issues shall be discussed at the following meetings:
1. Preconstruction Meeting including these topics:
   a. Erosion and Sedimentation Control Plan
   b. Construction Waste Management
   c. Construction Indoor Air Quality
   d. Materials and Resource Submittal Process
   e. Operations and Maintenance Manuals for Tenants and Facility Manager
   f. One-Hour Walkthrough with Owner and Facility Manager
2. Monthly Progress Meetings shall include:
   a. Progress leading up to pre-dry thermal bypass inspection by HERS rater and/or, Commissioning Agent where applicable
   b. Construction Waste Management Tracking
   c. CALGreen Monthly Progress Reports
   d. Low Emitting Materials Tracking: Adhesives & Sealants
   e. Materials and Resource Submittal Process
   f. Construction Indoor Air Quality
   g. Contractor shall issue monthly meeting minutes shall track progress on these items
3. Subcontractor Meetings:
   a. Review of CALGreeen goals and progress

1.5 SUBMITTALS

A. CALGreen submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated CALGreen requirements.

B. CALGreen Submittal Processing Sheet: Submittals shall include a completed "CALGreen Submittal Processing Sheet" as shown in Appendix B. Backup documentation from manufacturer/vendor is required for all items. The backup documentation may be a letter from

the manufacturer, product cut sheet, MSDS information, or other equivalent document from the manufacturer/vendor. Any incomplete submittals will be returned as revise and resubmit.

C. CALGreen Action Plans: Provide preliminary submittals within 30 days of date established for commencement of the Work indicating how the following requirements will be met:
   1. Quality Management Plan (QMP): Develop and implement a project specific Quality Management Plan incorporating the following elements required to qualify for LEED for Homes Sampling:
      a. Designate and train builder's in-field supervisors and their specific oversight and sign-off responsibilities.
      b. Develop detailed scopes of work for each trade that are focused on quality-critical tasks.
      c. Include scopes of work, and compliance requirements in all trade contracts.
      d. Plan and conduct kick-off meetings for each project where performance goals and consequences of missing performance goals are clearly specified.
      e. Provide appropriate training on green home building, verifications, and performance testing requirements to all trades before starting work on the project.
      f. Require trade and builder supervisor approval and sign-off on all quality-critical measures.
      g. Schedule the Rater to be on-site during the completion of each measure (that requires field testing) in the first five units of the building.
      h. QMP shall reference project specific durability inspection checklist.
   2. Erosion & Sedimentation Control Plan: See Civil drawings.
   3. Optimize Energy Performance: Conduct the following performance tests demonstrating compliance with Title-24, 2013 standards:
      a. Duct Leakage Test (if indicated as a compliance requirement on the project's Title 24 report).
      b. Refrigerant Charge Test (if indicated as a compliance requirement on the project's Title 24 report).
   4. Construction Waste Management Plan: Develop a plan that requires a minimum 50% diversion rate (or higher rate, if required by any local authority) for all construction debris generated onsite.
   5. Construction Indoor Air Quality Plan: Develop plan and implement IAQ onsite practices that includes:
      a. Plan to cover and protect ducts from dust and dirt throughout construction.
      b. Store all lumber and drywall in a way that protects it from moisture
   6. Operations Training: Develop rough itinerary for one hour (minimum) walkthrough of the building before occupancy with the building owner and facility manager. The walkthrough must cover the following items:
      a. Identification of all installed systems
      b. Instruction on how to use the measures and operate the equipment in each unit
      c. Information on how to maintain the measures and equipment in each unit

D. CALGreen Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction activities with CALGreen implentation action plans for the following:
   1. Updated list of all environmentally preferable products.
   2. Waste reduction progress reports complying with Division 1 Section "Construction Waste Management."

E. CALGReen Documentation Submittals
   1. Energy Performance: General Contractor and subcontractors shall coordinate with third party HERS rater and/or Commissioning Agent demonstrating successful completion of

of all HERS testing identified on the project's Title 24 compliance report (PERF-1) and the CALGreen requirements for Commissioning of Energy Systems.

2. HVAC System Testing: HVAC Contractor must provide test results of refrigerant charge tests and duct leakage testing for all mechanical units (where specified on the project's Title 24 compliance report (PERF-1).
3. Environmentally Preferred Materiasl: Completed CALGreen Processing Sheet, product data and backup documentation indicating the following:
   a. VOC limits of paints, finishes, coatings, sealers, stains and shellacs
   b. VOC limits of adhesives and sealants
   c. Green Label Plus number for all carpet systems.
   d. FloorScore certificate number for all resilient flooring systems
   e. Insulation complying with one of the following standards:
      1) Compliance with either "California's Practice for Testing of VOCs from Building Materials Using Small Chambers"
      2) California Collaborative for High Performance Schools (CHPS)
      3) GreenGuard Environmental Institute Children & Schools Program
4. Construction Waste Management: Comply with the Construction Waste Management Plan. The following documents are required for credit compliance:
   a. Documentation of local options for diversion of all anticipated major waste constituents.
   b. Waste tags documenting all waste (by weight) leaving project site and percentage sent to landfill and recycling/sorting center.
   c. A final calculation showing all waste generated onsite and total waste diverted from landfill (minimum of 50% or higher, if a Local Jurisdiction requirements exceed the CALGreen minimum). It is acceptable to use the facilities average construction waste diversion percentage, only if the facility is providing an annual report to the local jurisdiction and the State of California, demonstrating comliance with State and Local Requirements. Contractor is obligated to confirm and conform to the local requirements for documenting and reporting on construction waste diversion.
5. Operations and Maintenance: General Contractor to provide system operation and maintenance documentation for development of the project Operations and Maintenance Manual for Building Owner.
6. Systems Operations Information: General Contractor to provide system operation and maintenance documentation for development of the project Operations and Maintenance Manual for Facility Manager.

1.6 QUALITY MANAGEMENT

A. General Contractor Responsibilities
   1. The General Contractor is responsible for implementing its Quality Management Plan to ensure consistency throughout construction.
   2. Failure to meet any of CALGreen requirements may result in correction, replacement of non-conforming materials, or remediation at the General Contractor's expense.

PART 2 - PRODUCTS

2.1 ENVIRONMENTALLY PREFERABLE PRODUCTS

A. Execution: Reference the 2013 California Green Building Standards Code - Nonresidential Mandatory Measures Sheets, included in the project drawings.

2.2 COORDINATION WITH HERS RATER AND COMMISSIONING AGENT

A. General Contractor to coordinate with HERS Rater, Commissioning Agent and subcontractors to appropriately schedule site visits required for CALGreen Verification Compliance. The HERS

Rater shall conduct site visits for rough (pre-dry wall) and final site verification compliance with applicable CALGreen requirements.

2.3 DURABILITY INSPECTION CHECKLIST

A. The General Contractor shall use the Durability Inspection Checklist developed by the design team to verify that all durability strategies noted in construction documents were installed in the field.

2.4 THIRD-PARTY VERIFICATION

A. The HERS / Commissioning Agent verification process requires proper communication between the Builder and Rater to ensure the required verifications occur without disruption of the construction schedule. Provide a 3-5 business day notice for onsite verifications. Failure to provide adequate notification may result in additional fees or a delay in the construction schedule. It is the responsibility of the Builder to provide notification to the project's HERS Rater and Commissioning Agent for all onsite verifications.

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for quality control services

1. Quality control services include inspections, tests, and related actions, including reports performed by the Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Architect.

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

3. Requirements relate to customized fabrication and installation procedures, not production of standard products.

a. Specific quality control requirements for individual construction activities are specified in Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

b. Specified inspections, tests, and related actions do not limit Contractor's quality control procedures that facilitate compliance with Contract Document Requirements.

c. Requirements for Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 RESPONSIBILITIES

A. General: Comply with requirements Section 00700, General Conditions.

B. Unless otherwise indicated as the responsibility of another identified entity, Owner will employ and pay for services of independent testing laboratory to perform inspections, tests, and other quality control services specified elsewhere in Contract Documents and required by authorities having jurisdiction. Contractor to provide ample notice when Owner and/or Architect is required to inspect work to avoid delays caused by availability of inspection and/or testing.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality control services are the Contractor's responsibility, the Contractor shall employ and pay qualified independent testing agency to perform quality control services. Costs for these services are included in Contract Sum.

a. Where the Owner have engaged testing agency for testing and inspecting part of Work, and the Contractor is also required to engage entity for same or related element, the Contractor shall not employ entity engaged by the Owner, unless agreed to in writing by the Owner.

C. Retesting: The Contractor is responsible for retesting where results of inspections, tests,

or other quality control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether original test was the Contractor's responsibility.

1. Cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

D. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, following:

1. Provide access to Work.

2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.

3. Assist the Owner as requested in taking quantities of representative samples of materials that require testing or assist testing agency in taking samples.

4. Provide facilities for storage and curing of test samples.

5. Provide the agency with preliminary design mix proposed for use for material mixes that require control by testing agency.

6. Provide security and protection of samples and test equipment at Project Site.

E. Duties of Testing Agency: Independent agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect and Contractor in performance of agency's duties. Testing agency shall provide qualified personnel to perform required inspections and tests.

1. Agency shall notify the Architect and Contractor promptly of irregularities or deficiencies observed in Work during performance of its services.

2. Agency is not authorized to release, revoke, alter, or enlarge requirements of Contract Documents or approve or accept any portion of Work.

3. Agency shall not perform any duties of the Contractor.

1.3 SUBMITTALS

A. Reports:

1. Where Owner is responsible for service, independent testing agency shall submit certified written report, in duplicate, of each inspection, test, or similar service to the Architect.

2. If the Contractor is responsible for service, independent testing agency shall submit certified written report, in duplicate, of each inspection, test, or similar service through the Contractor for distribution as noted above.

3. Submit additional copies of each written report directly to the Owner, when the Owner so directs.

B. Report Data: Written reports of each inspection, test, or similar service include, but are

not limited to, following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making inspection or test.
6. Designation of Work and test method.
7. Identification of product and Specification Section.
8. Complete inspection or test data.
9. Test results and interpretation of test results.
10. Ambient conditions at time of sample taking and testing.
11. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting.

C. Quality assurance and control of installation.

1. References.
2. Field samples.
3. Manufacturer's field services and reports.

1.4 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with American Council of Independent Laboratories "Recommended Requirements for Independent Laboratory Qualification" and that specialize in types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on Project shall be authorized by authorities having jurisdiction to operate in State of California.

B. Quality Control Plan: Submit with proposed Schedule of Values and Construction Progress Schedule. Include:

1. Personnel, procedures, instructions, and records to be used.
2. List of control tests the Contractor and subcontractors are to perform.
3. Procedures for reviewing and approving shop drawings, product data, samples and other submittals before submission to the Architect. Include procedures for obtaining field measurements.

4. Method of documenting quality control operation, inspection and testing including samples of proposed forms.

5. Quality Control: Establish system to perform sufficient inspection and tests of items of Work; ensure conformance to Contract Documents for materials, workmanship, construction, finish, functional performance and identification.

   a. Establish for all construction except where Contract Documents provide for specific compliance tests by testing laboratories and engineers employed by the Owner.

   b. Specifically include testing required by various Specification Sections.

1.5 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Submit qualifications of observer to the Owner 30 days in advance of required observations. The Observer shall be subject to approval of the Owner.

B. When specified in individual Specification Sections, require material and product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.

C. Observers shall report observations and site decisions, and instructions given to applicators and installers, that are supplemental or contrary to the manufacturers' written instructions.

D. After each inspection, submit written report to the installer, Contractor, Architect, and Owner listing observations and recommendations. Submit report in duplicate within 30 days of observation to the Architect and Owner for review.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes.

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is the Contractor's responsibility, regardless of assignment of responsibility for inspection, testing, or similar services.

-- End of Section --

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Description of temporary utilities and protection of construction facilities that are to be provided and maintained by the Contractor.

1.2 TEMPORARY UTILITIES

A. Water:

1. Furnish, install and pay for necessary temporary water lines, connections and metering devices and, upon completion of work, remove such temporary facilities.

2. The Owner shall pay for water needed for construction.

3. Provide suitable drainage system, subject to approval of the Architect or Engineer, to carry construction waste water from site to an approved disposal location.

B. Electricity: The Owner will pay for electrical power for the duration of construction.

C. Gas: The Owner shall pay for the gas used in work.

D. Heating and Ventilation:

1. The Owner shall pay for heating and air conditioning for the duration of construction

2. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulation of dust, fumes, or gases.

E. Telephone: The Contractor shall provide at his own expense one (1) non-pay telephone limited to local calls at his expense for use of Contractor and a separate private line for use of the Owner and their authorized representatives respectively.

G. Use means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of work.

H. Make required connections to existing utility systems with minimum disruption to services in existing utility systems. When disruption of existing service is required, do not proceed without the Owner's approval and, when required, provide alternate temporary service.

1.3 CONTRACTOR'S FACILITIES

A. Contractor shall provide temporary offices, storage sheds, fencing, barricades, chutes, elevators, hoists, scaffolds, railings and other facilities as required. Installation and maintenance of such items shall be the responsibility of the Contractor.

C. Contractor's Security Barricade:

1. Contractor shall erect temporary security barricade to separate the area within the project scope of work from areas outside of the project scope and areas used by the Owner for public services during construction. New or used material may be used.

2. Submit proposed barricade design for Architect's review prior to installation.

3. At completion of work, remove barricade and any associated elements and restore affected surfaces to match pre-construction conditions.

1.4 GENERAL ITEMS

A. Staging areas for delivery of materials and equipment will be at locations designated by the Owner.

B. Safety and Security Lighting: Provide 20 foot candles minimum inside building(s) and 5 foot candles outside.

C. Noise Control: Muffle all equipment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

-- End of Section --

SECTION 015100

CONSTRUCTION WASTE MANAGEMENT

PART 1 GENERAL

1.1 DESCRIPTION

A. This section includes requirements for the management of waste materials generated during the construction and/or demolition Work.

B. The Contractor shall provide all necessary equipment and material resources required to meet the requirements of this section.

1.2 CONSTRUCTION WASTE DIVERSION RATE

A. The project shall endeavor to achieve an overall construction waste diversion rate as high as possible but at a minimum of no less than 75-percent.

B. The overall diversion rate must be based on weight.

C. The diversion rate of individual materials can be measured in either weight or volume, but the rate shall be converted into the units selected for calculating the overall diversion rate. All individual material diversions must be converted to a consistent set of units when calculating the overall diversion rate for the all reports and submittals required for the Work.

D. Conversion rate numbers shall be based on standard conversion rate data for construction projects provided by the California Integrated Waste Management Board (CIWMB). This data is available at the following internet location, http://www.ciwmb.ca.gov/Iglibrary/dsg/ICandD.htm.

E. Excavated soil shall not be included in any of the calculations used to ensure compliance with this specification section.

1.3 HAZARDOUS WASTES

A. Hazardous Wastes generated or encountered, as part of the construction process must be processed separately from solid wastes in compliance with state hazardous waste disposal statutes. A firm specializing in hazardous waste disposal shall be contracted to handle these materials. Regulatory agencies controlling these materials include, and are not limited to the Environmental Protection Agency (EPA), State of California, and Orange County.

1.4 SUBMITTALS

A. Construction Waste Management Plan: A waste management plan shall be submitted and approved by the Architect or Owner's Construction Project Manager prior to initiating any site preparation work. The plan shall include the following:

1. Responsible Individual's name for project waste management. Include phone number.

2. Licensed Hauler List for recyclables, hazardous wastes and landfill materials.

Include name and phone number for each used.

3. Materials Processor List for recyclables, hazardous wastes and landfill materials. Include name and phone number for each used. Provide a copy of permit or license for each processor.

4. Salvaged and Donated Materials Facility List. Include name and phone number for each used.

5. Reused Materials Disposition List. Include information on anticipated reuse locations and organization receiving the materials.

6. Deconstruction Outline Plan for salvaged or reused materials.

7. Weight and Final Disposition Estimate for all construction waste materials expected to be generated during the Work.

B. Construction Waste Diversion Summary Reports: The Contractor shall provide to the Architect and Owner's Construction Project Manager, Monthly Status Reports and a Final Report at the end of the Work that includes the following:

1. Final Diversion Disposition of all waste materials generated based on the part of the Work completed as of the date of the report. Dispositions can include: Recycled, Salvaged, Reused (on Site or Off-Site), Donated to charitable and/or non-profit organizations, Hazardous Waste Disposal and Landfill Disposal.

   a. Include name and phone number for each disposition.

   b. Provide a copy of permit or license for disposition where appropriate.

2. Waste Diversion Detailed Calculations for the overall total and each individual diversion percentage for materials recycled, salvaged, reused, donated or disposed of in landfills. Use forms similar to those shown in the Construction Waste Disposal and Diversion Summary Sample Project Forms at the end of this section. Calculations provided shall meet the requirements of paragraph 1.02 of this Section.

3. Salvaged, Reused and Donated Materials Detailed Data briefly describing and listing the quantity of each qualifying item.

4 See Sample Project Forms 1 and 2 – Construction Waste Diversion: Individual Material Summary and Overall Materials Summary for examples of the detailed data required for this submittal.

5. Reports will not be accepted unless the calculations are fully supported and documented by detailed reports that are provided on the basis identified in this Section.

C. Construction Waste Diversion Detailed Reports: The Contractor shall provide, on a weekly basis, for review and approval by the Owner's Construction Project Manager the following data. Also provide the data to the Architect for their records:

1. Diversion Invoices and Receipt copies including weight tickets and manifests that are legible and that clearly identify the project name generating the diverted materials. The data shall also include the name and location of the receiving facility and when the commingling of different materials was used.

2. See Sample Project Form 3 – Construction Waste Diversion: Individual Material Diversion Details for an example of the detailed data required for this submittal.

PART 2 PRODUCTS

NOT APPLICABLE

PART 3 EXECUTION

3.1 SOLID WASTE HANDLING PROCEDURES

A. Recyclable materials will be separated from waste or non-recyclable materials.

B. Recyclable materials can be co-mingled or separated at the construction site.

C. Two solid waste bins should be available at all times — at least one for recyclables and one for waste materials.

D. Collection bins will be located at designated construction locations. A centralized staging area for recycling operations will be created.

E. Store all recyclable materials in a secure area prior to market transportation.

F. The contract waste hauler will be employed to rotate bins as needed. An on-site coordinator will insure efficient bin replacement and quality control. To avoid bin overflows, extra bins (or more frequent pick-up) will be provided during waste surge periods.

G. Construction schedules will be analyzed to identify the timing of specific phases of work and the associated generation of materials such as drywall, insulation, etc. thereby allowing for the provision of an appropriate number of collection bins.

H. Clean contaminated materials prior to placing in collection containers. Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.

I. Arrange for collection by or delivery to the appropriate recycling or reuse facility.

3.2 POTENTIAL RECYCLED MATERIALS

A. These materials could include but are not limited to the following:

- Concrete
- Bricks
- Metals, Ferrous: Steel, Cast Iron, Steel Sheet Metal, etc.
- Metals, Non-ferrous: Aluminum, Copper, Brass, etc.
- Wood: Except creosote and pressure treated.
- Paper Based Products: Bond, Newsprint, Cardboard, Paper, Packing Materials

- Cement Fiber Products
- Rigid Foam
- Glass
- Ceramics
- Plastics
- Carpet and Pad
- Beverage Containers
- Insulation
- Gypsum Board
- Porcelain Plumbing Fixtures
- Paint

3.3 POTENTIAL SALVAGED, REUSED AND DONATED MATERIALS

A. These materials could include but are not limited to the following:

1. Steel Beams and Studs
2. Architectural Metalwork
3. Heavy Timbers
4. Doors and Frames
5. Interior Millwork: Cabinets. Stairs, Trim Work, Paneling, etc.
6. Hardwood Floors
7. Plumbing fixtures, fittings and faucets: Except toilets and urinals using greater than 1.6 and 1.0 gallons per flush respectively.
8. Brick and Block
9. Dimensional Lumber
10. Lighting Fixtures
11. Electrical Equipment
12. HVAC Ductwork and Air Registers

3.4 POTENTIAL NON-RECYCLED MATERIALS

A. These materials could include but are not limited to the following:

- Creosote treated timbers such as railroad ties and telephone poles
- Dry paint chips and completely dried out paint
- Fiberglass insulation
- Isocyanate and urea-formaldehyde foam insulation
- Plastic Laminate scrap and other composite/plastic interior finish material scrap
- Plaster from lath and plaster walls
- Vinyl: Siding, window frames, base, etc.
- Waxed corrugated cardboard
- Worn-out or dirty plastic drop-cloths and tarps

3.5 POTENTIAL HAZARDOUS WASTES

A. These materials could include but are not limited to the following:

1. Lead-Based Paint
2. Asbestos: Found in older pipe insulation; asphalt floor tiles, linoleum, insulation, etc.
3. Polychlorinated Biphenyls (PCBs): Found in electrical oil filled equipment manufactured prior to 1978 such as transformers, switches and fluorescent lamp ballasts. Also found in adhesive, sealant, caulk, glazing putty, roofing material, pesticide vehicle, ink, paper, fabric dye, gaskets. and hydraulic fluid.
4. Solvents, Adhesives and Sealants.
5. HVAC Refrigerants: Contain Fluorinated and Chlorinated compounds.
6. Drinking Fountain Refrigerants: Contain Fluorinated and Chlorinated compounds.
7. Fluorescent Light Tubes: Contain mercury.
8. EXIT signs and Smoke Detectors: May contain unregulated, radioactive tritium. Required to be returned to manufacturer.
9. Contaminated Soils.
10. Pressure Treated Lumber.

3.6 MATERIAL RECYCLING FACILITIES

A. Recycling/Reuse Centers: For information on qualified local solid waste haulers contact the California Integrated Waste Management Board, 8800 Cal Center Drive, Sacramento, California 95826, (916) 255-2200. The CIWMB website also lists wastes recycling facilities in counties throughout the State.

1. Internet location: http://www.ciwmb.ca.gov/ConDemo/Recyclers/.

3.7 MATERIALS SALVAGING FACILITIES AND ORGANIZATIONS

A. Habitat for Humanity: Los Angeles: 1200 Wilshire Blvd., Suite 150, Los Angeles, CA 90017, Phone: (213) 975-9757.

B. Santa Fe Wrecking Company: 1600 South Santa Fe Avenue, Los Angeles, CA 90021, Phone: (213) 623-3119.

C. CAL-MAX: A free service designed to help businesses find markets for non-hazardous materials they have traditionally discarded. CalMAX helps businesses, industries, and institutions save resources and money. Business, schools, and nonprofits can utilize Cal MAX to search for available and wanted materials. Cal MAX helps conserve energy, resources, and landfill space by helping businesses and organizations find alternatives to the disposal of valuable materials or wastes.

D. 25TH STREET RECYCLING, INC. 2121 E. 25th St. Los Angeles, CA 90058 (818) 767-3088 Asphalt and concrete; materials may be mixed.

E. ATKINSON & EARTHSHINE 13633 S. Central Ave. Los Angeles, CA 90059 (800) 763-3000 Concrete, rock, soil, asphalt.

D. For more information call (877) 520-9703 or visit http://www.ciwmb.ca.govJCalMAX

-- End of Section --

CONSTRUCTION WASTE DISPOSAL AND DIVERSION SUMMARY

SAMPLE PROJECT FORM 1 – INDIVIDUAL MATERIAL SUMMARY

NOTE: Provide the actual submittal forms in electronic format.

Project Name: _____ Project Number: _____

Contractor Name: _____ License Number: _____

Contractor Address: _____

Signature: _____ Date: _____

Solid Waste Material	Material Amount (tons or pounds)	Material Amount (Volume)	Conversion Factor and Units	Converted Material Amount (tons)	Recycled	Salvaged	Reused	Donated	Hazardous	Landfill
Landfill Wastes										
Asphalt										
Concrete										
CMU Block										
Bricks										
Metal, Ferrous										
Metal, Nonferrous										
Wood										
Paper Based Products										
Cement Fiber Products										
Rigid Foam										
Glass										
Ceramics										
Plastics										
Carpet and Pad										
Beverage Containers										
Insulation										
Gypsum / Drywall										
Paint										
Land Clearing Debris										
Other Materials (list each):										
1.										
2.										

CONSTRUCTION WASTE DISPOSAL AND DIVERSION SUMMARY

SAMPLE PROJECT FORM 2 – OVERALL MATERIAL SUMMARY

NOTE: Provide the actual submittal forms in electronic format.

Project Name: _____ Project Number: _____

Contractor Name: _____ License Number: _____

Contractor Address: _____

Signature: _____ Date: _____

Construction Waste Disposition	Converted Material Total Amount From Form 1 (tons)	Percentage Of Total
A1. Recycled Materials		
A2. Salvaged Materials		
A3. Donated Materials		
A4. Reused Materials		
A. CONSTRUCTION WASTE DIVERTED		

NOTE: The above percentage must equal or exceed the percentage specified (%A1 + %A2 + %A3 + %A4)

B. Landfill Waste		
TOTAL CONSTRUCTION WASTE (A + B)		

NOTE: The percentage of all construction waste materials must equal 100% (%A1 + %A2 + %A3 + %A4 + %B)

CONSTRUCTION WASTE DISPOSAL AND DIVERSION SUMMARY

SAMPLE PROJECT FORM 3 – INDIVIDUAL MATERIAL DIVERSION DETAILS

NOTE: Provide the actual submittal forms in electronic format.

Project Name: ______________________ Project Number: ______________

Contractor Name: ______________________ License Number: ______________

Contractor Address: ______________________________________

Signature: ______________________ Date: ______________

Solid Waste Material (please identify below)		Material Amount (tons or pounds)	Material Amount (Volume)	Conversion Factor and Units	Converted Material Amount (tons)	Dispositions					
						Recycled	Salvaged	Reused	Donated	Hazardous	Landfill
Receipt/Invoice No. Disposition Date	________ ________										
Receiving Facility Name and Location											
Commingled with other materials? (Yes/No) Please identify which											
Receipt/Invoice No. Disposition Date	________ ________										
Receiving Facility Name and Location											
Commingled with other materials? (Yes/No) Please identify which											
Receipt/Invoice No. Disposition Date	________ ________										
Receiving Facility Name and Location											
Commingled with other materials? (Yes/No) Please identify which											

END OF SAMPLE PROJECT FORMS

SECTION 01 66 00

TRANSPORT, HANDLING & STORAGE

PART 1 GENERAL

1.01 DESCRIPTION (PREPARATION FOR SHIPMENT)

A. Shop prime:

1. Structural steel surfaces not to be encased in concrete shall be shop primed with specified primer. Refer to Section 05120 - Structural Steel for primer.

2. After factory tests and acceptance, machined and/or polished surface to remain unpainted shall be coated with minimum 2 mil thickness of rust preventive compounds, or as recommended by manufacturer.

B. Protection:

1. Protect steel surfaces to ensure that their cleanliness during shipment, storage and erection.

2. Protect structural steel against damage from all sources whether mechanical, chemical or environmental.

1.02 TRANSPORTATION AND HANDLING

1. Verification of intent to ship, arrival date and cartage company must be made known to Owner by Contractor.

2. Immediately on delivery, a complete and thorough inspection of the structural steel by Commission and Contractor shall be made. Any damages incurred in shipping or handling shall be replaced promptly by Contractor at no cost to the Commission.

1.03 STORAGE AND PROTECTION

1. Storage and protection shall be the responsibility of the Contractor.

2. Provide complete weather protection for stored structural steel.

3. Inspection of stored structural steel to assure it will be free from damage or deterioration shall be provided at no additional cost.

4. All storage, handling and rehandling costs, insurance and responsibility for protection and proper installation of such material is the obligation of the Contractor. No payment, pursuant to this provision for material shall in any way relieve the Contractor of its responsibility to obtain or provide, at its expense, any such material or release the Contractor from any of its obligations under this Contract.

END OF SECTION

SECTION 01 70 00

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Sections of the Specifications, apply to this section.

1.02 SUMMARY

This section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:

A. Inspection procedures.
B. Project record document submittal.
C. Operation and maintenance manual submittal.
D. Submittal of warranties.
E. Final cleaning.

1. Closeout requirements for specific construction activities are included in the appropriate sections.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request:

1. In the application for payment that coincides with, or first follows, the date substantial completion is claimed, show one hundred (100) percent completion for the portion of the Work claimed as substantially complete.

a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the contract sum.

b. If one hundred (100) percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Prepare and deliver to the Owner a completion list enumerating all items of work not complete, the work required to complete the items of work, the reason that each item

is not complete, the action taken by the Contractor to complete all other work in light of the item at work remaining, and the date that the item of work will be completed.

3. Advise the Owner of pending insurance changeover requirements.

4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

5. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

6. Submit record drawings, operation and maintenance manuals, project photographs, damage or settlement surveys, property surveys, and similar final record information.

7. Deliver tools, spare parts, extra stock, and similar items.

8. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.

9. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mock-ups, construction tools, and similar elements.

10. Complete final cleanup requirements, including touch-up painting.

11. Touch up and otherwise repair and restore marred, exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Owner and the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Owner and the Architect will repeat inspection when requested and assured that the Work is substantially complete. If, after making such reinspection, the Owner determines that the work is not substantially complete, the Contractor shall be responsible for the cost that the Owner and the Architect incurred in the performance of additional inspections for the purpose of determining Substantial Completion.

2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the contract sum.

3. Submit a certified copy of the architect's final inspection list of items to be completed or corrected, endorsed, and dated by the architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the architect.

4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.

5. Submit consent of surety to final payment.

6. Submit a final liquidated damages settlement statement.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure: The Owner will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed.

1. Upon completion of reinspection, the Owner will prepare a certificate of final acceptance. If the Work is incomplete, the architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.

2. If necessary, reinspection will be repeated, and the Contractor shall be responsible for the costs of the Owner and the Architect incurred in the performance of the reinspection or reinspections.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.

2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.

3. Note related Change-Order numbers where applicable.

4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets and print suitable titles, dates, and other identification on the cover of each set.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one (1) copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.

3. Note related Record Drawing information and product data.

4. Upon completion of the Work, submit record Specifications to the architect for the Owner's records.

D. Record Product Data: Maintain one (1) copy of each product data submittal. Note related Change Orders and markup of Record Drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.

2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.

3. Upon completion of markup, submit complete set of record product data to the architect for the Owner's records.

E. Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the architect and the Owner's personnel at the Project site to determine which samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's sample storage area.

F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the architect for the Owner's records.

G. Maintenance Manuals: Organize operation and maintenance data as described in Section 01 70 30, Operational and Maintenance manuals.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.

11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

B. As part of instructions for operating equipment, demonstrate the following procedures:

1. Startup.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

C. See additional requirements for training in the specification sections.

3.2 FINAL CLEANING

A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1, Section 01 74 00, "Cleaning."

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

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

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean and remove

stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the project of rodents, insects, and other pests. Provide six (6) copies of each pest control inspection report to the Owner.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

* * *

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Emergency manuals.
2. Operation manuals for systems, subsystems, and equipment.
3. Maintenance manuals for the care and maintenance of products, materials, and finishes and systems and equipment.

B. See Technical Specification Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.2 SUBMITTALS

A. Manual: Submit **2 hard copies** and an electronic copy provided on CD of each manual in final form at least **[10] ten** days before final inspection.
1. Correct or modify each manual to comply with Owner Representative's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Owner's Representative.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble

instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for [fire] [flood] [gas leak] [water leak] [power failure] [water outage] and [equipment failure].

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

2.3 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in the manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:

D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training videotape if available, that detail essential maintenance procedures:

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

END OF SECTION

SECTION 01 74 00

CLEANING

PART 1 GENERAL

1.1 SUMMARY

A. Perform cleaning in a proper and timely manner, and as specified.

PART 2 PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use tools or cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.

PART 3 EXECUTION

3.1 CLEANING

A. General: Provide cleaning operations when indicated. Employ experienced workers or professional cleaners for cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

B. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion for the entire Project or a portion of the Project.

1. Clean the Project site, in areas disturbed by construction activities, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits.

2. Remove tools, construction equipment, machinery and surplus material from the site.

3. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

4. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.

5. Broom clean concrete floors in unoccupied spaces.

6. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

7. Remove labels that are not permanent labels.

8. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.

9. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.

10. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

11. Replace air disposable filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.

12. Clean kitchen equipment to a sanitary condition, ready and acceptable for its intended use.

13. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.

14. Leave the Project clean and ready for occupancy.

C. Pest Control: Engage an experienced licensed exterminator to make a final inspection, and rid the Project of rodents, insects, and other pests. Comply with regulations of local authorities.

D. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.

E. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of in a lawful manner.

-- End of Section --

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Project Record Documents required include:

1. Marked-up copies of Contract Drawings.
2. Marked-up copies of Shop Drawings.
3. Newly prepared Drawings.
4. Marked-up copies of Specifications, addenda and Change Orders.
5. Marked-up Product Data submittals.
6. Record Samples.
7. Field records for variable and concealed conditions.
8. Record information on Work that is recorded only schematically.

B. Maintenance of Documents and Samples: Store record documents and Samples in the field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry, legible condition. Make documents and Samples available at all times for inspection by the Architect.

1.2 RECORDING

A. Record drawings shall include dimensions from not less than two permanent and salient building points.

B. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project.

C. The Architect will periodically review record documents to assure compliance with this requirement.

1.3 PROCEDURES

A. Promptly following Contract Award, General Contractor shall obtain from the Owner one complete set of Specifications and prints of the Contract Drawings and mark them as "Project Record Documents."

B. Timing Of Entries: Make entries within 24 hours after receipt of information.

C. Contractor shall be responsible for maintaining and recording changes on "Project Record Documents" set.

D. Do not use "Project Record Documents" set for any purpose except entry of new data and for review by the Architect and Owner's Inspector. Maintain separate job sets for subcontractors and workers daily use.

E. Maintain "Project Record Documents" set at job site where designated by the Architect.

F. Use all means necessary to protect "Project Record Documents" set from deterioration, loss or damage until completion of work.

G. Making Entries On "Project Record Documents" Drawings: Using an erasable color pencil, other than blue, not ink or indelible pencil, clearly describe change by note and by graphic line as required. Date entries. Call attention to entry by a "cloud" around area or areas affected. In event of overlapping changes, different colors may be used for each change.

1. Changes due to approved change orders shall be indicated by referencing change order number and scope of change on the "Project Record Documents" next to each recorded entry.

2. Location and depth below finish grade or above ceilings and attic spaces of utilities shall be fully dimensioned and indicated on "Project Record Documents". Dimensions shall be taken to building lines or permanent landmarks.

H. The Architect's approval of current status of "Project Record Documents" will be a prerequisite to the Architect's approval of requests for progress payments and request for final payment.

1. Progress Approvals: Prior to submitting each request for progress payments, secure the Inspector's approval of status of "Project Record Documents".

2. Prior to submitting request for final payment and final inspection, General Contractor shall submit "Project Record Documents" set to the Inspector, with transmittal letter, in duplicate, for approval and further processing.

3. The General Contractor shall certify that the "Project Record Documents" are complete and accurately reflect all changes or modifications to the original Construction Documents.

-- End of Section --

SECTION 01 78 46

PROJECT ADDED STOCK

PART 1 GENERAL

1.1 DESCRIPTION

A. Work in This Section: Principal items include:

1. Providing Added Stock Materials to the Owner.

B. Related Work Not in This Section:

1. Project Closeout.

2. Documents affecting Work of this Section include, but are not necessarily limited to, sections in all divisions of these Specifications.

1.2 QUALITY ASSURANCE

A. Delegate the responsibility for maintenance of Added Stock to one person on the Contractor's staff as approved by the Owner.

B. All materials shall be delivered to the Owner in original, unopened containers bearing the manufacturer's original labels.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01 33 00.

B. Prior to submitting request for final payment, transmit the final Project Added Stock to the Owner and secure his approval.

1.4 ADDED STOCK PROTECTION AND HANDLING

A. Maintain the Added Stock completely protected from deterioration, loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.

PART 2 PRODUCTS

2.1 ADDED STOCK

A. All materials delivered as Added Stock shall exactly match the materials used on the project. Materials shall be from the same dye-lots, production runs, and color matching and match the installed materials.
B. All Added Stock materials shall be delivered to the Owner's warehouse. Confirm exact location with Owner's Representative prior to delivery.

PART 3 EXECUTION

3.1 SCHEDULE OF MATERIALS

Section/ Drawings	Item	Quantity
07195	Cementitious sealer	5 gallon
07900	Sealants/Calking	5 tubes each type of sealant used on the project
08710	Finish Hardware	6 key blanks for each lock
09300	Ceramic Tile	50 pieces each color/pattern
09500	Acoustical Panel Ceiling	2 sealed unopened boxes
09651	Resilient Flooring /Static Dissipative Flooring	2 unopened boxes each color/ pattern.
09653	Rubber Wall Base	50 linear feet of rubber base with 10 outside and 10 inside corners.
09680	Carpeting	2 Boxes of each color of carpet tile
09900	Paint	5 gallons each color/finish
10600	Recycled Plastic Wall Guard	1 box

3.2 DELIVERY

A. Transmit all materials to the Owner in one submission at the completion of the Project. The Contractor is not to use the Added Stock materials for Punchlist and repairs.

-- End of Section --

SECTION 02050

DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Carefully demolish all existing structures and improvements indicated or noted on the Contract Drawings to be demolished and remove them from the premises.

B. Related Work Sections:

1. Documents affecting work of this Section include, but are necessarily limited to the GENERAL CONDITIONS, and Sections in GENERAL REQUIREMENTS of DIVISION 1 of these Specifications.

2. Division 01: Construction And Demolition Waste Management

3. Division 01: Construction And Demolition Debris Recycling

1.2 SUBMITTALS

A. None required

1.3 QUALITY ASSURANCE

A. Labor: Use adequate numbers of skilled laborers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Codes and Regulations: Comply with all applicable Government Codes and Regulations especially meeting safety standards and regulations of CAL/OSHA. Provide additional measures, added materials and devices as may be needed as directed by the Owner's Representative or the Consultant, at no added cost to the Owner.

1.4 MISCELLANEOUS GENERAL REQUIREMENTS

A. General: Comply with the following as specified in the General Conditions and Division1.

1. Erection and maintenance of protections.

2. Dust Control.

3. Repair of Damages.

4. Cleaning and removal of rubbish and debris.

B. Notifications Concerning Utilities: All Utility Companies owning conduit, pipes and sewers running to and from Owner's properties to be notified to make arrangements for their removal or capping in accordance with instructions from the Owner's Representative.

C. Protection of Site Improvements: As required by approved methods as and as authorized by the Owner's Representative as follows as applicable:

1. Protect all existing improvements that are to remain in-place.

2. Remove all protections when work is completed and when authorized by the Owner's Representative.

D. Repair of Damage:

1. The Contractor shall repair any damage to existing improvements that may have been caused by his or her operations outside the scope of work of this Section, at no cost to the Owner.

2. Methods: Repair or replace existing damaged improvements with new materials as necessary for restoration of damaged areas or surfaces to a condition equal to and matching that existing prior to damage occurrence, to the full satisfaction and approval of the Owner's Representative.

E. Scheduling of Work Operations: Submit demolition and removal schedule and procedures to the Owner's Representative within 15 days after date of Owner-Contractor Agreement.

F. Non-Interference: Conduct demolition and removal operations in a manner to minimize interference with Owner's operations in adjacent areas. Maintain protected egress and access at all times during Contracted Work operations.

G. Control the generation of dust by wetting down materials that are susceptible to the production of particulate matter. Use an approved dust palliative where appropriate.

1.5 WORK PLAN

A. Submit a demolition work plan to the Owner's Representative. The procedures planned and proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, careful removal and protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services.

B. The plan shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 SITE CONDITIONS

A. Examine the Job-site areas and conditions under which work of this Section will be performed.

B. Correct conditions detrimental to timely and proper completion of Contracted Work as directed by the Owner's Representative. Do not proceed with Contracted Work until detrimental conditions have been corrected.

3.2 DEMOLITION

A. Prior to start of demolition operations carefully study the Contract Drawings and these Specifications. In the company of the Owner's Representative, visit the job-site as necessary to further verify the extent of the work to be performed under this Contract.

B. Discovery of Hazardous Substances: Conform to provisions of the GENERAL CONDITIONS. The Owner will initiate a hazardous materials survey prior to award of contract.

C. Coordination: Fully coordinate work of this Section with other Contracted Work operations so as not to interfere with Owner's operations on the job-site.

3.3 REPLACEMENTS

A. In the event of demolition of items not so scheduled to be demolished or removed, promptly replace such items to the approval of the Owner's Representative, at no added cost to the Owner.

3.4 CLEAN-UP AND DISPOSAL

A. Comply with applicable provisions specified in DIVISION 1 GENERAL REQUIREMENTS of these Specifications.

B. Demolished materials are required to be diverted to certified facilities and recycled in compliance with applicable jurisdictional requirements. Provide required documentation.

3.5 BURNING

A. The use of burning at the project site for the disposal of refuse and debris will not be permitted.

3.6 USE OF EXPLOSIVES

A. Use of explosives will not be permitted.

-- End of Section --

SECTION 02508

SIGNAGE (POST AND PANEL TYPE)

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install post and panel type signage as indicated on the drawings and specified.

1.2 REFERENCES

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A117.1: (2003) Providing Accessibility and Usability for Physically Disabled People

1.4 SUBMITTALS

A. Shop Drawings: Submit drawings including elevations of each type of sign; dimensions, details, and methods of mounting; shape and thickness of materials; and details of construction.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

A. Signs shall be as manufactured by Western Highway Products Inc., CAS Sign Systems Co., or equal.

B. Signs shall be complete with lettering, framing, and related components for a complete installation. Materials and equipment shall be the standard product of a manufacturer regularly engaged in the manufacture of the products. Items of equipment shall essentially duplicate equipment that has been in satisfactory use at least 2 years prior to bid opening.

2.2 FABRICATION

A. Posts: Provide one-piece aluminum or galvanized steel posts. Posts shall be designed to accept panel framing system and shall be designed to permit attachment of panel framing system without exposed fasteners. Caps shall be provided for each post.

B. Panel Framing System: Panel framing consisting of aluminum sections and interlocking track components shall be designed to interlock with posts with concealed fasteners. Top and bottom framing members shall be removable to permit panel removal.

C. Panels: Modular message panels shall be provided in sizes shown on drawings. Panels shall be fabricated a minimum of 0.125-inch aluminum, 0.125-inch acrylic, or 0.125-inch FRP. Panels shall be designed to be interchangeable. Panels with metal return sheeting shall have welded corners, ground smooth.

D. Fasteners for signage shall be vandal resistant throughout the entire project.

2.3 FINISHES

A. Post finish shall be semi-gloss baked enamel or two-component acrylic polyurethane.

B. Metal panel framing system finish shall be baked enamel or two-component acrylic polyurethane, or anodized as standard with the sign manufacturer.

2.4 GRAPHICS

A. Graphics and message shall be applied to panel using the silkscreen process. Silkscreened images shall be executed with photo screens prepared from original art. No handcut screens will be accepted. Original art shall be defined as artwork that is a first generation stencil of the original specified art. Edges and corners shall be clean. Rounded corners, cut or ragged edges, edge buildup, bleeding or surfaces pinholes will not be accepted.

B. Graphics, message, and colors shall be in accordance with ANSI A117.1. The type face shall be Helvetica medium.

PART 3 EXECUTION

3.1 INSTALLATION.

A. Signs shall be installed at locations shown on the drawings, plumb and true at mounting heights indicated.

B. Permanent mounting shall be provided by embedding posts in concrete foundations. Foundations shall be not less than 12 inches in diameter and 24 inches deep. Shape the top of the foundation to drain water away from the post. Concrete shall have a minimum compressive strength of 2000 psi at 28 days.

3.2 PROTECTION AND CLEANING

A. The work shall be protected against damage during construction. Keep the signage clean until final acceptance of the work.

-- End of Section --

DETECTABLE WARNING PAVERS
Section 02797

PART 1 GENERAL

1.1 SUMMARY

A. Furnish materials, labor, transportation, services, and equipment necessary to furnish and install Architectural Concrete Pavers as indicated on drawings and as specified herein.

1.2 REFERENCES

A. American Society of Testing Materials (ASTM):

1 ASTM C-150
2 ASTM C-33
3 ASTM C-140
4 ASTM C-293
5 ASTM C-1028
6 ASTM C501, 50
7 ASTM C241

B. Performance Requirements 1.Compressive Strength at the time of delivery to be not less than 5,000 psi; Averaging 7,000 psi when tested in accordance with ASTM C-140.

1. Water Absorption shall not be greater than 5-1/2% to 6-1/2%, when tested in accordance with ASTM C-293.

2. Flexural Strength shall not be less than 900psi average. 950psi when tested in accordance with ASTM C-293.

3. Static Coefficient of Friction ASTM C-1028 conditionally slip resistant:

   a. Wet: 0.50 - 0.60

   b. Dry: 0.60 -0.70

1.3 QUALITY ASSURANCE

A. Manufacturer: Company specializing in the manufacture of pre-cast concrete pavers for a minimum of three (3) years.

B. Installation shall be by a contractor and crew with at least (1) year of experience in placing concrete pavers on projects of similar nature or dollar cost.

C. Installation Contractor shall conform to all local, state/provincial licensing and bonding requirements.

1.4 SUBMITTALS

A. Submit installation instructions as recommended by manufacturer.

B. Submit full size sample sets of concrete paving units to indicate color and shape selections. Color will be selected by Architect / Engineer / Landscape Architect / Owner from manufacturer's available colors.
C. Submit sieve analysis for grading of bedding and joint sand.

recommendations.

D. Color Blending: Factory-blend pre-cast paver that has a natural color range so products taken from one container will have the same range as products from a separate container.

E. Cleaner: Liquid neutral chemical cleaner with pH factor between 7 and 8, of formulation recommended by sealer manufacturer for type of precast paver used.

F. Sealer: Colorless, slip and stain resistant penetrating or acrylic sealer with pH factor between 7 and 8 that does not affect color or physical properties of precast paver surface.

2.3 MANUFACTURED UNITS

A. Precast Pavers

1. Sizes: 11.875" x 11.875" x 2" (Actual)

2. Square face edges or beveled.

3. Finish: Rough ground and shot blast surface.

4. Color:
   a. Colors to be selected from Tile Tech stocking color chart.

5. Concrete pavers are not factory sealed.

2.4 MIXES

A. Aggregate: natural, sound, crushed marble chips without excessive flats or flakes

B. Matrix Pigments: Pure mineral or synthetic pigments, resistant to alkalies and non-fading. Mix pigments with matrix to provide required colors.

C. Face layer: Minimum depth of 3/8" (nominal) and shall include 70% coverage of the Paver face with marble aggregate.

2.5 FABRICATION

A. Mechanically vibrated in the molds.
B. Hydraulically pressed by 600 tons of pressure.
C. Moisture cured with 100% humidity for 24 hours.
D. Factory finish: In-line grinding and shot blasting.

2.6 SAND BEDDING COURSE

A. Bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Limestone screenings or stone dust shall not be used.

PART 3A - EXECUTION (STANDARD METHOD)

3.1 EXAMINATION

A. Verify that subgrade preparation, compacted density and elevations conform to the specifications. Compaction of the soil subgrade to at least 95% Standard Proctor Density per ASTM D 698 is

D. Submit test results from an independent testing laboratory for compliance with performance requirements specified herein.

E. Indicate layout, pattern, and relationship of paving joints to fixtures and project formed details.

F. Submit two copies of written instructions for recommended maintenance.

1.5 PROJECT CONDITIONS

A. Do not install sand or pavers during heavy rain or snowfall.
B. Do not install sand and pavers over frozen base materials.
C. Do not install frozen sand.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Packaging and Shipping: Precast pavers to be stretch wrapped in rows and banded on pallets, delivered in original unopened packaging with legible manufacturer identification, including size, quantity, manufacture date and inspector initials.

B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.

1.7 WARRANTY

A. Manufacturer/Installer shall warrant installed system for a period of 3 year from date of substantial completion against failure of workmanship and materials.

1.8 MAINTENANCE

A. Extra Materials: Deliver supply of maintenance materials to the owner. Furnish maintenance materials from same lot as materials installed, and enclosed in protective packaging with appropriate identifying labels.
1. Furnish not less than 1 percent of total product installed maintenance stock for each type, color, pattern and size of paver product installed.

PART 2 - PRODUCTS

2.1 DETECTABLE WARNING / ADA TRUNCATED DOME PAVERS

A. Manufacturers
1. Acceptable Manufacturer
a. Tile Tech Industries - Los Angeles, CA - (213) 489-25555, www.TileTechPavers.com
2. Drawings and installation specifications are based on manufacturer's proprietary literature from Tile Tech Industries. Other manufacturer's shall comply with the minimum levels of material specifications and detailing indicated on the drawings or specified herein.

2.2 MATERIALS

A. Portland Cement: ASTM C-150 specifications for Portland Cement.

B. Aggregates: All aggregates to meet ASTM C-33 specifications, cleaned and properly graded to size. Aggregate shall be blended to meet individual project requirements. Aggregates to meet ASTM C241 HA 10 minimum.

C. Coloring: Pigments used shall be inorganic, resistant to alkalinity and used per manufacturer's

recommended. Higher density or compaction to ASTM D 1557 may be necessary for areas subject to vehicular traffic. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Architect/Engineer should inspect subgrade preparation, elevations, and conduct density tests for conformance to specifications.

B. Verify that Geotextiles, if applicable, have been placed according to specifications.

C. Verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations conform to the specifications.

D. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.

E. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed or anticipated vehicular loads.

3.2 INSTALLATION

A. Spread a sand/cement mix evenly over the base course and screed to a nominal 1 in. (25 mm.) thickness, not exceeding 1-1/2 in. (40mm) thickness. The screened sand should not be disturbed. Place sufficient sand to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.

B. Ensure that pavers are free of foreign materials before installation.

C. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.

D. Fill gaps at the edges of the paved area with cut pavers.

E. Cut pavers to be placed along the edge with a wet masonry saw.

G. Tamp into bedding or use a low amplitude, high frequency plate vibrator to vibrate the pavers into the sand (cover vibrator plate to prevent surface damage to pavers).

H. Sweep dry joint sand into the joints.

I. Sweep off excess sand when the job is complete.

J. The final surface elevations shall not deviate more than 1/16 in. under a 10 ft. (3 m) long straightedge.

K. The surface elevation of pavers shall be 1/8 in. to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

3.3 CLEANING AND SEALING

A. Wash entire surface with neutral cleaner.
1 pH factor between 7 and 10.
2 Biodegradable phosphate free.

B. Rinse with clean water and allow to dry thoroughly.

C. Apply sealer in accordance with manufacturer's directions.
1 pH factor between 7 and 10
2 Non-discoloring or amber.
3 Penetrating type designed especially for precast concrete pavers.

PART 3B – EXECUTION (BONDED METHOD)

3.1 EXAMINATION

A. Inspect areas to receive underbed for:
1 Defects in existing concrete work that affect proper execution of Paver installation.
2 Variances beyond allowable tolerances.

Note: Structural cracks in substrate will usually be transmitted through Pavers. All cracks to have control joint installed directly over crack. Small cracks can use a fracture membrane system.

3.2 INSTALLATION

A. Underbed
1. Thoroughly saturate concrete with water, slush and broom with neat cement paste.
1. Place underbed mix approximately 1" to 1 1/2".
2. Screed underbed to elevation of "paver thickness" below finished floor elevation.

PART 3C – EXECUTION (THIN SET METHOD)

3.1 EXAMINATION

A. Inspect areas to receive underbed for: a) Defects in existing work that affect proper execution of Paver installation. b) Variances beyond allowable tolerances. c) Maximum variation in sub floor not to exceed 1/8" in 10'0" from required plane.

3.2 INSTALLATION

A. Thin set application
1 Apply latex cement mortar, conform with ANSI A118.4 utilizing a 3/8" x 1/4" square notch trowel.
2 Apply thin set for a minimum of 1/8" setting bed. Allow for thin set manufacturers' recommended setting time before grouting (if required).
3 Coat underside of each unit with latex cement mortar, firmly set, tamp into bedding to ensure minimum 95% surface contact with mortar bed.
4 All units to be installed level, square, parallel, except where otherwise indicated in a true plane with adjacent units and other floor finishes.
5 Maintain a maximum joint of 1/32" or less.

B. Control Joints
1 Over all structural expansion joints
2 All perimeter edges to have soft joints.

END OF SECTION

SECTION 03100

CONCRETE FORMWORK

PART 1 GENERAL

1.1 SUMMARY:

A. Section Includes: Furnishing, installing, and removing of forms for cast-in-place concrete.

B. Related Documents: The Conditions of the Contract and Division 1 apply to this section as fully as if repeated herein.

1.2 REFERENCES:

A. The editions of the specifications and standards reference herein, published by the following organizations, apply to the formwork only to the extent specified by the reference.

1. American Concrete Institute (ACI)

2. Corps of Engineers

3. U.S. Department of Commerce Product Standard (PS)

4. Western Wood Products Association (WWPA)

5. West Coast Lumber Inspection Bureau (WCLIB)

1.3 REGULATORY REQUIREMENTS:

Except as modified by the requirements specified herein or the details on the drawings, formwork shall conform to Building Code.

PART 2 PRODUCTS

2.1 MATERIALS

A. Forms for Unexposed Concrete: Form concrete surfaces which will not be exposed in the finished structure with plywood, lumber, metal or other acceptable material. Side forms for footings, grade beams, and similar conditions may be omitted if concrete can be deposited in clean-cut trenches without cave-ins.

1. Lumber: Standard or better grade Douglas fir, meeting the requirements of WCLIB Standard Grading Rules No. 16, or WWPA "Western Lumber Grading Rules 88." Use boards which are surfaced on at least 2 edges and one side for a tight fit. B-B Plyform, Class I, Exterior grade meeting the requirements of PS 1-83, 5/8 inch minimum thickness for 12 inch stud spacing and 3/4 inch minimum thickness for 16 inch stud spacing.

2. The re-use of sound, existing metal and wood formwork is encouraged.

3. Although not required for LEED point compliance, the use of concrete formwork that is made from recycled material or FSC certified wood is encouraged

Potential Manufacturers include:
a. Caraustar ICPG Corp.
b. Fab-Form Industries Ltd.
c. ROME World Trade Company, LLC
d. Sonoco Products Co.
e. SureVoid Products, Inc.

B. Forms for Exposed Finish Concrete: Construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practical sizes to minimize number of joints. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.

1. Where an as cast surface finish is indicated, provide High Density Overlay Plyform Class I Exterior plywood meeting the requirements of PS 1-83.

2. Where sacked, rubbed or sandblasted surface finish is indicated, provide B-B Plyform Class I Exterior plywood meeting the requirements of PS 1-83.

3. The re-use of sound, existing metal and wood formwork is encouraged.

4. Although not required for LEED point compliance, the use of concrete formwork that is made from recycled material or FSC certified wood is encouraged
Potential Manufacturers include:
a. Caraustar ICPG Corp.
b. Fab-Form Industries Ltd.
c. ROME World Trade Company, LLC
d. Sonoco Products Co.
e. SureVoid Products, Inc.

C. Framing, Studding and Bracing: "Standard" or "Construction" grade Douglas fir, rough or S4S, meeting the requirements of the WCLIB "Standard Grading Rules No. 16" or WWPA "Western Lumber Grading Rules 88".

D. Form Ties and Spreaders: Standard metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Inner tie rod shall be left in concrete when forms are removed. Wire ties or wood spreaders will not be permitted.

E. Form Coating: Provide biodegradable, or water based form coatings, Nox-Crete, or equal, Nongrain raising and nonstaining type that will not leave residual matter on surface of concrete or adversely affect proper bonding of subsequent application of other material applied to concrete surface. Coatings containing mineral oils or other nondrying ingredients will not be permitted. Form coating for use with form liners shall be of type recommended by form liner manufacturer.

F. Nails: Common wire, steel.

PART 3 EXECUTION

3.1 DESIGN OF FORMWORK:

A. Carry out the engineering and construction of all formwork, shoring and bracing, by and under the direction of the Contractor. The Contractor shall be held responsible for the engineering, construction, maintenance, and safety of all formwork during the entire construction period.

B. The formwork shall be designed for the loads and lateral pressures outlined in Part 3, Section 102, of ACI 347R-88, and lateral forces as specified by the CBC.

3.2 CONSTRUCTION:

A. Earth Forms: Earth forms may be used for footings only where the soil is firm and stable and the concrete will not be exposed to view. Where earth forms are to be used, excavations shall be cut neat and accurately to size for placing of concrete directly against the excavation. Except for bottom of footings, allow for one inch additional concrete beyond the dimensions or profiles shown on the drawings. Construct wood edge strips at each side of trench at top to secure reinforcing and prevent trench from sloughing. Form sides of footings where earth sloughs more than six inches. Earth forms shall be tamped firm and cleaned of all debris, water, and loose material before depositing concrete. Where footing is on dry soil or pervious material lay waterproof sheathing paper over surfaces to receive concrete.

B. Wood forms: Construct forms of sound material to the correct shape and dimensions, mortar tight, and of sufficient strength, and so braced and tied together that the movement of men, equipment, materials, or placing and vibrating the concrete will not throw them out of exact shape under imposed loads. They shall be so constructed that they may be easily removed without damage to the concrete. Before concrete is placed in forms, carefully verify the horizontal and vertical position of the form and correct inaccuracies. Complete wedging and bracing in advance of placing of concrete.

C. Form Liners: Position liners on the forms so that grooves and joints are aligned with tie slots. Attach form liners to plywood forms with staples and to metal forms with sheet metal screws or pop rivets. Space fasteners not to exceed 4 inches on centers around the perimeter of each sheet. Place staples perpendicular to the edges. Install staples using a power staple with pressure regulated so that staple heads are driven flush with the surface. Seal joints between liners and joints at top and bottoms of liners with foam tape placed on the back side of liners.

D. Framing bracing, supporting members, and centering shall be of ample size and strength to safely carry, without deflection, dead and live loads to which forms may be subjected, and shall be spaced sufficiently close to prevent bulging or sagging of forms. Concrete out of line, level, or plumb will be cause for rejection of the whole construction affected.

E. Tolerances: Formwork shall be constructed so as to ensure that the concrete surfaces will conform to the tolerances of Section 203.1, ACI 347-78. Camber formwork where necessary to compensate for anticipated deflections due to fresh concrete and construction loads.

F. Chamfered Corners: Chamfer exposed corners 3/4 inch, unless otherwise indicated. Provide molding in forms for all chamfering required.

G. Form Ties: Use ties of sufficient strength and in sufficient quantities to prevent spreading of the forms. Place ties at least 1 inch away from the finished surface of the concrete.

H. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

I. Joints: Install construction joints, isolation joints, shrinkage control joints and expansion joints as approved. Coordinate location of construction joints, particularly those exposed to view to walls and columns, in advance of concrete placement.

J. Embedded Piping and Rough Hardware:

1. Coordinate with other trades who are required to fasten materials to formwork, or who are required to insert piping, boxes, bolts, anchors, inserts, or other rough hardware, within the forms.

2. Locate conduits or pipes so as not to reduce the strength of the construction, and in no case place in a slab less than 4 inches thick except for local offsets. Do not bury conduit in a concrete slab with an outside diameter greater than 30 percent of the thickness of the slab, and do not place conduit under slab reinforcing steel, except for slab mesh.

K. Frame openings in slabs for floor hinges where indicated or scheduled. Accurately frame openings to template furnished by floor hinge manufacturer for type of floor hinge specified. Chipping of concrete floors for installation of floor hinges will not be permitted.

L. Coating of Forms: Thoroughly clean forms and coat with specified form coating before each use. Apply form coating to forms in accordance with the manufacturer's specifications. Apply form coating to forms before placing reinforcing steel.

M. Inspection: Before placing of concrete, and after placement of reinforcing steel in the forms, provide notification so that proper inspection can be made. Make such notification at least 2 working days in advance of placing concrete.

N. Rejection of Defective Work: Any movement or bellying of forms during construction or variations in excess of the tolerances specified will be considered just cause for the removal of such forms and, in addition, the concrete construction so affected. Reconstruct forms, place new concrete and required reinforcing steel at no additional cost to the Owner.

3.3 REMOVAL OF FORMS:

A. Formwork for walls, sides of beams, and other parts not supporting the weight of the concrete may be removed as soon as the concrete has hardened sufficiently to resist damage from removal operations, particularly when form ties will be bent by the removal operations, but not sooner than 24 hours after placing concrete.

B. Whenever the formwork is removed during the curing period, cure the exposed concrete by one of the methods specified in Section 03300.

-- End of Section --

03106
UNDER-SLAB VAPOR BARRIER

PART 1 – GENERAL

1.1 SUMMARY

A. Products supplied under this section:
   1. Vapor barrier, seam tape, and mastic for installation under concrete slabs.

B. Related sections:
   1. Section 03300 Cast-in-Place Concrete

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM E 1745-09 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
   2. ASTM E 154-99 (2005) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
   3. ASTM E 96-05 Standard Test Methods for Water Vapor Transmission of Materials.
   4. ASTM F 1249-06 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.
   5. ASTM E 1643-09 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. American Concrete Institute (ACI):
   1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

1.3 SUBMITTALS

A. Quality control/assurance:
   1. Summary of test results as per paragraph 8.3 of ASTM E 1745.
   2. Manufacturer's samples, literature.
   3. Manufacturer's installation instructions for placement, seaming and penetration repair instructions.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Vapor barrier must have all of the following qualities:
   1. Permeance of less than 0.01 Perms [grains/(ft^2 · hr · inHg)] as tested in accordance with ASTM E 1745 Section 7.
   2. Other performance criteria:
      a. Strength: ASTM E 1745 Class A.
      b. Thickness: 15 mils minimum

B. Vapor barrier products:
   1. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.
   2. Other acceptable products:

a. Or equal products that meet all of the specified performance criteria in paragraph A.

2.2 ACCESSORIES

A. Seam tape:
1. Stego Tape by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.

B. Vapor-proofing mastic:
1. Stego Mastic by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.

PART 3 – EXECUTION

3.1 PREPARATION

A. Ensure that base material is approved by Architect or Geotechnical Engineer.
1. Level and compact base material.

3.2 INSTALLATION

A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E 1643.
1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement.
2. Lap vapor barrier over footings and/or seal to foundation walls.
3. Overlap joints 6 inches and seal with manufacturer's tape.
4. Seal all penetrations (including pipes) per manufacturer's instructions.
5. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all sides with tape.

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SUMMARY:

A. This section includes the furnishing and installing of reinforcing steel for cast-in-place concrete as indicated and specified. The Conditions of the Contract and Division 1 apply to this section as fully as if repeated herein.

1.2 REFERENCES

A. The editions of the specifications and standards referenced herein, published by the following organizations, apply to the concrete reinforcement only to the extent specified by the reference.

1. American Concrete Institute (ACI), 315, Manual of Standard Practice for Detailing Reinforcing Concrete Structures

2. American Society for Testing and Materials (ASTM). Refer to Drawings for references.

3. Concrete Reinforcing Steel Institute (CRSI), Manual of Standard Practice

4. American Welding Society (AWS)

1.3 SUBMITTALS:

A. Product Data: Submit mill affidavits, stating the grades and physical and chemical properties of the reinforcing steel, and conformance with ASTM Specifications, before delivery of the steel to the project site. Provide documentation demonstrating high (80%-100%) recycled content for all reinforcement bars and all welded wire steel.

B. Shop Drawings:

1. Placement drawings shall show the size, locations, and spacing of reinforcing in the various parts of the structure. Placement drawings shall be complete so that placement of the reinforcing may proceed without reference to the design drawings.

2. Review shall not act to relieve the Contractor from responsibility for accuracy of the fabrication details and placing diagrams. Dimensions and locations shall be verified before the preparation of shop drawings.

3. No construction shall be done except from reviewed drawings which shall be kept at all project site.

1.4 REGULATORY REQUIREMENTS:

A. Except as modified by the requirements specified herein or the details indicated, concrete reinforcing shall conform to the California Building Code.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Delivery: Deliver reinforcement bundled and tagged to identify placement and certify testing.

B. Reinforcing steel shall be transported to the construction site, stored and covered in a manner which will insure that no damage occurs to it from moisture, dirt, grease, or other cause that might impair bond to concrete. Store a sufficient supply of approved reinforcing steel on the construction site at all times to insure that there will be no delay of the construction. Maintain identification of steel after bundles are broken.

1.6 COORDINATION:

A. Review architectural, structural, mechanical, and electrical drawings for anchor bolt schedules and locations, anchors, inserts, conduits, sleeves, and other items which are required to be cast in concrete, and make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.

PART 2 PRODUCTS

2.1 MATERIALS:

A. Reinforcing Bars: New, deformed, billet steel bars, meeting the requirements of ASTM A 615, Grade 40 for No. 3, Grade 60 for all others. Welded reinforcing shall comply with ASTM A706. Deliver bars new and free from rust and mill scale in original bundles with mill tags intact. The carbon equivalent (C.E.) of reinforcing bars or splice material shall be calculated from the chemical composition as shown in the mill report by the following formula:

C.E. = %C + %Mn/6 + %Cu/40 + %Ni/20 +%Cr/10 - %Mo/50 - %V/10

If mill test reports are not available, chemical analysis shall be made of bars representative of the bars to be welded. ASTM A 706 bars may be assumed to have a C.E. = 0.55. No welds should be made at bends in reinforcing bars.

B. Welded Wire Fabric: New welded steel wire fabric, meeting the requirements of ASTM A 185. Gage and center-to-center spacing shall be as indicated.

C. Accessories: Reinforcement accessories, consisting of spacers, chairs, ties, and similar items shall be provided as required for spacing, assembling, and supporting reinforcement in place. Accessories shall be galvanized steel or approved plastic accessories, conforming to the applicable requirements of the CRSI "Manual of Standard Practice". Bar Supports shall be Class D per the CRSI.

D. Tie Wire: Tie wire for reinforcement shall be 16 gage or heavier, where indicated or specified, black annealed or galvanized steel wire, meeting the requirements of ASTM A 82.

E. Welding Electrodes: AWS A5.1, Grade E70XX for welding Grade 40 reinforcing steel and E90XX for welding Grade 60, and A706 bars.

PART 3 EXECUTION

3.1 FABRICATION:

A. Fabrication of steel reinforcement shall be in accordance with the details indicated. Where specific details are not indicated or noted, comply with the applicable requirements of ACI 315, CRSI Manual of Standard Practice.

B. Bars shall be accurately bent, cut, and placed as indicated. Bars shall be bent cold; heating of bars will not be permitted. Bars shall not be bent or straightened in any manner that will injure the material.

3.2 PLACING:

A. General: Reinforcing steel shall be placed in accordance with the drawings and the applicable of the latest edition of the CRSI "Manual of Standard Practice". Install reinforcement accurately and secure against movement, particularly under the weight of workmen and placement of concrete.

B. Reinforcing Supports: Bars and welded wire fabric larger than 8 gage shall be supported by metal chairs or spacers on metal hangers, accurately placed and securely fastened to steel reinforcement in place. Support legs of accessories in forms without embedding in form surface. Spacing chairs and accessories in conformance with CRSI's "Recommended Practice for Placing Bar Supports". No wood will be permitted inside forms. Precast concrete cubes may be used to support footings and slabs on grade reinforcing.

C. Placing and Tying: Reinforcing shall be set in place, spaced, and securely tied or wired with 16 gage steel tie wire at splices and at crossing points and intersections in the position indicated, or as directed. Point ends of wire away from forms.

D. Spacing: Bars shall be spaced as indicated. Where not indicated, the clear spacing for main longitudinal column reinforcement shall be not less than 1.5 times the nominal bar diameter, or 1½ inches, or 1-1/3 times the maximum size aggregate, whichever is greater. For other parallel bars, where spacing is not indicated, the minimum clear spacing shall not be less than the nominal bar diameter, or one inch, or 1-1/3 times the maximum size aggregate, whichever is less. The clear distance limitations above also apply between the bars being spliced at a contact lap splice and adjacent bars.

E. Splices: Except for temperature bars in slabs and horizontal wall reinforcing no splicing will be allowed for reinforcing bars unless detailed locations are indicated, or approval is given. Stagger lapped splices for horizontal wall reinforcing and slab temperature bars by the required minimum lap splice length. Wherever possible, stagger splices of adjacent bars.

F. Welded Wire Fabric: Wire fabric shall be in as long lengths as practical and shall be wired at laps and splices. Laps shall be one full spacing of the cross wires plus 2 inches at splices. Supply welded wire fabric in flat sheets.

G. Dowels: Dowels shall be tied securely in place before concrete is deposited. In the event there are no bars in position to which dowels may be tied, No. 3 minimum shall be added to provide proper support and anchorage. Bending of dowels after placement of concrete will not be permitted unless approval is obtained. Dowels extended for future construction shall be protected from weather exposure as indicted. Compliance with safety law requirements for extended dowel is required.

H. Cleaning: Reinforcement, at time of pour, shall be free of coatings that would impair bond to concrete.

I. Clearance: One and one half -inch clear minimum, typical.
Three inch clear minimum when poured against earth.

J. Welding: Welding of reinforcing steel shall comply with LABC Section 1903.5.2, UBC Standard 19-2 and AWS D1.2.1. Weld only reinforcing steel which conforms to ASTM A706. The carbon equivalent shall not exceed 0.55 as calculated in accordance with UBC 19-2.

K. Tolerance: Plus or minus tolerance for bar placement shall be as follows:

1. Wall Reinforcement.....3/8"
2. Spacing of Reinforcement.....1"
3. Longitudinal Location.....2"

3.3 FIELD QUALITY CONTROL

A. Provide notification at least 2 working days ahead of each concrete pour. No concrete shall be placed until all reinforcing steel has been installed and reviewed. All reinforcing shall be complete in every way by the end of the working day before concrete placing.

3.4 DEFECTIVE WORK:

A. The following reinforcing steel construction will be considered defective and shall be removed and replaced at no additional cost to the Owner.

Bars with kinks or bends not indicated.

Bars damaged by bending or straightening.

Bars heated for bending.

Reinforcement not placed in accordance with the drawings or specifications.

-- End of Section --

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install cast in place concrete as indicated on the drawings and specified.

1.2 RELATED WORK

A. Section 02517: Concrete for sidewalks, and other exterior concrete paving work.

B. Section 03100: Concrete formwork including waterstops and expansion joint fillers.

C. Section 03200: Concrete reinforcement

D. Section 03303 – Fly Ash for Cast-in-Place concrete.

1.3 SUBMITTALS

A. Product Data:

1. Submit certificates of compliance for portland cement. Include attestation as to fly ash content. Concrete mix designs shall be submitted at least ten days prior to start of concrete work. Laboratory test reports prepared by an approved testing agency for all tests specified.

2. Submit manufacturers technical literature for admixtures, curing compounds, expansion joint filler, sealer, waterstops, and chemical hardener.

B. Submit a plan showing proposed concrete placement schedules, construction joints, and control joints for review prior to installation

C. Other submittal procedures and quantities are specified in Section 01340.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Except as modified by the requirements specified herein or the details indicated, concrete construction shall conform to California Building Code.

B. Project Mock-Up

1. Abrasive Blast Finish: Before application of abrasive blasting work, prepare a small application in an unobtrusive location as selected by the Architect. Determine the type and gradation of the abrasive, nozzle pressure, technique and degree of blasting required to obtain a satisfactory finish. Proceed with work only after Architect's acceptance of test application.

2. Other Class A and B Finishes: Before installation of concrete work, erect a sample panel 6 feet long by 4 feet high showing the proposed texture, finish, and workmanship for concrete work indicated or specified to receive Class A or B finish. Upon approval, the panel shall become the standard of comparison for all

integrally colored concrete work. After all integrally colored concrete work has been completed and approved, remove the sample panel and dispose of debris off the site.

3. Integrally Colored Concrete: Before installation of integrally colored concrete, erect a sample panel 6 feet long by 4 feet high showing the proposed color range, texture, finish, and workmanship for integrally colored concrete work. Upon approval, the panel shall become the standard of comparison for all integrally colored concrete work. After all integrally colored concrete work has been completed and approved, remove the sample panel and dispose of debris off the site.

C. Pre-Installation Conference:

1. Before starting concrete construction activities, hold a conference with representatives of the formwork installer, reinforcing steel installer, concrete supplier, concrete subcontractor, testing laboratory, plumbing subcontractors, electrical subcontractors, Owner, and Architect in attendance.

2. Review forming systems, concrete materials and mixes, placement and finishing methods and procedures related to exposed concrete work, to assure a clear understanding of the drawings and specifications, resolve possible conflicts and establish coordination between all parties involved. Review required inspection and testing procedures.

PART 2 PRODUCTS

2.1 MATERIALS

A. Portland Cement:

1. Cement shall conform to ASTM C150, Type I or Type II. The cement used in the work shall correspond to that on which the selection of concrete proportions was based.

2. Where aggregates contain reactive substances, low alkali cement shall be used in all concrete. Low alkali cement shall not contain more than 0.6 percent total alkali when calculated as sodium oxide as determined by the method given in ASTM C 114.

B. Fly Ash: Conform to Section 03303.

C. Regular Weight Concrete Aggregates: Use ASTM C 227 to determine alkali reactivity of the aggregates as specified therein, the alkali reactivity shall be "innocuous" as determined by ASTM C 289.

1. Fine Aggregate: Washed clean, uniformly screen graded, and containing not more than 2 percent by weight of deleterious materials such as shale, schist, alkali, clay lumps, earth, loam, mica or similar materials. Uniformly grade fine aggregate from fine to coarse.

2. Coarse Aggregate: Clean, hard, crushed rock or washed gravel, free from organic materials or soft or friable materials, containing not more than 2 percent by weight of shale or cherty material and not more than 15 percent by weight of elongated fragments.

D. Admixtures: Of a type that increases workability and reduces water demand of concrete, but will not increase shrinkage. Admixture shall be subject to acceptance by the Architect and Division of the State Architect as to type and amount used. Admixtures shall contain not more than one percent chloride ions.

1. Water Reducing Admixture: ASTM C 494, Type A. Acceptable products include, but are not limited to, the following:

   Cormix, Inc.; PSI N
   Euclid Chemical Co.; Eucon WR 75
   W.R. Grace & Co.; WRDA
   Master Builders, Inc.; Pozzolith Normal
   Sika Corp.; Plastocrete 161

2. Water Reducing and Accelerating Admixture: ASTM C 494, Type E. Acceptable products include, but are not limited to, the following:

   Cormix, Inc.; Gilco Accelerator
   Euclid Chemical Co.; Accelguard 90
   W.R. Grace & Co.; Duraset
   Master Builders, Inc.; Pozzutec 20

3. High Range Water Reducing Admixture: ASTM C 494, Type F. Acceptable products include, but are not limited to, the following:

   Cormix, Inc.; PSI Super
   Euclid Chemical Co.; Eucon 37
   W.R. Grace & Co.; Daracem
   Master Builders, Inc.; Rheobuild
   Sika Corp.; Sikament 300

4. Air-Entraining Agent: ASTM C 260. Acceptable products include, but are not limited to, the following:

   Cormix, Inc.; Air-Tite
   Euclid Chemical Co.; Air-Mix
   W.R. Grace & Co.; Darex AEA
   Master Builders, Inc.; MB-VR
   Sika Corp.; AER

5. Color Admixture for Integrally Colored Concrete: Colors will be selected by the Architect from manufacturer's standards. Admixture shall be as follows or equal approved in accordance with Section 01630:

   Admixtures, Inc.; Colorfull
   L.M. Scofield; Chromix Admixture

E. Water Used in Mixing Concrete: Potable, clean and free from deleterious amounts of acid, alkalis, organic or other materials.

F. Curing Membrane: Nonstaining paper meeting the requirements of ASTM C 171, or 6 mil thick polyethylene film.

G. Curing Compound: Types as follows subject to the limitations specified elsewhere in this Section:

1. Non-film Forming Type: Clear, water-based solution that penetrates below the concrete surface to react with free lime to seal, harden and dust proof concrete surfaces. When tested in accordance with ASTM C 156, compound shall restrict the loss of water to not more than 0.55 kg per square meter. Acceptable products include, but are not limited to, the following:

   Burke Corp.; Res-X Silicate
   Dayton-Superior; Day-Chem Sil-Cure (J13)
   Euclid Chemical Co.; Cure & Hard
   W. R. Meadows; Cure Hard
   Nox-Crete, Inc.; Bro-Cure
   Sonneborn Building Products; Sonosil

2 Dissipating Resin Type: Water based, resin compound containing no wax, paraffin, gum or oil, designed to cure fresh concrete and complying with ASTM C 309, Type I-D, Class B. Acceptable products include, but are not limited to, the following:

   Burke Corp.; Aqua Resin Cure
   Euclid Chemical Co.; Kurez VOX
   W. R. Meadows; 1100 Clear
   Nox-Crete, Inc.; Resin Cure E
   Symons Corp.; Resi-Chem Clear Cure
   Sonneborn Building Products; Sonocure

3 Pigmented Type: Water based blend of pure waxes, polymers, additives, and alkali resistant pigments as recommended by the manufacturer of the coloring admixture. When tested in accordance with ASTM C 156, compound shall restrict the loss of water to not more than 0.55 kg per square meter. Compound shall be as follows or equal approved in accordance with Section 01630:

   L.M. Scofield Co.; Lithochrome Colorwax, Water Base
   Admixtures, Inc.; Colorfull Cure-Sealer

4 Curing Sealer: Water based acrylic resin compound containing not less than 12 percent solids, designed to cure, seal and dustproof concrete floors, complying with ASTM C 309, Type I, Class B. Acceptable products include, but are not limited to, the following:

   Burke Corp.; Spartan Cote WB
   Dayton-Superior; Safe Cure & Seal (J-18)
   Euclid Chemical Co.; Aqua-Cure VOX
   W. R. Meadows; Intex
   Nox-Crete, Inc.; Cure & Seal 1200E
   Symons Corp.; Cure & Seal 12% Emulsion
   Sonneborn Building Products; Kure-N-Seal WB

H. Vapor Barrier

   1. Refer to Section 03106

I. Sand for Use With Vapor Barrier Under Concrete: Washed fine aggregate meeting the requirements of ASTM C 33.

J. Abrasive Aggregate: Factory graded and packaged fused aluminum oxide grits or crushed emery containing not less than 40 percent aluminum oxide and not less than 25

percent ferric oxide. Material shall be rust-proof, nonglazing and unaffected by freezing, moisture and cleaning materials.

K. Leveling Compound: Cementitious, single component, non-shrink, self-leveling underlayment for concrete floors. Compound shall be as follows or equal.

Ardex; V-800
Burke Corp.; Flo-Tru
Dayton-Superior; LeveLayer II
Euclid Chemical Co.; Flo-Top
Symons Corp.; Floor Top
Sonneborn Building Products; Sonoflow

L. Drilled Anchors: Anchors shall be as follows or equal approved in accordance with Section 01630:

Hilti KB-II (LARR No. 25296)

M. Adhesive Anchors: Anchors shall be as follows or equal approved in accordance with Section 01630:

Hilti HIT HY-150 (LARR No. 25257)

2.2 MIXES

A. Concrete Proportions and Properties:

1. Minimum Concrete Strengths at 28 Days: As indicated, or 3500 psi, minimum, at 28 days where not indicated.

2. Maximum Slumps: 4 inches for slabs, footings and other horizontal members, 5 inches for walls, columns and other vertical members.

3. Maximum Size Aggregate: In no case shall the maximum aggregate size used exceed one fifth of a member's thickness, one third of the depth of slabs, nor three fourths of the minimum clear spacing between individual reinforcing bars or bundles of bars. In columns and piers it shall not exceed 2/3 of the clear distance between reinforcement. In addition, it shall never exceed the size indicated for the following:

   a. Slabs 6" and less in thickness: 1 inch.

   b. Walls less than 8" in thickness: 1 inch.

   c. Other members: 1-1/2 inch.

4. Admixtures: Admixtures shall be added in accordance with the manufacturer's instruction.

   a. Use water reducing admixture in concrete mix for walls and columns. In addition, water reducing admixtures may be used, at the Contractor's option, to improve workability and finishing of low slump concrete mixes.

   b. Use air entraining admixture in concrete mix for water to entrain between 4 and 7 percent air in exposed exterior concrete. In addition, air

entraining admixture may be used, at the Contractor's option, to improve workability of low slump concrete mixes.

c. Integrally Colored Concrete: Add color admixture at rate required to achieve color indicated, where integrally colored concrete is indicated or specified.

B. Mixing:

1. Use ready mixed concrete, mixed and transported in accordance with ASTM C 94.

2. Retempering: Mix concrete only in quantities for immediate use. Discard concrete which has set, do not retemper.

3. Indiscriminate addition of water to increase slump is prohibited. When concrete arrives at the project with slump below that suitable for placing, water may be added only if neither the maximum permissible water-cement ratio nor the maximum slump is exceeded. Incorporate the water by additional mixing equal to at least half of the total mixing required. Accompany addition of water above that permitted by the limitation of water-cement ratio by a quantity of cement sufficient to maintain the proper water-cement ratio. Obtain approval.

4. Integrally Colored Concrete: Before placing colored admixture in the mixer, clean the drum thoroughly, and add approximately 40 gallons of mix water and a portion of the aggregate.

5. In the event concrete is mixed at a central batching plant, the delivery shall be arranged so that intervals between batches are kept at a minimum, and in any event not more than 30 minutes. Trucks shall be in first class condition and kept in constant rotation during delivery. No water shall be added during transit or at the job without specific instructions from the civil engineer responsible for the mix design. Concrete shall be placed within 90 minutes after addition of water and admixtures.

2.3 SOURCE QUALITY CONTROL

A. General: Submit mill tests and manufacturer's certification of compliance with ASTM Specifications to the Inspector in lieu of testing of cement and aggregate analysis.

B. Mix Designs:

1. Mix designs shall be made by the Testing Laboratory of record under the supervision of a California Registered Civil Engineer, who shall determine mix proportions to fulfill the specified requirements for strength, aggregate size and workability of concrete, and such designs shall be used in proportioning all structural concrete. Mix designs shall bear the signature and seal of the California Registered Engineer. Two copies of the mix designs shall be filed with the Architect for record purposes only, not for review or approval.

2. Cover and clear distances between reinforcing bars shown on the drawings shall be considered in determining the aggregate size for mix designs, which may result in an aggregate size smaller than the maximum aggregate size stipulated elsewhere in this specification.

3. A list specifying the intended usage of each mix design shall be clearly shown as part of the designs.

2.4 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 CONVEYING AND PLACING CONCRETE

A. Notify the Owner's Inspector at least 5 working days in advance of the placing of any concrete.

B. Soil bottoms for footings and slabs shall be inspected by the Geotechnical Engineer before placing concrete.

C. Before placing concrete, forms shall be thoroughly inspected. Remove wood chips, dirt, etc; take out temporary bracing and cleats; box openings for pipes, etc; secure forms in their correct position and make tight; and secure reinforcement, anchors, and embedded items in their proper places. Anchor bolts, dowels, and inserts shall be secured in place at least 24 hours prior to placement of concrete. Concrete which may be on the forms or reinforcement, and which is set and dry, shall be cleaned off and the forms and steel washed off before proceeding. Remove water and all foreign matter from forms and excavations.

D. Subgrade Preparation: Before concrete floor slabs on grade are poured, place vapor barrier over prepared subgrade, lapping all joints not less than 4 inches. Seal all joints and punctures in vapor barriers with pressure sensitive tape. Cover vapor barrier with a 2 inch thick layer of sand.

E. Surface Preparation: Before new concrete is deposited against hardened concrete, and before masonry is placed on concrete, remove all incrustation and laitance from forms, reinforcing, and surface of hardened concrete. If the surface mortar and laitance of the first concrete pour has not been completely removed by water blasting, the hardened concrete surface shall receive a sandblast treatment exposing the coarse aggregate, to 1/4 inch amplitude. Surfaces which are to receive drypack shall also be prepared as herein specified.

F. Handling and Depositing:

1. Concreting, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed.

2. Handle concrete as rapidly as practicable from the mixer to the place of final deposit by methods which prevent the separation or loss of ingredients. Deposit concrete as neatly as practicable, in its final position to avoid rehandling or flowing. Do not use vibrators to move concrete.

3. Concrete shall not be dropped freely where reinforcing will cause segregation, nor shall it be dropped freely more than 4 feet. Concrete shall be deposited to maintain a plastic surface approximately horizontal.

4. Do not deposit concrete that has partially hardened in the work. Concrete shall not be retempered nor used after having stood 15 minutes after leaving the truck or mixer.

G. Vibrating and Compacting:

1. Thoroughly consolidate all concrete and compact by suitable means during the operation of placing and depositing. Thoroughly work all concrete around reinforcement, embedded items, and into the corners of the forms. Concrete against forms shall be thoroughly vibrated. Use internal vibrators under experienced supervision and keep out of contact with reinforcement and wood forms.

2. Vibrate close to the forms but do not continue at one spot to the extent that large areas of grout are formed or the heavier aggregates are caused to settle. Take care not to disturb concrete which has taken its initial set.

H. Flatwork:

1. Set edge forms and intermediate screed strips accurately to produce the designed elevations and contours in the finished surface, and sufficiently strong to support vibrating bridge screeds or roller pipe screeds if the nature of the finish specified requires the use of such equipment. Align concrete surface to the contours of screed strips by the use of strike-off templates or approved compacting type screeds.

2. When the formwork is cambered, set screeds to a like camber to maintain the proper concrete thickness.

3. Locate and detail joints in slabs on grade as indicated.

4. Thoroughly consolidate concrete slabs. Use internal vibration along the bulkheads of slabs on grade. Obtain consolidation of slabs and floors with vibrating bridge screeds, roller pipe screeds, or other approved means. Concrete to be consolidated shall be as dry as practical and the surfaces thereof shall not be manipulated before the finishing operations.

3.2 CONSTRUCTION JOINTS

A. When construction joints are necessary they shall be made and located as indicated and detailed on the drawings.

3.3 TEMPERATURE REQUIREMENTS

A. Cold Weather Requirements:

1. Concrete shall not be mixed or placed when the temperature is below 40 degrees F or when conditions indicate that the temperature will fall below 40 degrees F within 72 hours.

2. Concrete temperature shall be maintained, when deposited at not less than 60 degrees F. In cold weather, the reinforcement, forms, and ground which concrete will contact must be completely free of frost.

3. The concrete and formwork must be kept at a temperature of not less than 50 degrees F for not less than 72 hours after placing.

B. Hot Weather Requirements: The maximum placing temperature of the concrete, when deposited, shall not exceed 90 degrees F without the use of special procedures. If the weather causes the placing temperature to exceed 90 degrees F, the mix shall be cooled by wetting the aggregate or other appropriate method as directed by the Architect.

3.4 REPAIR OF SURFACE DEFECTS

A. Any concrete which is not formed as shown on the drawings, or for any reason is out of alignment, or is not true, or is not plumb or level, or is not in plane, or shows a defective surface, or is otherwise not in true and continuous form or is structurally defective, shall be considered as not conforming with the intent of this specification.

B. Contractor shall remove such concrete from the job and replace with new concrete, at no extra cost to the Owner. Removal shall be accomplished by saw cutting around the defective area at the nearest construction joint.

C. Patching Appearance Defects:

1. Inspection: After removing entire formwork assemblies, inspect concrete surfaces and patch tie holes, pour joints, voids, stone pockets, and such other defective areas as are permitted by Architect to be patched.

2. Procedure: Where necessary, chip away defective areas to depth of not less than 1 inch with edges perpendicular to surface, with no feather edges. Wet area to be patched and a space at least 6 inches wide entirely surrounding it, to prevent absorption of water from patching mortar. Place grout of equal parts portland cement and sand with sufficient water to produce a brushing consistency. Brush well into surface, then follow immediately with patching mortar.

3. Use patching mortar of same material and of approximately same proportions as used for concrete, except omit coarse aggregate, and do not mix richer than 1 part cement to 3 parts sand. Use as little mixing water as is consistent with requirements of handling and placing.

4. Compact mortar into place and screed off so as to leave patch slightly higher than surrounding surface. Then leave patch undisturbed for a period of 1 to 2 hours to permit initial shrinkage before being finally finished. Finish the patch in such a manner as to match adjoining surface, after striking off the patch with a straightedge spanning the patch and held parallel to direction of form marks.

3.5 CONCRETE FINISHES FOR FORMED SURFACES

A. Class A Finishes: Provide sacked, rubbed, and abrasive blasted finishes where specifically indicated on the Drawings.

1. Sack Rubbed Finish: Remove fins, rough spots, stains and hardened mortar by carefully rubbing with a fine abrasive stone to a smooth even surface. Remove excess form sealer by carefully scrubbing surface with 5 to 10 percent solution of

muriatic acid. Fill holes or irregular surfaces. Apply a slurry proportioned one part cement to 1-1/2 parts sand, passing a No. 16 sieve, by damp loose volume, mixed with sufficient water to form a grout having the consistency of thick paint. Before applying slurry to surfaces, dampen concrete sufficiently to prevent water absorption. Spread slurry over surfaces with a clean sponge rubber float to completely fill holes and imperfections. Float surface vigorously, and while slurry is still plastic remove excess grout. Allow to dry then rub with burlap to completely remove dry grout so that no visible grout film remains. Complete the entire cleaning operation for any area the day it is started.

2. Smooth Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than the cement paste drawn from the concrete by the rubbing process.

3. Abrasive Blast Finish: Prepare concrete for abrasive blasted finish by removing fins and rough spots and grinding offsets greater than 1/16 inch.

   a. Apply a light abrasive blasted finish on exterior concrete surfaces where indicated. Light blasted finish shall expose fine aggregate with occasional exposure of coarse aggregate and maximum 1/16 inch reveal. Texture of concrete surfaces shall be uniform after blasting and shall match test application as specified herein.

   b. Perform abrasive blasting in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on each surface or area of work. Allow concrete to cure not less than 28 days before commencing work. Carefully coordinate work so that a minimum time elapses between the blasting operations and application of the water repellent.

   c. Use an abrasive grit or sand of the proper type and gradation as required to remove the surface laitance and define the aggregate and surrounding matrix surfaces to match the approved samples. If dry sandblasting operations are employed, use only steel or iron grit. If wet sandblasting operations are employed use only silica sand. The abrasive shall not affect the color of the finished surface.

   d. The type of nozzle pressure, and blasting techniques required shall be determined in the field on the mock-up. Diameters of air lines and hoses shall be in accordance with the recommendations of the manufacturer of the abrasive blasting equipment. Blasting of mock-up shall be accomplished under the observation of the Architect, who shall approve the acceptable surface texture to be used.

   e. Abrasive blast corners and edges carefully, using back-up boards in order to maintain a uniform corner or edge line. Blasting shall be accompanied by an air hose to remove residue as surfaces are cut to enable examination of surfaces.

   f. Take care to ensure the safety of the workers and hold the Owner harmless of all claims of damages as a result of abrasive blasting. Abrasive blasting operations shall be in compliance with Air Pollution Control District, Rule 50 Visual Admissions and CCR Title 17, with a maximum of 40 percent opacity, and Rule 51 Nuisance. Provide each

blaster with an air fed helmet. Provide control for collecting grit and dust from the abrasive operations.

B. Class B Finish: Provide for exposed concrete surfaces where specifically indicated on the Drawings. Completely remove all fins and patch all tie holes and defects. Provide smooth form as-cast finish with texture as imparted by the form materials specified in Section 03100 for this class of finish. Surface irregularities in the finished concrete surface shall not exceed the limits specified for Class B finish in ACI 347R, Table 3.4.

C. Class C Finish: Provide for all exposed concrete surfaces except where Class A or B finish is indicated on the Drawings. Completely remove all fins and patch all tie holes and defects. Provide smooth form as-cast finish with texture as imparted by the form materials specified in Section 03100 for this class of finish. Irregularities in the finished concrete surface shall not exceed the limits specified for Class C finish in ACI 347R, Table 3.4.

D. Class D Finish: Provide for all concealed concrete surfaces. Chip or rub off fins exceeding 1/4 inch in height. Patch all tie holes and defects. Provide rough form as-cast finish as imparted by the form materials specified in Section 03100 for this class of finish. Irregularities in the finished concrete surface shall not exceed the limits specified for Class D finish in ACI 347R, Table 3.4.

3.6 FINISHES FOR FLATWORK

A. Floated Finish: Interior Concrete finish floors shall have a hard steel troweled finish unless indicated otherwise on the drawings. Place, strike off, consolidate, level and float to the proper elevation. Troweling shall begin after surface has received a float finish. The slab drying must proceed naturally and must not be hastened by the dusting on of dry cement or sand. Lightly tool all edges at construction joints and exercise care that slab edges are not depressed along bulkheads during finishing operations, particularly hand troweling. Exterior slabs, sidewalks, pads and ramps shall have a light broom finish unless indicated otherwise on the drawings. Provide standard trowel finish at all sub-slabs.

B. Random traffic floors, including slabs below raised access flooring panels, shall conform to the following surface profile tolerances:
   1. Floor Designation: All floor areas not specified to be part of the "defined traffic floor" should be part of the "random traffic floor". Any floor slab comprising part of the random traffic floor shall be designated a "random traffic slab".
   2. Flatness and Levelness Tolerances: All random traffic floor slabs shall conform to the following surface profile tolerances:
      Floor Flatness Number: FF
      Specified Overall Value = 25
      Minimum Local Value = 13
      Floor Levelness Number: FL
      Specified Overall Value = 17
      Minimum Local Value = 10
   3. Floor Tolerance Measurements: FF and FL tolerances shall be tested in accordance with ASTM E 1155. Actual overall F-numbers shall be calculated using the inferior / superior area method.
   4. Timeliness of Floor Profile Tests & Reports: All floor tolerance measurements shall be made within 48 hours after slab installation. In all cases, tolerance measurements shall precede the removal of shores and forms. Results of all floor profile tests (including a running tabulation of the overall FF and FL values for all of the random traffic slabs installed to date) shall be provided to the Contractor within [72] hours after each slab installation.
   5. Remedy for Out-of-Tolerance Work: For the purposes of flatness and levelness control, minimum floor section boundaries shall coincide with the control joints. Profile test

compliance requirements apply to that time period specified above only. The Contractor shall remedy any floor section measuring below either the minimum local FF number, or FL number. Any floor section measuring at or above both the minimum local FF number and the minimum local FL number shall be accepted. If the actual overall FF number or the actual overall FL number for the entire random-traffic floor installation measures less than its specified value, then the Contractor shall undertake the remedial measures that have been approved by the Engineer.

C. Troweled Finish: Provide troweled finish for interior concrete finish floors and subfloors for resilient flooring and carpet. Finish surface with impact power floats, as specified above where applicable, then with power trowels, and finally with hand trowels. Perform first troweling after power floating with a power trowel to produce a smooth surface which is relatively free of defects but which may still contain some trowel marks. Perform additional trowelings by hand after surface has hardened sufficiently. Perform final troweling when a ringing sound is produced as trowel is moved over surface. Thoroughly consolidate surface by hand troweling operations. Finished surface shall be free of trowel marks and shall be uniform in texture and appearance. On surfaces intended to support floor covering, remove by grinding, defects of sufficient magnitude to show through floor covering. Particular care shall be taken to finish troweling around the edges of the slabs so finish surface edges shall be at same elevations as the rest of the top surface of the slab.

D. Edge and Joint Finish: Use standard tools to produce rounded edge corners and intermediate line scoring.

E. Concrete Sealer: All concrete floors not indicated in the schedule to receive other finish shall receive two coats of sealer specified herein. Spray apply in perpendicular directions. First coat shall be applied as a curing compound. Apply final coat just prior to occupation of buildings. Before applying final coat, remove dirt, dust, oil, grease, asphalt and other foreign matter.

E. Abrasive Aggregate Finish: Provide abrasive aggregate at stair treads, ramps, and elsewhere as indicated. Soak aggregate for 10 minutes in clean water, drain off surplus water, sprinkle uniformly by hand at rate of 0.9 pounds per square foot of concrete surface. Wood float, trowel-tamp or roll into concrete.

3.7 PROTECTION AND CURING

A. General: Protect freshly deposited concrete from premature drying and excessively hot or cold temperatures, and maintain without drying at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.

B. Initial Curing: Initial curing shall immediately follow the finishing operation. Keep concrete continuously moist at least overnight. Use one of the following materials or methods:

1. Continuous sprinkling or fogging.

2. Absorptive mat or fabric kept continuously wet.

3. Sand kept continuously wet.

4. Curing Compounds: Apply compounds in accordance with the recommendations of the manufacturer.

a. On floors indicated to receive sealer, apply curing sealer.

b. Where possible, do not use curing compounds on surfaces indicated to receive ceramic tile, bonded terrazzo, cementitious floor toppings, liquid or trowel applied flooring, adhesively applied resilient flooring or carpet, paint, anti-graffiti coatings, or similar products required to be adhered to the concrete surface. Where necessary, apply non-film forming compound, or dissipating resin compound. If dissipating resin type compound is used, concrete surfaces shall be tested to ensure complete dissipation before application of bonded materials. If residual compound is found, the residual compound shall be removed by sandblasting, bead blasting, or chemical scrubbing.

c. On Surfaces indicated to receive a Class A or B finish, use clear, non-yellowing compound.

d. On integrally colored concrete and dry shake colored toppings use pigmented curing compound.

e. On all other concrete surfaces, use dissipating resin compound.

C. Cure surfaces to receive resilient flooring and ceramic tile by covering with waterproof paper coverings.

D. Final Curing: Immediately following the initial curing and before the concrete has dried, accomplish additional curing by one of the following materials or methods:

1. Continuing the method used in initial curing.

2. Waterproof paper covering.

3. Other moisture-retaining coverings as approved.

E. Duration of Curing: Continue the final curing until the cumulative number of days or fractions thereof, not necessarily consecutive, during which temperature of the air in contact with the concrete is below 50 degrees F has totaled 7 days. If high early strength of concrete has been used, continue the final curing for a total of 3 days. Rapid drying at the end of the curing period shall be prevented.

F. Formed Surfaces: Keep steel forms heated by the sun and all wood forms in contact with the concrete during the final curing period wet. If forms are to be removed during the curing period, immediately employ one of the above curing materials or methods. Continue such curing for the remainder of the curing period.

G. Protection from Mechanical Injury: During the curing period, protect the concrete from damaging mechanical disturbances, particularly load stresses, heavy shock, and excessive vibration. Protect finished concrete surfaces from damage caused by construction equipment, materials, or methods, and by rain or running water. Self-supporting structures shall not be loaded in such a way as to overstress the concrete.

3.8 EXPANSION AND CONSTRUCTION JOINTS

A. Expansion Joints: Tool adjacent concrete edges to a 1/8 inch radius. After a minimum of 28 days after slabs have been placed and finished, fill tops of expansion joints with backer rod and sealant Type B. Finish sealant to 1/8 inch below surface of slabs. No traffic shall be permitted to travel over sealed joints until sealer is thoroughly dry.

B. Construction Joints: When construction joints are necessary they shall be made and located as indicated.

3.9 DEFECTIVE WORK

A. Defective concrete work shall be removed and replaced at Contractor's expense.

-- End of Section --

SECTION 03303

FLY ASH FOR CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Fly ash shall be incorporated in cast-in-place concrete as specified, subject to approval of the design mix by the Structural Engineer, and as specified.

1.2 QUALITY ASSURANCE

A. Fly ash shall conform to ASTM C618, 1993 Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

B. Submit a mix design for each strength and type of concrete. Submit a complete list of materials including type; brand; source and amount of cement, fly ash, and admixtures; and applicable reference specifications. Submit additional data regarding concrete aggregates if the source of aggregate changes. Submittal shall clearly indicate where each mix design will be used when more than one mix design is submitted. The approval of fly ash tests results shall have been within 6 months of submittal date.

C. Submit test results in accordance with ASTM C618 for fly ash. Submit test results performed within 6 months of submittal date.

D. Submit a notarized certificate from cement manufacturer or ready-mix producer attesting to the percentage of fly ash content.

PART 2 PRODUCTS

2.1 MATERIALS

A. Blended cement shall consist of a mixture of ASTM C150 cement and recycled material
1. Fly Ash: ASTMC618, Class[C] [F]. (25% min)
2. Ground Granulated Blast-Furnace Slag: ASTMC989, Grade100 or 120. (50% min.)

B. Consider the highest allowable percentage of cement substitution with coal fly ash, or blast-furnace slag. Consider higher percentages for applications and construction schedules that will allow a longer curing time. Be sure the concrete mixes are properly engineered for each application. Available Manufacturers:
1. Boral Material Technologies Inc.
2. Full Circle Solutions Inc.
3. Headwater Resources, Inc.
4. Holcim US, Inc.
5. Lafarge North America
6. Mineral Resource Technologies, LLC
7. Mineral Solutions, Inc.
8. The SEFA Group

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

A. Collect samples of concrete to perform tests as specified in Section 03300.

-- End of Section --

SECTION 03310

CONCRETE TESTING AND INSPECTION

PART 1 GENERAL

1.1 DESCRIPTION

A. Principal work in this Section:

1. The Owner will engage Testing Agency to perform following testing and inspection.

2. Contractor will engage technical agency, which shall be other than one retained by the Owner, for purpose of designing concrete mixes.

1.2 CONTRACTORS RESPONSIBILITIES

A. Concrete Reinforcement: Section 03200.

B. Cast-In-Place Concrete: Section 03300.

1.3 OWNER'S TESTING AGENCY'S DUTIES

A. General:

1. Conduct following tests and inspections, interpret them, evaluate results for compliance with Contract Documents, and report findings to the Owner who will distribute one copy to the Architect and the Contractor.

2. Provide five (5) standard cylinder molds at project site at all times for making additional cylinders as may be approved by the Owner.

3. Provide slump cone, plate and rod for use on Project at all times.

B. Material Analysis:

1. At start of job and at least once each month or when new bulk materials are delivered to batching plant for use on job, check the following for compliance with Contract Documents.

a. Cement.
b. Fly ash
c. Aggregate.
d. Admixtures.

2. Test coarse aggregate for dry rodded unit weight whenever a sieve analysis is made and when it appears that there has been a change in aggregate characteristic.

C. Batch Plant Inspection: At start of job and monthly until concrete work completion, observe and evaluate the following for compliance with Contract Documents.

1. Condition of batching equipment.

2. Conformance with design mix proportions.

3. Condition of materials.

4. Type of materials used.

5. Mixing time, delivery time.

6. Inspect aggregate stockpiles and storage and notify concrete producer and Owner of practices which are causing segregation or contamination within site stockpiles.

7. Inspect trucks used to transport concrete. Assure they are clean and in condition to mix and deliver uniform low slump mix.

8. Additional pertinent controls depending on weather, job conditions, etc.

D. Compression Tests: ASTM C31 and C39. Sample at point of deposit.

1. One (1) set of four (4) cylinders made from single concrete sampling for every 50 cubic yards of each type of concrete used each day.

a. One (1) 7-day break; laboratory cure.

b. Two (2) 28-day breaks; laboratory cure.

c. One (1) 56-day break if 28 day break does not comply; laboratory cure.

2. In addition to above, one (1) cylinder from every truck load of concrete for foundations.

a. 7-day break; laboratory cure.

E. Air Content Test: ASTM C173.

1. Air-Entrained Concrete: Test first truck and every third truck thereafter each day.

2. Concrete Not Air-Entrained: Test every 100 cubic yards at random.

F. Slump Test: ASTM C143; first truck each day, test each sample for cylinders, and as often as necessary thereafter, and per minimum requirements of CBC.

G. Check all reinforcing installations to verify conformance with Contract Documents and reviewed shop drawings.

H. Check all embedded items including any welding to verify conformance with Contract Documents and reviewed shop drawings.

I. Check all formwork to verify conformance with Contract Documents and reviewed shop drawings.

J. Observe placement of Concrete.

1.4 OWNER'S TESTING AGENCY'S REPORTS

A. General: Prepare and forward reports to the Owner.

B. Material Analysis: State pertinent data identifying source and manufacture of cement, aggregate and admixtures. State tests performed and indicate degree of compliance with Contract Documents or adjustments made therefor.

C. Batch Plant Inspection: State pertinent data regarding locations, sources, conditions, controls and methods used. Indicate degree of compliance with Contract Documents.

D. Compression Test: In addition to reporting as outlined in ASTM C39, present the following data in tabular forms and distribute immediately after recording test results. Notify Owner by telephone on date test is performed of test results which are not in compliance with Contract Documents.

1. Identify of job, Contractor, Supplier.
2. Identify of mix and required strength.
3. Pour location of sampled concrete.
4. Slump, air content, truck number, time and date sampled, air temperature, concrete temperature, consistency.
5. Curing history.
6. Date tested.
7. Compressive strength.
8. Type of fracture.
9. Compliance with Contract Documents (yes or no).

E. On Site Inspection: Indicate areas of work in particular and indicate degree of compliance.

-- End of Section --

SECTION 03345

CONCRETE AGENTS AND FINISHES

PART 1 GENERAL

1.1 DESCRIPTION:

A. Principal work in this Section:

1. Provide concrete finishes curing, hardening, and sealing agents, complete, in accordance with Contract Documents.

2. Scope but not limited to the following: Slabs-on-grade, concrete slabs, built-up slabs, topping slabs and housekeeping pads, exposed concrete curbs, and stem walls.

B. Related work in other Sections:

1. Section 03200 - Concrete Reinforcement.

2. Section 03300 - Cast-In-Place Concrete.

3. Section 03310 - Concrete Testing and Inspection.

1.2 QUALITY ASSURANCE

A. Develop and perform Quality Assurance Program which ensures tightness of forming system to avoid leakage, evaluate suitability of forming materials and surface finishes prior to each use to maintain concrete finish surfaces as well as maintaining necessary controls to allow no opportunity to construct incorrect finishes or compromise structural integrity required in completed work.

B. Design, engineering, and construction of the complete formwork system, including fabrication, installation, removal, and reshoring remain solely the Contractor's responsibility.

C. Use adequate numbers of skilled craft persons who are thoroughly trained and experience in the necessary crafts and who are complete familiar with specified requirements and the methods needed for proper performance of the Work of this Section.

1.3 SUBMITTALS:

A. Product data: After the Contractor has received the Owner's "Notice to Proceed" promptly submit the following:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Manufacturer's recommended installation procedures which, when approved by the Owner will become the basis for accepting or rejecting actual installation procedures used on the Work.

B. Refer to Section 03300 - Cast-In-Place Concrete; Paragraph, Submittals.

C. Samples: Submit samples of the following items in accordance with Section Submittals.

1. Job Mock-Up for Applied Coatings: After review of material literature and technical data, prepare small area sample for Architect's review of application.

1.4 WARRANTY

A. Comply with provisions of the GENERAL CONDITIONS of these Specifications which shall include a 12-month warranty period which covers parts and labor; effective date of the warranty being the date of acceptance by the Owner.

B. Warrant that form release agent will not stain concrete surfaces and will not adversely affect bond of subsequent applied finishes. Submit warranty in writing.

PART 2 PRODUCTS

2.1 CURING, HARDENING AND SEALING AGENTS:

A. Provide the products upon which design is based, or provide equal products of another manufacturer approved in advance by the Owner.

B. General: Curing, hardening and sealing agents that are to be applied sequentially shall be products of single manufacturer. Where products of different manufacturers are used including proprietary topping and surfacing materials, confirm their compatibility with respective manufacturers. Mask areas to receive sealants, caulking compounds or special paints/epoxy/waterproofing/coatings before application of curing or sealing agents.

1. The following "Types" of curing and sealing combinations are designated on Drawings and/or indicated herein.

2. References to finish materials for subsequent application are intended to establish standards of use of curing and sealing "Types." Refer to Architectural Drawings for Finish Schedules for specific finish materials and areas of application.

3. All products and usage shall meet SCAQMD requirements and similar standards. Advise the Owner if product does not comply and propose and provide complying equivalent.

4. Curing Compound: Conform to Standard Specification for liquid Membrane-Forming Compounds for Curing Concrete," ASTM C309. The compound shall produce a uniform, continuous, adherent film that does not check, crack, or peel and is free from pinholes or other imperfections. Use a compound which will have no deleterious effect on subsequent finishes. Cure permanently exposed surfaces by use of a clear-type membrane-forming curing compound containing a fugitive dye.

5. Curing compound used on concrete that is to be coated with a penetrating sealer shall be as recommended by the penetrating sealer manufacturer.

6. Floor Hardener: Where no floor coverings are indicated in the schedule of finishes, treat concrete by means other than membrane-forming compound. The Ashford Formula or W.R. Meadows, or equal.

7. Coating VOC Limits: Coatings products shall not exceed the volatile organic compound (VOC) limits listed below.

   a. Waterproofing Sealers 250 grams per liter.
   b. Sanding Sealers 275 grams per liter.
   c. All Other Sealers 200 grams per liter.

C. Type I, Moist Cure Only: For slabs to receive concrete fill, membranes, brick, or materials of similar application.

1. Rollout waterproof covering complying with ASTM C171.

D. Type II Cure only: For slabs with no subsequent material application: ASTM C309 Type 1-D, liquid membrane-forming, non-penetrating, fugitive dyed compound for interior or exterior use.

1. "Horncure 30D", A.C. Horn, Inc.
2. "Hydrocide Curing 309 Resin-Base", Sonneborn-Rexnord.
3. "Kurez E-100S", Euclid Chemical Co.

4. Or equal.

E. Type III, Cure and Seal: For interior slabs to receive resilient tile, carpet or mastic thin set ceramic tile and exposed interior slabs subject to dry maintenance only. Apply 1 coat for curing and second coat for sealing.

1. "Dekote", W.R. Grace.
2. "Polyclear", Upco Co., Division of USM.
3. "Eucocure", Euclid Chemical Co.
4. "Sure-Klean Cure & Seal". ProSoCo, Inc.
5. "Kure-N-Seal", Sonneborn-Rexnord.
6. "Horn Clear Seal", W.R. Grace.
7. Or equal.

F. Type IV, Moist Cure, Hardener & Sealer: For heavy use interior areas subject to dry maintenance only.

1. "Lapidolith" hardener, "Son-No-Mar sealer; Sonneborn-Rexnord.
2. Or equal.

G. Type V, Cure and Hardener: For heavy use interior areas subject to wet maintenance.

1. "Lapidolith" hardener, Sonneborn-Rexnord.
2. "Hornolith" hardener, A.C. Horn, Inc.
3. "Saniseal 100" hardener, Master Builders.
4. "Surfhard" hardener, The Euclid Chemical Co.
5. Or equal.

2.2 MISCELLANEOUS MATERIALS:

A. Bonding Agent

1. "Expoxtite 2385", W.R. Grace.
2. "Sonobond", Sonneborn-Rexnord.
3. Or equal.

B. Patching and Surfacing Compound

1. "Five Star Concrete Patch", U.S. Grout Corp.
2. "Thoropatch" by Thoro System Products.
3. "Epoxy Binder 38" by Nox-Crete Chemicals.
4. Or equal.

PART 3 EXECUTION

3.1 GENERAL:

A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until detrimental conditions are corrected. Start of installation operations shall imply Contractor's acceptance of job conditions.

B. Strike off, float and/or trowel surfaces to produce texture consistent with adjacent formed surfaces or as indicated. Position drains one-half inch below top of slab elevation and slope five-foot radius to drain.

C. Do not sand float, bag, sack, grout clean, or otherwise apply cementitious masking to formed surfaces.

D. Patching: Apply bonding agent and 1:1 mortar or proprietary patching compound to correct surface defects and fill holes. Special matching patching is required for architecturally finished concrete.

E. Stoning (or rubbing): Use carborundum stone with only enough water to develop cement paste from concrete mortar.

3.2 FORMED SURFACE FINISHES:

A. Finish No. 1: Concealed

1. Remove fins, patch tie holes where skim coat plastered or where waterproofing/dampproofing or similar coatings are to be applied. Type II, Cure.

2. Remove fins where covered by furred out drywall, plaster or other finishes. Type II Cure.

B. Finish No., 2: Exposed or painted.

1. Remove fins, patch tie holes except as shown on Architectural Drawings, stone joint marks and out-of-plane surfaces to within 1/16 inch of flush, to produce uniformly dense and smooth concrete.

2. Unpainted Concrete: Type III, Cure and Seal.

3. Painted Concrete: Type I, Moist Cure.

3.3 FLATWORK - GENERAL:

A. Preparation: Set bulkheads and screed strips to facilitate continuous placing and to produce cross sections within tolerances specified in Section 03100 CONCRETE FORMWORK. Then consolidate, float, trowel, scratch, broom, cure, harden, seal, apply non-slip particles and other treatments to top of structural slab or concrete fills.

B. Consolidate Concrete: Consolidate concrete with vibrating screeds, roller screeds or immersion vibrators. For concrete surfaces to receive cement-setting beds, leave rough slab surface after screeding only.

C. Power Float and Hand Float: Power float and hand float after water sheen has disappeared to push down aggregate, raise mortar, and level.

D. Power Trowel and Hand Trowel: Power trowel and hand trowel as soon as surface can be worked without cement paste clinging to blades.

E. Tolerances

1. Class A: Level to within 1/8 inch in 10 feet (1/1000).

2. Class B: Level to within 1/4 inch in 10 feet (1/500).

3.4 SLAB FINISHES:

Verify specified slab finish with manufacturer whose product will be applied to finish surface. Provide surface acceptable for applied coverage. Locations noted shall include the following:

A. Slab Finish A: Scratched; for rigid, cementitious surfaces (concrete fill, tile pavers, etc., except thin-set ceramic).

1. Consolidate and level to Class B tolerance.

2. Broom or rake to roughen surface and expose aggregate.

3. Type I Moist Cure only. Used at mechanical rooms (structural slabs). Do not use chemical curing.

B. Slab Finish B: Floated; for non-cementitious covering: roofing, membranes, etc.

1. Float to Class B tolerance.

2. Type I, Moist Cure only. Used at roof deck and terraces.

C. Slab Finish C: Troweled; for resilient flooring, carpet, and thin-set ceramic tile.

1. Float to smooth granular Class B tolerance.

2. Troweled to Class A tolerance free of trowel marks, pockets or humps. Finish slabs under operable partitions to tolerance of 1/4 inch in 90 feet.

3. Type III, Cure and Seal. Used at toilet rooms, office floors and exit stairs.

D. Slab Finish D: Hard troweled; for exposed floors.

1. Trowel to Class B tolerance until ringing sound is produced and floors are free of trowel marks or other defects.

2. Type II, Cure only. Used at telephone/electric room, janitor, typical floor mechanical room.

3. Type IV, Moist Cure, Hardener and Sealer. Used at central mechanical plant, transformer, switchgear, emergency generator and similar rooms.

E. Slab Finish E: Medium broomed; for driveways.

1. Trowel to Class B tolerance and let set.

2. Striate uniformly at right angles to traffic, with medium-stiff broom.

3. Type V, Cure and Hardener. Used at concrete driveways.

F. Slab Finish F: Fine broomed; for exterior steps, equipment pads, sidewalks, etc.

1. Trowel to Class B tolerance as in Finish C.

2. Striate uniformly at right angles to traffic, with fine-haired broom.

3. Type II, Cure only.

G. Slab Finish G: Floated; for interior parking floors.

1. Float to Class A tolerance.

2. Rotary float.

3. Type V, Cure and Hardener.

3.5 CLEAN-UP

A. Remove all excess materials, equipment, rubbish and debris from the job-site. All areas in the library structure used by the Contractor to be left in a clean and safe conditions.

-- End of Section --

SECTION 03600
DRYPACK & EPOXY ADHESIVES

PART 1 - GENERAL

1.01 Description of Work: Work included, but not necessarily limited to: Placement of epoxy adhesives for steel anchors and drypacking of baseplates, as shown on the drawings and as specified herein.

1.03 References:

A. American Society of Testing Materials (ASTM):
1. C 150 Portland Cement.

B. International Conference of Building Officials (ICC):
1. ESR-2322 HIT-RE 500-SD by Hilti Corporation – into Concrete
2. ESR-1967 HIT-HY 150 by Hilti Corporation – into CMU
3. ESR-2508 SET-XP by Simpson Strong-Tie – into Concrete
4. ESR-1772 SET by Simpson Strong-Tie – into CMU

C. SCAQMD rules and regulations.

1.04 SUBMITTALS

A. Submit promptly after receipt of the Owner's "Notice to Proceed."

1. A complete materials list showing all items specified to be furnished and installed under this Section.

2. Sufficient data to demonstrate that all materials meet or exceed the specified requirements, including proof of manufacturer's and installer's qualifications.

3. Specification, installation instructions and general recommendations from manufacturer showing procedures under which it is proposed that materials will be installed.

4. Upon approval by the Owner, the proposed installation procedures will become the basis for inspection and acceptance or rejection of actual installation procedures used on the work.

PART 2 - PRODUCTS

2.01 Materials:

A. Cement: Portland Cement Type II, low alkali, conforming to ASTM C 150. One brand of cement shall be used throughout the work for structural purposes.

B. Silica Sand: A factory processed oven-dried aggregate, conforming to ASTM C 144, gradation as indicated.

C. Water: Clean, fresh, free from acid, alkali, organic matter or other impurities liable to be detrimental to the concrete.

D. Epoxy Adhesive: A two-part epoxy resin,
1. ESR-2322 HIT-RE 500-SD by Hilti Corporation – into Concrete
2. ESR-1967 HIT-HY 150 by Hilti Corporation – into CMU
3. ESR-2508 SET-XP by Simpson Strong-Tie – into Concrete
4. ESR-1772 SET by Simpson Strong-Tie – into CMU

E. Screen Tubes: Metal Fabric tubes, of the diameter and length indicated per epoxy manufacturer for installation in brick or concrete masonry units.

F. Threaded Rods: ASTM A307.

2.02 Drypack Mix:

1. A sand-cement mixture at 3:1 ratio with enough water added to dampen the entire mixture.

PART 3 - EXECUTION

3.01 Drilling Concrete and Masonry :

A. Verification: Prior to drilling or coring, verify that all existing conditions are compatible with the proposed methods of construction as shown on the drawings and specified herein.

B. Drilling Existing Concrete: Drills used shall be a diamond core or carbide-tipped helical drill bits. Drill to required depth and diameter exercising caution so as not to spall or crack existing concrete. Use minimal water as necessary for drilling. No impact drilling allowed.

C. Drilling Existing Brick, Solid-Grouted or Hollow Concrete Masonry Units: Drill used shall be a diamond core drill bit. Drill to required depth and diameter exercising caution so as not to displace existing brick or clay tile units. Minimize back pressure on the drill to prevent rupture of the clay tile shell. No impact drilling allowed.

3.02 Epoxy Adhesive Placement:

A. Cleaning: Clean holes with a jet of compressed air and nylon brush. Concrete holes that are fouled with oil or dust shall be cleaned with toluene and a bottle brush prior to placement of resin.

B. Screen Tubes: Utilize screen tubes where indicated on the drawings.

C. Place the resin adhesive either in the drilled hole or screen tube with sufficient resin so as to bring the resin to the surface with insertion of the anchor rod or reinforcement. Install the screen tube into the hole. Set the anchor rod or reinforcement into the adhesive, cleaning all exterior surfaces immediately of all excess adhesive. Do not disturb until the adhesive has cured.

3.03 Field Quality Control:

A. Adhesive Placement: Place all adhesive resins in the presence of the Agency's Special Inspector.

3.04 Clean-up:

A. At completion of concrete work, remove all concrete debris, slurry, hardened concrete, and other waste products.

END OF SECTION

SECTION 03620
DRYPACK AND MECHANICAL ANCHORS

PART 1 - GENERAL

1.01 Description of Work: Work included, but not necessarily limited to: Placement of mechanical anchors into concrete and drypacking of baseplates, as shown on the drawings and as specified herein.

1.02 References:

A. American Society of Testing Materials (ASTM):
1. C 150 Portland Cement.

B. International Code Council Research Report
1. Wedge Anchors
a. ESR-1917 Hilti Kwik Bolt TZ by Hilti Corporation
b. ESR-2251 ITW Ramset/Redhead Trubolt
c. ESR 1396 Simpson Wedge All

2. Screw Anchors
a. ESR-1423 HUS-H Concrete Screw Anchor by Hilti Corp.
b. ESR-1059 Simpson Titen HD Screw Anchor

PART 2 - PRODUCTS

2.01 Materials:
A. Cement: Portland Cement Type II, low alkali, conforming to ASTM C 150. One brand of cement shall be used throughout the work for structural purposes.

B. Silica Sand: A factory processed oven-dried aggregate, conforming to ASTM C 144, gradation as indicated.

C. Water: Clean, fresh, free from acid, alkali, organic matter or other impurities liable to be detrimental to the concrete.

D. Mechanical Anchor:
1. Wedge Anchors
a. Hilti Kwik Bolt TZ by Hilti Corporation
b. ITW Ramset/Redhead Trubolt
c. Simpson Wedge All
2. Screw Anchors
a. HUS-H Concrete Screw Anchor by Hilti Corp.
b. Simpson Titen HD Screw Anchor

2.02 Drypack Mix:

1. A sand-cement mixture at 3:1 ratio with enough water added to dampen the entire mixture.

PART 3 - EXECUTION

3.01 Drilling Concrete and Masonry :

A. Verification: Prior to drilling or coring, verify that all existing conditions are compatible with the proposed methods of construction as shown on the drawings and specified herein.

B. Drilling Existing Concrete: Drills used shall be a diamond core or carbide-tipped helical drill bits. Drill to required depth and diameter exercising caution so as not to spall or crack existing concrete. Use minimal water as necessary for drilling. No impact drilling allowed.

C. Hole size drilled shall be per manufacturer recommendations for the anchor utilized.

3.02 Mechanical Anchor Placement:

A. Cleaning: Clean holes with a jet of compressed air and nylon brush. Concrete holes that are fouled with oil or dust shall be cleaned with toluene and a bottle brush prior to placement of anchor.

B. Install anchor in compliance with manufacturer recommendations. Do not overtorque or damage anchor during installation.

3.03 Field Quality Control:

A. Anchor Placement: Mechanical Anchors do not need to be installed in the presence of a deputy inspector, unless specifically noted on the approved drawings.

3.04 Clean-up:

A. At completion of concrete work, remove all concrete debris, slurry, hardened concrete, and other waste products.

END OF SECTION

SECTION 05120

STRUCTURAL STEEL

PART 1 GENERAL

1.1 SUMMARY

A. This section includes labor and materials which are required for the completion of structural steel construction as indicated and specified. The Conditions and Division 1 apply to this section as fully as if repeated herein.

1.2 REFERENCES:

A. The editions of specifications and standards referenced herein, published by the following organizations, apply to the construction only to the extent specified by the reference. Refer to Section 01091for information concerning availability and use of references.

1. American Institute of Steel Construction (AISC).

2. American Society for Testing and Materials (ASTM).

3. American Welding Society (AWS).

4. Steel Structures Painting Council (SSPC).

5. Research Council on Riveted and Bolted Joints (RCRBJ).

1.3 SUBMITTALS:

A. Mill test certificates for mill order steel which can be identified by means of heat or melt numbers.

B. Provide documentation demonstrating the amount of recycled material in all permanently installed structural steel used in the Project.

C. Shop Drawings: Submit shop and erection drawings for review. Review of drawings will cover only the general scheme, design, and character of the details, but not the checking of dimensions nor will such review relieve the Contractor from responsibility for executing the construction in accordance with the contract documents.

1. Field Measurements: Before starting construction or proceeding with shop and erection drawings, verify measurements, lines, grades, elevations, locations and details of existing field conditions and be responsible for correctness, conformity, accuracy and execution of structural steel construction to conform to actual conditions.

2. Detailing: Detail in conformance with AISC Manual "Structural Steel Detailing", except where otherwise indicated.

3. Field Connections: Clearly show field connections on the erection drawings with complete details as required so that the connections can be made without reference to the design drawings.

4. Provide setting drawings, templates, and directions for installation of anchor bolt and other anchorages to be installed under other sections.

1.4 QUALITY ASSURANCE.

A. Qualification of Welding: Qualify welding procedures and welding operators in accordance with AWS D1.1. Provide certifications that welders to be employed have satisfactorily passed AWS qualification tests. If recertification of welders is required, retesting will be the Contractor's responsibility.

B. Regulatory Requirements: Except as modified by the requirements indicated or specified herein, structural steel construction shall conform to California Building Code.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Deliver material in time to insure uninterrupted progress of the construction. Store materials in a manner to preclude damage and permit ready access for inspection and identification of each shipment. Store steel materials, either plain or fabricated, above the ground upon platforms, pallets, skids, or other supports. Keep materials free from dirt, grease, and other foreign matter, and protect from corrosion. Material showing evidence of damage will be rejected and shall be immediately removed from the site.

PART 2 PRODUCTS

2.1 GENERAL:

A. Use only new and undamaged materials. Steel which in the opinion of the Inspector is badly corroded or physically damaged shall not be incorporated in the construction.

2.2 MATERIALS:

A. Structural Steel, Shapes, Bars and Plates: ASTM A 36; ASTM A 572 Grade 50, or A992 for W12 shapes and larger.

B. Structural Tubes, ASTM A 500, Grade B.

C. Structural Pipe Members: ASTM A 53, Type E or S, Grade B.

D. High Strength Bolts: ASTM A 325.

E. Common Bolts and Nuts: ASTM A 307. Provide either hexagonal or square heads and nuts except use only hexagonal units for exposed connections. Provide washers at all anchor bolt nuts. Provide washers where indicated by Structural Engineer on either drawings or on Shop Drawing review.

F. Filler Metal for Welding: Meet the requirements of AWS D1.1. Electrodes shall be as recommended by their manufacturers for the position and other conditions of actual use. Electrodes shall be E70 series.

G. Anchor Bolts, Pins and Rods: ASTM A 307.

H. Primer: Manufacturer's or fabricator's standard, fast curing, lead free, universal modified alkyd primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound foundation for field applied topcoats despite prolonged exposure, complying with performance requirements of Fed. Spec. TT-P-645.

I. Galvanizing: ASTM A 123-84.

J. Galvanizing Repair Compound: High zinc dust content galvanizing repair paint conforming to Mil. Spec DOD-P-21035A or hot applied zinc rich material. Acceptable products or equal:

American Solder & Flux; Drygalv
Kenco Div.; Galvicon
Metalloy Products Co.; Galvaloy

K. Metallic, Nonshrink Grout: For grout in concealed locations use premixed factory packaged, ferrous aggregate, grouting compound meeting the requirements of Corps of Engineers Specification CRD-C-588-79. Acceptable products or equal:

Gifford-Hill & Co., Inc.; Supreme Plus
Master Builders; Embeco 636
Sonneborn Building Products; Ferrolity G-DS

L. Nonmetallic, Nonshrink Grout: For grout in exposed to view locations use premixed, nonmetallic, non-corrosive, non-staining grouting compound containing silica sands, portland cement, shrinkage compensating agents and water reducing agents, meeting the requirements of Corps of Engineers Specification CRD-C-621-81. Acceptable products or equal:

Gifford hill & Co., Inc.; Supreme
Master Builders; Masterflow 713
The Upco Company; Upcon Nonshrink

2.3 FABRICATION:

A. General: Fabricate and assemble materials in the shop to the greatest extent possible. Shearing, flame cutting, and chipping shall be done carefully and accurately. Coordinate connection details where steel attaches to concrete. Verify lines, levels, and dimensions, where possible, just before commencing fabrication of connection details. Correct construction that does not fit. Schedule and coordinate construction under this section with that specified elsewhere. When not otherwise indicated or specified, comply with applicable requirements of AISC "Specifications for Design, Fabrication and Erection of Structural Steel for Buildings".

B. Exposed Steel Work: Where steel surfaces are exposed to view in the finished construction, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding or by welding and grinding, before cleaning, treating and application of surface finishes.

C. Connections: Bolt or weld connections as indicated. One sided or other types of eccentric connections will not be permitted unless shown in detail on the shop Drawings.

1. Make welded connections in accordance with AWS D1.1. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.

2. Grind and dress smooth welds exposed to view in the finished construction, so that the shape and profile of the item welded is preserved.

D. Joints: Compression joints depending upon contact bearing shall have bearing surfaces truly milled perpendicular to their axis. Cut or dress other joints straight and true.

E. Holes: Cut, drill, or punch holes at right angles to the surface of the metal. Do not enlarge holes by burning, however holes may be enlarged by careful reaming. Holes in base or bearing plates shall be drilled. Holes shall be provided in members to permit connecting the construction of other trades.

F. Marking: Mark members for erection in accordance with shop drawings. Members weighing over 4 tons shall have the weight so marked on the member. Long members shall be loaded onto the trucks and so marked.

2.4 SHOP PAINTING:

A. General: Shop paint structural steel except galvanized members or those members or portions of members to be embedded in concrete or mortar. On embedded steel which is partially exposed, paint the exposed portion and the initial 2 inches of embedded areas only. Do not paint surfaces to be welded or high strength bolted with friction-type connections. Do not paint surfaces which are scheduled to receive sprayed-on fireproofing.

B. Surface Preparation: After inspection and before shipping, clean steelwork to be painted. Remove loose rust, loose mill scale and spatter, slag or flux deposits using power tool cleaning in accordance with SSPC SP-3.

C. Painting: Immediately after surface preparation, apply shop primer in accordance with manufacturer's instructions and at a rate to provide a dry film thickness of not less than 1.5 mils. Use painting methods which result in full coverage of joints, corners, edges and exposed surfaces.

2.5 GALVANIZING

A. General: All steel and ferrous metal items except these which are scheduled to receive special fireproofing, located on the exterior of the building, and otherwise specifically indicated to be galvanized, shall be galvanized by the hot-dip process, meeting the requirements of ASTM A 123. All required hot-dip galvanizing shall be done after fabrication, in the largest sections possible. Items too large for available dip tanks shall be sprayed, by approved methods, with molten zinc to coating thickness of 0.003 inch to 0.004 inch.

B. Coating Weight: Weight of the zinc coating per square foot of actual surface shall average not less than 2.0 ounces and no individual specimen shall show less than 1.8 ounces.

C. Repair of Coating: Restore shop galvanized metal necessitating field soldering or welding which in any manner removes original galvanizing, by using galvanizing repair compound in accordance with the manufacturer's instructions.

PART 3 EXECUTION

3.1 PREPARATION:

A. Field Measurements and Templates: Secure field measurements required for proper and adequate fabrication and installation. Furnish templates for exact location of items to be embedded in concrete and setting instructions required for installation.

B. Temporary Shoring and Bracing: In accordance with California Code of Regulations (CCR) Title 8, design and provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are securely in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structure as erection proceeds.

C. Temporary Planking: Provide temporary planking as required by CCR Title 8 and as necessary to effectively complete the construction.

3.2 ERECTION:

A. Setting Base and Bearing Plates: After the supported members have been plumbed, aligned and properly positioned, set base and bearing plates. Support plates on adjustable bolt supports or shims until grout has set. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Follow the grout manufacturer's instructions.

B. Framing: Except as specified herein, erect framing in accordance with AISC Code of Standard Practice and UBC. Plan and layout framing so that cutting will not be required. Erect the construction plumb, square, and true to line, level, and position indicated within tolerances established in the AISC Code of Standard Practice.

C. Holding and Protection: In assembling and during welding hold the component parts with sufficient clamps or other adequate means to keep parts straight and in close contact. In welding, take precautions to minimize "lock-up" stress and distortion due to heat. In wind, perform welding only after adequate wind protection is furnished and set up.

D. Connections: Bolt field connections except where welding is indicated. Perform welding as specified for shop welding. Provide high strength bolted connections for principle bolted connections where indicated. Provide common bolted connections for secondary connections and other bolted connections not indicated otherwise. Install high strength bolts in accordance with AISC "Specifications for Structural Joints Using ASTM A325 or A490 Bolts". Where galvanized members are to be welded, grind off galvanizing near the joint, weld and touch up with galvanizing repair compound.

E. Camber: Inspect beams and girders in the shop for camber and align so that they are fabricated and erected with their camber turned upwards. Camber shall not exceed the requirements of the governing documents unless approved by the Architect.

F. On exposed construction, remove erection bolts, temporary welds, run-off plates and backing strips. Fill holes from erection bolts with plug and grind smooth.

3.3 FIELD INSPECTION AND TESTING:

A. Inspection and testing are specified in Section 01410.

3.4 CLEANING IN-PLACE STRUCTURAL STEEL

A. Surfaces shall be made clean, dry to the touch, and free from moisture, grease, oil, wax, dust, lint, disintegrated coatings, or loose substances of any kind, or other matter that would prevent or impair welding or paint adhesion.

B. Before application of primer coatings, perform the following on bare surfaces or surfaces covered by cleaned soundly-adhered coatings, defined as those which cannot be removed with a putty knife:

1. Wipe previously painted surfaces with a clean, dry cloth saturated with VOC compliant cleaning agent. Wiping shall immediately precede the application of the first coat of primer.

2. Prime the cleaned substrate as specified herein or as specified in Section 09900.

3.5 AS ERECTED DRAWINGS:

A. After all steel has been erected, correct or revise the shop drawings and erection diagrams to correspond with the changes made in the field.

-- End of Section --

SECTION 05410

COLD FORMED METAL STUD SYSTEM

PART 1 GENERAL

1.1 SUMMARY

A. Provide non-load bearing metal support systems as necessary to completely conceal all non-exposed building systems components.

B. Section Includes:

1. Non-load bearing, light gauge metal furring for interior walls, ceilings and other surfaces.

2. Metal backing plates for securing materials of other sections.

C. Related Work Specified Elsewhere:

1. Cold Formed Metal Stud System.

2. Lath and plaster.

3. Gypsum wallboard.

4. Hanger wires and framing for suspended grid acoustical ceilings.

5. Thermal and sound insulation.

6. Access panels.

1.2 SUBMITTALS

A. Shop Drawings: Submit details for each typical wall, partition, ceiling, and shaft system. Show all conditions of closures at, and connections to, metal roof decking.

B. Product Data: Submit complete material list for all work of this section. Submit manufacturer's product data for all manufactured items.

C. Provide documentation demonstrating the amount of recycled material in all permanently installed metal stud framing used in the Project.

1.3 QUALITY ASSURANCE:

A. Code: Conform all installations to code. In case of conflict between contract documents and code, the more stringent requirements shall govern. Conform fire resistance rated construction to requirements of local codes and CSFM.

B. Reference Specification: Except as modified herein or required by code, conform metal support systems for plaster to the CLPCA Plaster/Metal Framing/Lath Manual and to MLSFA Metal Lathing and Furring.

C. Tolerances: Erect walls and partitions on straight lines, plumb, free of twists or other defects, and contacting a 10-foot straightedge for its entire length at any location within a 1/8" tolerance. Erect horizontal framing level within a tolerance of 1/8" in 12-feet in any direction. Erect sloped framing in true planes to same tolerance as horizontal framing.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site and store in ventilated dry locations. Storage area shall permit easy access for inspection and handling. If materials are stored outdoors, stack materials off the ground, supported on a level platform, and fully protected from the weather. Handle materials carefully to prevent damage. Remove damaged items and provide new items.

PART 2 PRODUCTS

2.1 COLD FORMED METAL STUD SYSTEM

A. The Contractor shall give priority to local manufacturers. Products of the following manufacturers are approved for use on this project, or equal:

1. CEMCO.; ICBO Evaluation Report No. ER-3403.

2. Angeles Metal Systems; ICBO Evaluation Report No. ER-1715P.

3. Western Metal Lath; ICBO Evaluation Report No. ER-2274

B. Wall Framing and Furring for Plaster: Channel-type studs, floor runners, and ceiling runners shall be formed from hot-dip galvanized, cold-rolled, copper-bearing sheet steel, conforming to ASTM A 123, Designation CS-2, G-90 coating. Studs shall be 16 gauge unless otherwise indicated. Channel-shaped steel studs shall be not less than 0.047" uncoated thickness. Stud flanges shall be not less than 1-5/16" wide. Each stud shall be designed to engage floor and ceiling runners and shall have knockouts located at not more than 24" on center. Floor runners and ceiling runners shall be not less than 20 gauge, galvanized steel with not less than 1-1/4", sized as indicated.

C. Wall Framing and Furring for Gypsum Wallboard: walls shall conform to ASTM C 955. Studs shall be C-shaped, roll-formed steel made from minimum 16 gauge, G60 hot-dip galvanized coated sheet. Stud sizes shall be as shown. Floor and ceiling runner tracks shall conform to ASTM C 955. Tracks shall be prefabricated, U-shaped with minimum 3/4" flanges, unpunched web, made from G60 hot-dip galvanized coated sheet. Bridging in loadbearing walls shall conform to ASTM C 955. Bridging shall be minimum 3/4" wide by 7/16" deep cold-rolled steel channel with weld attachment clips at each stud location or V-bar type weld or screw attached to each stud flange. Bridging shall be adequate to provide lateral support for the stud.

D. Stud gauges indicated on drawings or specified above are minimum. Where required stud height exceeds Code approvals or manufacturer's recommendations, provide heavier gauge studs and/or decrease stud spacing as necessary to conform to code approvals, at no additional contract cost.

E. Suspended and Furred Ceiling Systems and Wall Furring: Suspended ceiling framing system shall have the capability to support the finished ceiling, light fixtures, air diffusers, and accessories, as shown. The suspension system shall have a maximum deflection of L/240. Carrying channels where used shall be formed from minimum 0.0548" thick cold-rolled steel, 1-1/2" wide by 7/16" deep. Carrying channels for supports under ducts shall

be 2" in size as specified hereafter. Carrying channels shall be made from hot-dip galvanized coated sheet.

1. Gypsum Wallboard Ceilings: Furring members shall be formed from cold-rolled steel, 7/8" by 2-9/16". Furring members shall be made from hot-dip galvanized coated sheet.

F. Framing Accessories: Provide all related accessories including floor and ceiling tracks, clips, web stiffeners, anchors, and similar items, of the same manufacture as each type of stud specified, as required for complete installations.

G. Splay Wires and Compression Struts: Of approved manufacturers, acceptable to manufacturer of ceiling grids, gauges and types as required by building codes for ceiling types and weights specified.

H. Wires: Soft-annealed galvanized steel wire, 8 gauge for hanger wires and 16 gauge for framing unless otherwise specified.

I. Fasteners: Wafer head screws, self drilling type for 20 gauge metal and heavier.

J. Acoustical Foam Tape: Compressible, closed cell polyvinyl chloride foam with pressure sensitive adhesive, in rolles with protective release liner on non-adhesive face, 6 pcf density, 1" wide by not less than 1/4" thick, Norseal V730, manufactured by Norton Performance Plastics Corporation (800) 724-0883, or equal.

K. Acoustical Sealant: By USG, Gold Bond, or equal, permanently resilient type. Use only interior adhesives and sealants that meet or do not exceed the VOC limits of the current requirements of South Coast Air Quality Management District (SCAQMD) Rule No. 1168 on the interior of the building.

1. Current requirements refers to the date when the materials are installed in the building.

2. Interior refers to all building construction that is inside of an exterior weatherproofing material.

L. Zinc-Rich Paint: Conform to Fed Spec DOD-P-21035A, Z.R.C. "Cold Galvanizing Compound", manufactured by ZRC Products Company. Use for touch-up of galvanized surfaces.

M. Steel Backing Plates: Fabricate of minimum 6" wide by l6 gauge steel, or sections of studs and stud track welded to web of studs, except as otherwise indicated. Apply shop coat of metal primer.

N. Firestopping Compound: Conform to requirements of Section 07270.

O. Mineral Wool: USG Thermafiber Safing Insulation.

2.2 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 GENERAL

A. Conform installation of light gauge steel framing and furring to requirements of ASTM C 754 and ASTM C 841 except conform to this section where more stringent requirements are specified.

3.2 INSTALLATION OF STUD TRACKS

A. Bolt or screw fasten to metal and anchor into concrete with anchor bolts or with drilled expansion anchors by HILTI or equal. Concrete nails are not acceptable. Abutting lengths of track shall be securely anchored to a common structural element, butt-welded or spliced. Secure all tracks within 6" of ends and at maximum 24" centers between unless otherwise indicated.

3.3 WALL FRAMING AND FURRING FOR CEMENT PLASTER

A. Steel studs shall be installed in accordance with ASTM C 754 with spacing as indicated in ASTM C 841 for the type of lath used. The minimum stud width shall be 6", and the minimum flange width shall be 1 5/8" for all exterior walls. Studs shall be aligned and secure in top and bottom runners at spacing indicated on drawings. Two beads of acoustic sealant shall be placed between runners and substrate to achieve the required air seal. Stud splicing is not acceptable. Corners shall be constructed with a minimum of three studs. Stud framing system shall be braced and made rigid.

B. Adjoining Walls: Studs which adjoin walls shall be secured near the top and bottom, and at least one intermediate point, but not more than 5' on centers, with wire inserts, dovetail anchors, toggle bolts, or bolts set in expansion shields.

C. Wall Bracing: Partitions more than 10' long or 9' high shall be braced with 3/4" steel channel stiffeners concealed horizontally. Stiffeners shall be spaced vertically not more than 6' and shall be secured to each stud. Unsupported partitions 20' or more in height shall be braced with 1-1/2" channel type horizontal stiffeners.

D. Corners and intersections of partitions shall be formed of three studs. Studs at internal corners shall be placed not more than 2" from partition intersection.

E. Wall Openings: One metal stud shall be installed at each jamb of doors and other openings continuous from floor to ceiling, and shall be welded to jamb anchors and runner tracks. Jack studs shall be attached to runner track on interior of head of frame, and to runner track or 3/4" channel at ceiling. A 3/4" channel reinforcement shall be placed inside the partition 6" to 8" above door openings continuously through 2 stud spaces on each side of jambs, and welded to the flange. Studs shall be doubled at wall openings, with not more than 2" each side of openings. Stud placement shall be coordinated with supports for wall mounted equipment.

F. Wide-Flange Plaster Studs: Use wide-flange studs wherever plastered walls receive gypsum wallboard finish on one side.

G. Studs at ceramic tile: Studs for use with ceramic tile shall be not lighter than 20 gauge. Spacing of studs for ceramic tile shall not exceed 12" when tile is mortar set over portland cement plaster.

H. Welding Repair: Wire brush, scrape, and remove burned or damaged galvanizing, and coat all welds and bare metal with zinc rich paint.

3.4 WALL FRAMING AND FURRING FOR GYPSUM DRYWALL

A. Provide 16 gauge minimum studs at maximum 16" centers typically, unless otherwise shown, specified, or required under Subparagraph "Stud Height". The minimum stud width shall be 4", and the minimum flange width shall be 1 3/8" for all interior partitions and walls. 20 gage material is allowed for channel joists and architectural soffits only. Cut studs 1/2" short and secure to top track in manner that allows for deflection of structure above. Steel framing and furring members shall be installed in accordance with ASTM C 754 and as specified herein. Members shall be in alignment. Runners shall be aligned accurately at the floor and ceiling and securely anchored. Heavier gauge studs may be required due to unbraced length of stud. Refer to the latest manufacturer's data and provide necessary pieces to comply with manufacturer's requirements.

B. Wall Openings: The framing system shall provide for the installation and anchorage of the required subframes or finish frames for wall openings at doors, pass-through openings, and access panels. Partitions abutting continuous suspended ceilings shall be strengthened for rigidity at rough openings of more than 30" wide. Studs at openings shall be 20 gauge minimum thickness and spot grouted at jamb anchor inserts. Double studs shall be fastened together with screws and secured to floor and overhead runners. Form heads and sills of openings with track sections screwed or bolted to jamb studs, unless otherwise shown. Steel framing and furring members shall be installed in accordance with ASTM C 754. Members shall be in alignment. Runners shall be aligned accurately at the floor and ceiling and securely anchored.

C. Control joints for expansion and contraction in the walls shall be constructed with double studs installed 1/2" apart in interior walls or wall furrings where indicated on drawings. Control joint spacing shall not exceed 30'. Ceiling-height door frames may be used as vertical control joints. Door frames of less than ceiling height may be used as control joints only if standard control joints extend to ceiling from both corners of top of door frame. Control joints between studs shall be filled with firesafing insulation in fire rated partitions.

D. Studs at ceramic tile: Studs for use with ceramic tile shall be not lighter than 16 gauge. Spacing of studs for ceramic tile shall not exceed 16" when tile is thinset over portland cement backer board.

E. Walls Over 6" Wide: Where interior partitions not supporting equipment, casework or other loads are indicated with stud dimensions more than 6" in depth, install two rows of 2-1/2" minimum wide studs, using 1-1/2" runner channel cross ties at 16" centers vertically and 24" centers horizontally, all bolted, screw fastened, or welded in place. In lieu thereof, install systems equal to USG Chase Wall in conformance with manufacturer's requirements.

3.5 SOUND INSULATED WALLS AND PARTITIONS

A. Embed floor runner tracks in two beads of acoustical sealant or two strips of compressed tape seal. Install the top track in same manner for full-height insulated walls. Where wall ends abut concrete, masonry, or steel, set end studs in two beads of acoustical sealant or two tape seals and secure at 4-foot centers vertically. At irregularities in surfaces, provide additional layers of sealant or tape as required to obtain compression.

B. Double Wall Partitions: Stagger vertical framing between rows. Do not brace or connect rigid members across separation between stud rows. Use the specified resilient sway bracing only. At fire-rated conditions of 2 hours and less conform with UL design U493.

C. Installation of Resilient Channels: Attach resilient channels on 12" centers perpendicular to framing. Drive screws only through pre-punched holes in channels. Attach resilient channels with mounting flanges facing in only one direction. Orient the gap between the channel and stud faces upward on walls. Hold back ends of channels 1 to 3" from intersecting surface. Splice channels only at joist and overlap ends. Locate channels so that gypsum board will not be cantilevered more than 6" from vertical surfaces. Use care to prevent free edge of channel from contacting studs or any other material in stud cavity.

D. Damping Compound: Where metal framing provides fabric wall support and is not covered by gypsum board, spray apply damping compound directly to framing. Follow manufacturer's directive for any necessary metal preparation. Cover one side of the framing completely to a minimum of 1/2 metal gauge thickness. Damping compound may be applied after framing is installed.

E. Embed floor runner tracks in two beads of acoustical sealant or two runs of compressed tape seal. Install the top track in same manner for full-height insulated walls. Where wall ends about concrete, masonry, or steel, set end studs in two beads of acoustical sealant or two tape seals and secure at 4-foot centers vertically.

3.6 SUSPENDED CEILINGS, SOFFITS, AND FURRING

A. Hanger Wires: Secure to structure above according to code and approved submittal. Allow sufficient length for two or more complete turns around runner channels at proper ceiling height.

B. Suspended Plaster Framing: Suspended system shall be installed in accordance with ASTM C 841, and as follows. Where channels are spliced, the ends shall be overlapped not less than 12" for 1-1/2" channels and not less than 8" for 3/4" channels with flanges of channels interlocked and securely tied near each end of the splice with two loops of the tie wire. Splices shall be staggered.

1. Hangers shall be spaced not more than 48" along runner channels and 36" in the other direction or 42" in both directions unless otherwise indicated or approved. Locations of hangers shall be coordinated with other work. Hangers at ends of runner channels shall be located not more than 6" from wall. Hanger wire shall be secured to structural elements with suitable fasteners. Sags or twists in the suspended system shall be adjusted. Damaged or faulty parts shall be replaced.

2. Main Runners: Hanger wire shall be saddle-tied to runner channels, and the end of hanger wires shall be twisted three times around itself. Main runners shall not come in contact with abutting masonry or concrete walls and partitions. Main runners shall be located within 6" of the paralleling wall to support the ends of cross furring.

3. Furring Channels shall be securely saddle-tied to the runner channels and to structural supports at each crossing with tie wire, hairpin clips, or equivalent clips or fastenings. Furring channels shall be located within 2" of parallel walls and beams, and 1/2" from abutting walls. When gypsum lath is used on ceilings, hat-shaped sheetmetal furring channels may be used in lieu of 3/4" rolled steel furring channels.

4. Light fixtures and air diffusers shall be supported directly from suspended ceiling runners. Wires shall be provided at appropriate locations to carry the weight of recessed or surface mounted light fixtures and air diffusers.

C. Suspended Gypsum Wallboard Framing: Suspended ceiling system framing shall be installed in accordance with ASTM C 754, and as follows.

1. Hangers shall be spaced not more than 48" along runner channels and 36" in the other direction or 42" in both directions unless otherwise indicated. Locations of hanger wires shall be coordinated with other work. Hangers at ends of runner channels shall be located not more than 6" from walls. Hanger wire shall be secured to structural elements with suitable fasteners. Sags or twists which develop in the suspended system shall be adjusted. Damaged or faulty parts shall be replaced.

2. Main Runners: Hanger wires shall be double strand saddle-tied to runner channels and the ends of hanger wire shall be twisted three times around itself. Main runners shall be located to within 6" of the parallel wall to support the ends of cross furring. Main runners shall not come in contact with abutting masonry or concrete walls. Where main runners are spliced, ends shall be overlapped 12" with flanges of channels interlocked, and shall be securely tied at each end of splice with wire looped twice around the channels.

3. Furring channels shall be secured to the runner channels and to structural supports at each crossing with tie wire, hairpin clips, or equivalent fastenings. Furring channels shall be located within 2" of parallel walls and beams, and shall be cut 1/2" short of abutting walls.

4. Ceiling Openings: Support members shall be provided as required at ceiling openings for access panels, recessed light fixtures, and air supply or exhaust. Support members shall be not less than 1-1/2" main runner channels and vertically installed suspension wires or straps shall be located to provide at least the minimum support specified herein for furring and wallboard attachment. Intermediate structural members not a part of the structural system, shall be provided for attachment or suspension of support members.

5. Light fixtures and air diffusers shall be supported directly from suspended ceiling runners. Wires shall be provided at appropriate locations to carry the weight of recessed or surface mounted light fixtures and air diffusers.

6. Control Joints: Ceiling control joints for expansion and contraction shall be located where indicated on drawings or on approved submittals. A control joint or intermediate blocking shall be installed where ceiling framing members change direction.

   a. Interior Ceilings With Perimeter Relief: Control joints shall be installed so that linear dimensions between control joints shall not exceed 50' in either direction nor more than 2500 square feet.

   b. Interior Ceilings Without Perimeter Relief: Control joints shall be installed so that linear dimensions between control joints shall not exceed 30' in either direction nor more than 900 square feet.

7. Framing for curved applications:

   a. Barrel vaults: Install curved stud components spanning width of vault with studs spaced as indicated on drawings. Install hat channels longitudinally tied to studs.

b. Domes: Install stud ribs and curved track headers for arch length indicated on drawings.

c. Arches: Install curved track components and straight studs assembled into curved, load-bearing curved box beams and arches as indicated.

D. Splay Wires and Compression Struts: Install as detailed and as required to prevent upward and sideward motion under seismic conditions, as required by code.

E. Suspension Under Ducts: For hangers spaced at 4 to 5-1/2 foot centers, provide 6 gauge hanger wires with minimum 2" runner channels spaced at maximum 48" centers. For greater spans, design system for live load of l0 pounds per square foot of area plus dead load and detail in shop drawings.

F. Furring: Provide framing for horizontal furring as shown and required. Conform to above requirements as applicable.

3.7 BACKING PLATES AND ANCHORAGE

A. Install and attach to metal studs or furring for anchoring items indicated or specified in other sections. Comply with approved submittals specified under other sections as applicable to steel backing plates. Backing plates may be omitted where anchorage for wall-hung items is directly into steel studs of l8 gauge or heavier, or items are furnished with equivalent mounting devices. Install plates of lengths to span over at least two supports, equipped with two countersunk machine screws at each support except plates may be welded to supports 18 gauge or heavier. Wall-mounted items requiring backing plates include without limitation the following:

1. Wall railings.
2. Grab bars.
3. Toilet compartments and urinal screens.
4. Toilet room accessories.
5. Plumbing fixtures.
6. Steel ladders.
7. Wall Mounted Televisions
8. Signage, as noted
9. Casework

3.8 FRAMED CEILINGS

A. Where framed ceilings are shown, construct ceilings consisting of steel studs for walls and for ceilings. Securely weld or screw attach flanges of horizontal studs to stud tracks for walls. Spacing of studs shall not exceed 24" for walls and for ceilings. Provide bridging in ceilings where width exceeds 8 feet. The assembly shall be rigidly braced to structure above by means of diagonal braces or taut wires as applicable. Provide additional diagonal braces for ceilings wider than 8 feet. 20 gauge material is allowed for channel joists and architectural soffits only.

3.9 CONNECTIONS TO METAL DECKING

A. Provide premolded neoprene filler strips matching the flute profile for non-fire-rated walls and partitions covered on one or both sides up to metal decking.

B. The top runner track of fire-rated partitions shall be a minimum of 16 gauge and attached to the metal deck with approved fasteners at spacing required for fire rating, but in no case over 16" o.c. Neither the wallboard nor the metal studs shall be attached to the top runner to allow for slab deflection. Areas above the runner shall be friction fit with a minimum depth of 2-1/2" of 4. pcf mineral wool insulation. A minimum of 1/2" of firestopping compound shall be applied to each side of the mineral wool insulation for 1-hour system, and 1" of firestopping for a 2 hour system. Install required special tracks, angles, fasteners and strips of gypsum wallboard as required to achieve required fire resistance rating.

C. If proprietary fire-rated top tracks are used, the installation shall be in accordance with manufacturer's recommendations and fire rating approval requirements.

3.10 TOUCH-UP PAINTING

A. Spot prime all abraded and damaged areas of zinc coating as specified.

-- End of Section --

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Work Included: Provide and install all miscellaneous metal and metal fabrications in place, as indicated on the Contract Drawings and hereafter specified or needed for complete and proper installation.

1.2 SUBMITTALS

A. General: Comply with pertinent provisions in the SUBMITTALS in DIVISION 1 – GENERAL REQUIREMENTS of these Specifications.

B. Provide documentation demonstrating the amount of recycled material in all permanently installed miscellaneous steel used in the Project.

B. Shop Drawings: Submit for all items proposed to be fabricated and installed under this Section. Identify each proposed item with corresponding Contract Drawing detail and Specification references.

1.3 QUALITY ASSURANCE

A. Inspection of shop fabrication shall be as required by the Building Code and the California Building Code.

B. Qualifications of Personnel: Use only adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the necessary crafts and with the specified requirements and methods needed for proper performance of the work of this Section.

C. Welder's Qualifications: Currently qualified according to AWS D1-1, and the Department of Building and Safety.

D. Design: Fabricate and erect work in accordance with A.I.S.C.

E. Welding Operations: Perform shop and field welding required in connection with work of this Section in strict accordance with pertinent recommendations of the American Welding Society (AWS).

F. Project Conditions: Do not fabricate components which require fitting to structural elements or into finished spaces until dimensions are verified at the job-site.

G. Provide shop inspection.

PART 2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

A. General:

1. All material shall conform with the following requirements and shall be of new stock of the highest grade available, free from defects and imperfections, of recent manufacture and unused. Where two or more identical articles or pieces of equipment are required, they shall be of the same manufacture.

2. All metals shall be free from any defects which would impair the strength, durability, appearance, and shall be of the best commercial quality, for the purposes intended and adequate to withstand the strains and stresses to which they will be subject. Metals shall be protected from injury at the job, in transit, and until erected in place, inspected, and approved.

B. For areas exposed to frequent washing, use AISI Type 316L, (UNS Designation S 31603) low carbon, chromium-nickel steel with No. 4 finish, unless otherwise indicated or specified, in accordance with the following standards for the forms and types of stainless steel for the required items of work:

1. Bar stock: ASTM A276.

2. Plate, Sheet and Strip: ASTM A167.
Tubing: ASTM A269

3. For areas not exposed to frequent washing, stainless steel may be AISI Type 302 (UNS Designation S 30200) or Type 304 (UNS Designation S 30400), unless otherwise indicated.

C. Stainless steel may be AISI Type 302 (UNS Designation S 30200) or Type 304 (UNS Designation S 30400), unless otherwise indicated.

D Welding Electrodes: Conform to AISC and ASTM A233 and the Code for Arc and Gas Welding in Building Construction, A.W.S. Publication D1.1 use E-70XX Series Electrodes.

E Aluminum: Provide aluminum conforming to ASTM B261. Accurately fabricate the material, free from blemishes and irregularities. Finish shall be mill finish and painted.

F Hot-Dip Galvanizing: Conform to ASTM A123 after fabrication.

G Fasteners: Same material and finish of work to be fastened together; screws to be countersunk oval head type, unless otherwise indicated on the Drawings.

H Mechanical Anchors: For securing miscellaneous metal items to concrete to be self-drilling concrete anchors, not less than 3/8-inch size, Phillips Redhead, or as otherwise indicated on the Drawings.

I Bolts and Nuts: Low-carbon hexagon-head type, ASTM A-307, Grade "A" or "B".

J Dry Pack: A cement-sand mix of 1 part Portland cement to 2-1/2 parts sand by volume with necessary water added to provide for solid compaction.

K. Primer: Use "10-99 Tnemec Primer" or "Rustoleum Number 5769 Primer.

L. For Repair of Galvanizing: Use a high zinc-dust content paint complying with MIL-P-21035.

M. Galvanizing: Provide a zinc coating for those items shown or specified to be galvanized as follows and as applicable:

1. ASTM A153 for galvanized iron or steel hardware.

2. ASTM A123 for galvanized rolled, pressed or forged steel shapes, plates, bars and strip 1/8-inch thick and heavier.

3. ASTM A386 for galvanized assembled steel products.

N. Shop Painting: Use primer complying to FS TT-P-862, Type I, rust inhibitive product, compatible with finish coat specified in Section 09900. Field paint shall be in colors selected by the Architect.

1. Required: On all uncoated ferrous metals; galvanized ferrous metal not to be shop coated.

2. Painting: Full prime coating, completely covering the metal surfaces; at least 1 coat on all surfaces which will be accessible after fabrication and erection; at least 2 coats on all surfaces which will be inaccessible after erection.

3. Remove scale, rust and other deleterious materials before application of Shop Coating.

4. Clean off heavy rust and loose mill scale in accordance with SSPC-SP-2 or SSPC-SP-3 before coating.

5. Remove oil, grease and similar contaminants in accordance with SSPC-SP-1.

O. Provide structural support for toilet partitions concealed from view.

PART 3 EXECUTION

3.1 INSTALLATION

A. General:

1. Set work accurately into position, plumb, level, true, and free from rack.

2. Anchor firmly into position.

3. Where field welding is required, comply with AWS recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for methods to be used in correcting welding work. Grind exposed welds smooth, and touchup shop prime coats.

4. Do not cut, weld, or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or screwed field connections.

5. Dissimilar Materials: Where metals are in contact with plaster, or dissimilar metals, paint contact faces of the metal before installation with a heavy bituminous coating.

B. Immediately After Erection: Clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

3.2 CLEAN-UP AND ADJUSTMENT

A. During the progress of the work, keep the premises free from debris and waste resulting from work of this Section. Upon completion of this Section remove all surplus materials and debris from the job-site. Immediately after erection, clean the field welds, bolted connections and abraded areas of shop priming. Paint the surfaces with the same material used for the shop priming.

B. Adjustments: Adjust all operating parts and/or assemblies as may be required to provide the necessary function and smooth operation.

-- End of Section --

SECTION 06117

MISCELLANEOUS CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install wood shims, blocking furring, nailers, and miscellaneous carpentry as indicated on the drawings and specified.

1.2 SUBMITTALS

1. All materials and fasteners proposed

1.3 QUALITY ASSURANCE

A. Structural and framing lumber shall be graded in accordance with the "Standard Grading Rules" of the West Coast Lumber Inspection Bureau (WCLIB) or the "Western Lumber Grading Rules" of the Western Wood Products Association (WWPA) latest editions.

B. Plywood shall conform to requirements of "Product Standard PS 1-83 issued by the U.S. Department of Commerce, and shall be grade marked by a recognized grading agency (APA and PTL).

C. Preservative and fire treated lumber shall be identified by the Quality Mark of an approved inspection agency in accordance with the California Building Code, latest edition, and Title 24.

1.4 REGULATORY REQUIREMENTS

A. Conform to Chapter 23, of the California Code of Regulations, Title 24 - Building Standards, Part 2, latest California Building Code with State Amendments.

PART 2 PRODUCTS

2.1 MISCELLANEOUS CARPENTRY

A. Lumber Grading Rules: WCLIB.

1. Moisture Content: 19% maximum

B. Species: Douglas Fir or as indicated on Drawings.

C. Treated wood nailers:
1. Installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19% by weight on a dry-weight basis.
2. Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot

(4,500 Newtons/lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center or 16 inches (0.4 m) on center if necessary to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. Nailer attachment shall meet this requirement and that of the current Factory Mutual Loss Prevention Data Sheet 1-49.

3. Thickness shall be as required to match substrate or insulation height to allow a smooth transition.

4. Any existing nailer woodwork which is to remain shall be firmly anchored in place to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons/lineal meter) in any direction and shall be free of rot, excess moisture or deterioration. Only woodwork shown to be reused in Detail Drawings shall be left in place. All other nailer woodwork shall be removed.

D. Preservative Treatment: Pressure-treat wood with water-borne preservatives to a minimum retention of 0.25 pcf and comply with AWPA requirements. For interior uses, after treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

1. Wood shims, cants, nailers, curbs, equipment support bases; blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2. Wood blocking, furring, stripping, and similar concealed members in contact with walls.

E. Fire retardant treatment shall conform to AWPA Treatment C20. Type A or B.

1. All wood in concealed locations shall be fire rated.

F. Fasteners and Anchors:

1. Metal Screws: Bugle head, hardened steel, power driven type, length to achieve full penetration of the substrate.

2. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.

a. Use only common wire nails or spikes whenever indicated, specified or required.

b. Whenever necessary to prevent splitting, holes shall be prebored for nails and spikes.

c. Nails in plywood shall not be overdriven.

G. Connectors: Hot dipped galvanized steel.

H. Install plywood sheathing as a wall finish material where indicated.

1. Paint the front face white, 2 coats.

2. Back paint the back face one coat, any color.

PART 3 EXECUTION

3.1 INSTALLATION

A. Set miscellaneous rough carpentry and accessories members level and plumb, in correct position.

-- End of Section --

SECTION 06400

ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SUMMARY

A. Fabrication and installation of architectural casework including drawers, doors, countertops, wall cabinets, hardware and cabinet accessory equipment indicated on the Contract Drawings and hereinafter specified.

1.2 RELATED WORK

A. Sealants and Caulking Section

B. Back Priming and Painting Section

1.3 SUBMITTALS

A. All submittals shall conform to the provisions of the SUBMITTALS Section of DIVISION 1 - GENERAL REQUIREMENTS.

B. Shop Drawings: Submit shop drawings of all custom casework indicating materials and hardware, details of construction, dimensions, methods of fastening and erection details. Shop Drawings shall bear a W.I. certified compliance label indicating that Drawings fully meet the requirement of the W.I. Custom grade. Shop Drawings shall indicate all grounds, backing, blocking, sleepers and other items required for the installation of casework, which are to be provided and installed as part of the structure.

C. Manufactured Product Information: Submit manufacturers cut sheets and installation requirements.

D. Samples: Submit 2" x 3" plastic laminate chips bearing the manufacturer's name, color, pattern or texture designations.

E. Manufacturer's Recommended Installation Procedures: Such submitted procedures approved by the Owner will become the basis for Owner's inspection and acceptance or rejection of actual installation procedures used on the work of this Section.

1.4 QUALITY ASSURANCE

A. Workmanship: All work of this Section to be constructed, assembled and installed by skilled crafts persons skilled in finish carpentry in compliance with W.I. construction types and grades hereinafter specified and detailed on the Contract Documents. All such work to be accurately fabricated, assembled, joined and expertly finished in accordance with measurements taken on the job-site.

B. Defective Work: All casework, shelving and countertops not true to line, not in satisfactory operating condition, improperly installed, damaged or marred will not be accepted. Remedy, remove or replace defective work as directed by the County Engineer subject to his approval at no cost to the Owner.

C. Standards: All applicable Sections of the "Manual of Millwork" and current supplements published by the Woodwork Institute (W.I.), formerly the Woodwork Institute of California,

for the construction types and grades hereinafter specified or shown on the Contract Drawings. All modifications to such standards shown on the Contract Drawings and approved Shop Drawings or specified shall govern.

D. Qualifications of Manufacturer: Product shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Owner.

E. Qualifications of Installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

F. Certification: Before delivery to the job-site, Manufacturer shall issue a W.I. Certified Compliance Certificate indicating that casework to be furnished for this project will fully meet all specified requirements of W.I. grades.

1. All laminated plastic countertops shall bear the W.I. Certified Compliance Label indicating the tops meet the requirements of the W.I. Custom grade.

G. Inspection: To assure quality as specified, the Owner may inspect Work in the process of the manufacturer or the finished casework prior to delivery and installation to assure quality of Work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery: Cabinets, countertops, and materials shall be delivered to the job-site in undamaged condition in crates or suitable packaging bearing the manufacturer's label and model number. All cabinets and countertops delivered to the job-site for installation shall be properly identified as to where they are to be located within the structure.

B. Storage: All cabinets and countertops shall be stored where directed by the Owner, in fully covered, well ventilated area(s) and protected from extreme changes in temperature and humidity before installation.

C. Protection: Use all means necessary to protect Work of this Section before, during and after installation and protect the installed Work and materials of other trades.

D. Replacements: In the event of damage, Contractor or Manufacturer shall immediately make necessary repairs or replacement to the approval of the Owner at no added cost to the Owner.

1.7 GENERAL REQUIREMENTS Verification of Job Conditions:

A. Prior to fabrication, take necessary field measurements to assure proper dimensions for the Work of this Section and report to the Owner any discrepancies between the Contract Drawings and the Specifications and/or job conditions and await for further instructions from the Owner.

B. Coordination and Cooperation: Required of Work operations of this Section with other trades, including mechanical and electrical work to be incorporated into cabinets and installation without delaying work progress.

C. Guarantee: Provide a written guarantee which in addition to the warranty requirements of the Contract Documents, shall include the removal and replacement of all cabinet doors that develop a warp or wind of 1/8" or more.

PART 2 PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

A. Wood-Based Materials Certified Wood Product Resources:

1. All wood-based materials must be Forest Stewardship Council (FSC) certified.

2. Scientific Certification Systems (SCS):

a. http://www.scscertified.com/forestry/forest_certclients.html

3. SmartWood Certification Program (SW):

a. Visit http://www.smartwood.org, select the "SmartWood Certified Products" link, then under "FSC" select "Search for Products."

4. Forest Certification Resource Center:

a. Visit http://www.certifiedwood.org/, under "Search For" select "Certified Forest Products."

5. EcoTimber: 1611 Fourth Street, San Rafael CA, 415.258.8454.

6. EarthSource Forest Products: 1618 28th Street, Oakland CA, 866.549.9663.

B. Composite wood or agrifiber products shall NOT contain any added Urea Formaldehyde binders or adhesives. These products include, but are not limited to, Plywood, Medium Density Fiberboard (MDF), Oriented Strand Board (OSB), Wheat Boards, Strawboards, Doors and Doors Cores, Laminated Wood Products.

C. Laminating Adhesives used to apply any composite wood-based product to any material substrate shall NOT contain any Urea Formaldehyde.

2.2 MATERIALS

A. General: In compliance with Sections of the W.I. Manual applicable to the construction types and grades and modifications hereinafter specified and noted on the Contract Drawings.

B. Materials for Concealed Portions of Cabinets: Operational as per Section 14 of the W.I. Manual.

C. Laminated Plastic Clad Cabinets, Shelves, Doors and Countertops: High pressure thermo setting plastic laminate conforming to N.E.M.A., LD 3 - Latest Edition of the W.I. Manual.

1. Colors and Patterns: As selected by the Owner from manufacturer's standard color and pattern palette or as noted on the Contract Drawings.

2. Laminate Thicknesses: For surfaces other than countertops minimum .028-inch; for cabinet liners minimum thickness as noted in W.I. Manual; for shelves, countertops and splashes minimum 0.050-inch.

3. Core Material: Medium Density Fiberboard (MDF) complying with ANSI A208.2-1994 and shall be as manufactured by Sierra Pine Ltd, or equal, with no added formaldehyde, and recycled or rapidly renewable material content.

4. Laminating Adhesive: Type II Adhesive, water-resistant, rigid type of caseinalkaline formula containing no formaldehyde content and conforming to PS 51-71. Field applied adhesive shall not exceed VOC limits of SCAQMD Rule No. 1168.

5. Edge Banding: "T" type extruded tenite-butyrate, 1/16" minimum thickness with serrated leg 3/8" length.

6. Total Thickness of Cabinets and Countertop Components: 3/4-inch or 1-inch or as otherwise detailed on the Drawings and as noted in the W.I. Manual.

D. Conventional Cabinets - Wood (other than Laminated Plastic Clad):

1. Medium Density Fiberboard (MDF) shall comply with ANSI A208.2-1994, shall meet sustainable Requirement No. 2 as listed above, and shall be as manufactured by Sierra Pine Ltd, or equal, with no added formaldehyde, and recycled or rapidly renewable material content:

   a. Medex: An MDF panel with no added formaldehyde, designed for moisture sensitive applications. In lieu of Medex, Wheat Sheet by Ecoproducts (or equal) may be provided.

   b: Medite II: An MDF panel with no added formaldehyde, specified for interior use.

2. Edge Banding: Same species of wood as adjacent exposed wood surfaces.

E. In lieu of plywood, fiberboard, or particleboard, wheatboard may be provided. Subject to compliance with specified requirements, wheatboard shall be the product of one of the following manufacturers (or equal):

1. Phoenix Biocomposites, "boifiber wheat".

2. Ecoproducts, "Wheat Sheet".

3. Primeboard, Inc., "Primeboard".

F. Casework Hardware: Provide and install all rough and finish hardware as necessary for complete installation, but not limited to the following:

1. Concealed hinges by Amerock 180 degrees, No. CM-1727-14 or approved equal.

2. Cabinet Door Pulls by Stanley No. 4477 or approved equal.

3. Cabinet Door Locks, pin tumbler type by National Lock or approved equal.

4. Magnetic Catches by Stanley Epco No. 592 or Lawrence SC1364-AL or approved equal.

5. Shelf Standards and Brackets, K & V No. 255x256 or Stanley No. 798x799, steel zinc plated or approved equal.

6. Miscellaneous hardware including, but not limited to the following: Spikes, bolts, screws, lags, shields, straps, angles, cleats and other related items for fabrication and installation.

7. Drawer Guides; KV1300, KV1330, Krona-Flex 1336, HDI 2800, Grant 336 or equal for all drawers except file drawers which shall have KV1460, Grant 329, Accuride 3008, 3009, 4025, 4037; Waterloo 2950, HDI 2910, full extension drawer guides or approved equal.

2.3 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 GENERAL FABRICATION

A. General:

1. Work of this Section shall be fabricated in strict accordance with designs on the Contract Drawings and approved Shop Drawings, conforming to construction requirements for W.I. Custom Grade, flush overlay construction.

2. Cabinet units and countertops shall be shop fabricated as complete sections of adequate size to permit easy handling, access to installation areas for assembly or required for setting in place and installing of closing pieces or components.

3. Make holes or cutouts necessary for incorporation of mechanical and/or electrical work into the cabinet units and countertop as detailed or specified.

B. Plastic Covered Cabinets:

1. Shop fabricate as complete units of adequate size to permit easy handling, access to installation areas for assembly or required setting in place and installing of countertops and closing pieces.

2. Cabinet interiors to be covered with colored melamine liner material. Melamine liner shall conform to NEMA LD3 requirements.

3. Shelves to be 3/4" thick Medite, or equal ply-wood for spans up to 35-inches and for spans up to 45-inches shall be 1-inch thick and covered with laminated plastic on both sides and exposed edges plastic on both sides and exposed edges plastic edgebanded.

4. Cabinet hardware hereinbefore specified in this Section shall be installed by the Cabinet manufacturer in accordance with approved Shop Drawings and shall be adjustable to 1" center. Hinges to be routed into door edges. Doors over 40" high to receive 3 hinges secured in place with Type "A" Phillips head sheet metal screws.

5. Drawers: Sides, back and sub-fronts shall be of dovetail construction made of ½" thick Medite. Drawer bottom shall be 3/8" thick tempered hardboard, plowed

into sides, front and back, glue-blocked and nailed. Fronts shall be ¾" thick plastic laminate construction, fully edgebanded with plastic "T" banding or plastic laminate. Bonding joints shall occur at center of bottom edge of panel.

6. Doors: Overlay type with flush exposed surfaces, fully edgebanded with plastic "T" banding or plastic laminate. Joints in banding shall occur at center of bottom edge. Doors of base and/or wall cabinet units within any group of adjacent units shall be in alignment.

7. Wall Cabinets: Exposed bottom of such cabinets shall have laminate finish or finish of wood cabinets.

C. Laminated Plastic Covered Countertops: Colors per Finish Schedule.

1. Fabricate to type and sizes indicated on the Contract Drawings with 4- or 6-inch high back and side splashes as measured from the exposed counter surface and no drip leading edge. Rolled edges shall rise 1/8-inch above the counter surface.

2. Core material for counters and back splash shall be 3/4-inch MDF, Type I, Medite, or equal.

3. Make holes and/or cutouts as necessary for mechanical and/or electrical work to be incorporated into the countertop as detailed or specified. Provide 3" grommets at every 3' of counter surface, unless otherwise noted.

4. Make joints with screw clip fasteners on not less than 8-inch centers. A water resisting mastic or glue shall be applied in the joints. Joints shall not occur at sink cutouts.

5. Metal sink moldings shall be stainless steel "Hudee", "Kintrim T-Type" or "Chromedge Sink-Lok" complete with bolts and lugs or as otherwise detailed on the Contract Drawings.

6. Cover countertop and splashes with solid core colored laminated plastic as selected by the Owner.

7. Side and back splashes shall rest on the top, be set in mastic and be secured to the top with screws on 8-inch centers. Edges of splashes shall be self-edged and scribed to the walls.

8. Application of plastic laminate to countertop shall be in accordance with published specifications and recommended practices of the plastic laminate manufacturer.

9. Mastic: Metal trim shall have a thorough application of an approved mastic in voids between metal, MDF and sink. Counter cut-out edges shall be waterproofed to prevent delamination of MDF. Metal trim shall be applied over the finished plastic surfaces without kerfing, routing, or "letting-in" of moldings or trim.

3.2 INSTALLATION

A. General: All in strict accordance with the approved Shop Drawings, Contract Drawings and referenced W.I. Standards. Cabinets and countertops shall be installed by the manufacturer or by an experienced person under the supervision of the manufacturer.

B. Preparations: All grounds, backing, blocking, furring and other anchorages required for cabinet and countertop installation which become an integral part of a floor, wall or partition shall be in place ready to receive the cabinets and countertops. Start of installation of Work of this Section shall imply Contractor's (manufacturer's acceptance of job conditions).

C. Inspection: Manufacturer or Installer of cabinets and countertops shall examine the areas and conditions under which Work of this Section will be installed.

1. Correct conditions detrimental to timely and proper installation of cabinets and countertops.

2. Do not proceed until detrimental conditions have been corrected at no added cost to the Owner.

3. Start of installation of cabinets and countertop shall imply Contractor's acceptance of job conditions.

D. Cabinet Installation:

1. All cabinet units delivered to the job-site shall bear the W.I. grade stamp verifying compliance with the specified W.I. Type II construction grade B.

2. Cabinets: Set all base and wall cabinets level and plumb and secure to walls. All screws shall have finish washers.

3. End Panels and Fillers: Furnish to match exposed surfaces and accurately scribe to walls and neatly and securely fit to cabinets.

4. Matching Lacquered Wood Molds: Fasten to cabinets when required for scribing purposes and at top of cabinets as indicated.

5. Completion: Upon completion of the installation, cabinets including drawers and shelves shall be cleaned. Doors and drawers shall operate easily and freely.

6. Install all hardware items in accordance with approved Shop Drawings.

7. Scribe plastic laminated cabinets directly to wall. Do not use scribe moldings or fillers.

E. Laminated Plastic Countertop Installation:

1. Secure countertop to base cabinets in level and aligned position with minimum four No. 10 x 1-1/4" round head wood screws per base cabinet. Provide additional screws at the front and back of each cabinet on both sides of countertop joints.

2. Countertop Joints: Make flush and hairline by cutting back each joint edge to 85 degrees and secure together using adequate number of "trite joint" fasteners or approved equal at 3-inch centers.

3. Join countertop surfaces to adjacent vertical wall or other surfaces and fabricate edges to conform to manufacturer's recommendations or as otherwise detailed.

4. Where no back or side splashes are on countertops accurately scribe countertop edges to wall surfaces and caulk.

3.3 COMPLIANCE

A. Performance of Work: The Owner reserves the right to request and pay for an inspection by a W.I. representative to determine that Work of this Section has been performed in accordance with the specified standards.

B. Non-Conforming Work: If the W.I. representative determines that Work of this Section does not comply, Contractor shall immediately remove non-conforming items and replace it with complying items at no added cost to the Owner and reimburse the Owner for the cost of the inspection(s).

3.4 CLEAN-UP

A. Visually inspect each installed cabinet unit, including shelves, drawers and countertops and thoroughly clean all surfaces using cleaning materials recommended by the manufacturer of the finish being cleaned and carefully adjust all operating components for optimum operation of drawers and doors.

B. Remove all excess materials, equipment, rubbish and debris from the job-site. All areas in the structure used by the Contractor to be left in a clean, acceptable and safe condition.

-- End of Section --

SECTION 07200

THERMAL AND ACOUSTICAL INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Provide insulation work located within the building framing and partitions at the job-site as indicated or noted on the Contract Drawings and in these Specifications, including the exterior walls of the existing structure.

1.2 QUALITY ASSURANCE

A. Certificate of Compliance: Upon completion of this portion of the Work, complete and post a certificate of insulation compliance in accordance with pertinent requirements of governmental agencies having jurisdiction.

B. Manufacturer: Manufacturer shall mark insulation with the manufacturer's name or trademark; thermal resistance "R" value, (insulation only) and the thickness to obtain this "R" value. Markings shall be at no more than 8-foot intervals.

1.3 SUBMITTALS

A. Product Data: Submit to the Owner after award of Contract.

B. Certification: Submit "Certification" that materials and installation comply with the Project Specifications; also Energy Insulation Certification.

1.4 PRODUCT HANDLING

A. Delivery: Insulation materials to be delivered to the job-site in their original and properly marked and unbroken packages.

B. Storage: Store all materials at the job-site undercover, protected from weather, moisture and damage from any cause, with all labels intact and legible at time of installation.

1.5 INSPECTION

A. Required by the Owner prior to closing-in of walls, lathing and other construction.

PART 2 PRODUCTS

2.1 RECYCLED MATERIALS

A. Thermal Insulation containing recycled materials is required.

B. The minimum required recycled materials content by weight are:

1. Rock Wool: 75 percent slag

2. Fiberglass: 20 to 25 percent glass cullet

3. Rigid Insulation:

4. Do not provide asbestos-containing materials.

2.2 DETAILED REQUIREMENTS

A. "R" Values: As indicated on the drawings,

B. Thermal and Acoustical Building Insulation: Owens-Corning, Certainteed, or equal, Fiberglass 3 inch thick blankets or batts with or without vapor seal Kraft paper on one face extending to form stapling flanges on both edges; width to fit between studs.

C. Thermal Insulation on Underside of Roof Structure:

1. Insulating mineral wool fiber batts or blankets with a vapor-seal backing paper, Fed. Spec., HH-1-521E as approved by the Owner and having a thermal conductivity "K" factor not exceeding 0.27 Btu.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

A. Required: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until such detrimental conditions are corrected.

B. Remove or protect against, projections in the construction framing which may damage or prevent proper installation of the insulation.

3.2 INSTALLATION

A. General: Install work of this Section in accordance with the original design, requirements of governmental agencies having jurisdiction. Install materials to conform to the California Building Code and the manufacturer's recommended installation procedures as approved by the Owner or the Consultant, fastening all components firmly into position where indicated on the Contract Drawings.

B. Locations: Within studs in partitions separating all toilet rooms from other occupied rooms or areas and elsewhere indicated on the Contract Drawings.

3.3 INSTALLATION OF BATTS AND BLANKETS

A. Application:

1. Completely fill spaces between framing members; snugly butt adjacent batts together; to provide continuous insulation between framing members.

2. Face vapor barrier flanges of insulation material inward.

3. Cut neatly to fit angles, irregular spaces, for proper fastening and tight insulation.

4. Split and wrap around conduit, pipe, or other obstructions, as required to maintain continuity of installation.

5. Repair or replace any break or tear of the insulation as recommended by the insulation manufacturer.

6. Cut blankets to required length to extend from top of wall or partition to floor level, fasten to each stud secured in place by weaving horizontal galvanized light gage wire at 12-inch spacings or by stitch stapling the flanges together through web openings not to exceed 8-inches O.C.

7. Underside of roof framing: Restrain insulation to prevent sagging, using one of the following methods:

   a. 10 gauge galvanized wire with pointed ends spaced 6-inch O.C. between end supports.

   b. 18 gauge wire diagonal lacing stapled to framing members. Space not over 24-inches, stagger spacing on opposite member.

   c. Mesh (poultry wire) staple to framing members at 12-inches O.C.

8. Maintain clearances at heat producing devices such as recessed lighting fixtures, ballasts and HVAC equipment in accord with ANSI C1, and the National Electrical Code recommendations.

3.4 CERTIFICATE OF COMPLIANCE

Upon completion of work of this Section, the Contractor and the Insulation Contractor shall execute "The Certificate of Compliance", certifying that the insulation has been installed in compliance with Article 5, Subchapter 1 of Title 25 of the California State Energy Code. Such "Certificate" shall be prominently posted in a conspicuous location within the building as directed by the Owner. Certificate shall be signed by both the Contractor and Insulation Contractor.

NOTE: Fill out the attached "Energy Insulation Certification."

COUNTY, DEPARTMENT OF BUILDING AND SAFETY

ENERGY INSULATION CERTIFICATION

This is to certify that insulation has been installed in conformance with the current energy regulations, California Administrative Code, Title 25, State of California, in the building located at:

_____

Number Street City

INSULATION SPECIFICATIONS

Ext. Walls:_____ Thickness ____ R. Value _____

Ceilings: Batts -_____ Thickness ____ R. Value _____

Blown -_____ Thickness _____ R. Value _____

Floors: Thickness _____ R. Value _____

General Contractor: _____ License No. _____

By: _____ Title_____ Date _____

Insulation Contractor: _____ License No. _____

By: _____ Title _____ Date _____

DO NOT REMOVE

"Certificate of Compliance"

-- End of Document --

SECTION 07299

ACOUSTICAL PADS

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the following acoustical pads as indicated on the drawings and specified.

1. Acoustical door sealing: Seal acoustical doors to ensure that there are no gaps that will permit the passage of sound.

2. Outlet box pads: Seal all electrical outlet boxes, light fixtures, intercoms, telephone, elevator call boxes, and other services that require the penetration of walls and ceilings.

3. Sound insulated partitions and openings: Seal all sound insulated partitions and openings to form a completely airtight perimeter.

B. Sound Attenuation Performance: Provide systems constructed to achieve the minimum ratings for sound transmission class (STC) per ASTM E90, and indicated in the acoustical specifications.

1.2 QUALITY ASSURANCE

A. Submit product data from manufacturers for each type of product proposed for use.

B. Pre-Installation Conference: Conduct conference at Project Site to coordinate the acoustical specialty work with the various trades and products involved.

PART 2 PRODUCTS

2.1 OUTLET BOX PADS

A. Outlet box pads shall be Lowry's Electrical Box Pads as manufactured by Harry A. Lowry & Associates, or equal.

1. Composition: Polybutene-butyl, inert fillers (asbestos free).

2.2 ACOUSTICAL SEALANT

A. Acoustical sealant shall be by USG, Tremco, or equal.

2.3 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 INSTALLATION OF ACOUSTICAL PADS

A. Install acoustical pads and sealants in accordance with the manufacturer's installation instructions.

-- End of Section --

SECTION 07900

SEALANTS AND CAULKING

PART 1 GENERAL

1.1 SUMMARY

A. Throughout the Work furnish all tools, equipment, materials, and supplies and perform all labor to provide a positive barrier against passage of air or moisture from the exterior.

1. Caulk and Seal around entire exposed perimeters of all penetrations and openings through walls and for slabs on grade where any item is installed in the opening or through the penetrations.

2. Caulk and seal the sheet metal flashings and other items penetrating through the roof.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. All materials specified herein shall conform to the requirements of the publications hereinafter listed, to the extent that the requirements therein specified are not in conflict with the provisions of this Section.

2. References to "ANSI" shall mean the American National Standards Institute Publication A116.1-1967 "Two Component Elastomeric Sealing Components for the Building Trade".

3. SCAQMD rules and regulations.

B. Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Owner. Manufacturer shall have been on business of manufacturing the specified types of Sealants for not less than 10 years.

C. Qualification of Installers:

1. Installers shall be thoroughly trained and experienced in the necessary skills and be thoroughly familiar with the specified requirements and shall have a minimum of 5 years experience installing caulking and sealants.

2. Installers shall be completely familiar with the joint details shown on the Contract Drawings and installation requirement hereinafter specified in this Section.

1.3 SUBMITTALS

A. Submit promptly after receipt of the Owner's "Notice to Proceed."

1. A complete materials list showing all items specified to be furnished and installed under this Section.

COUNTY, DEPARTMENT OF BUILDING AND SAFETY

ENERGY INSULATION CERTIFICATION

This is to certify that insulation has been installed in conformance with the current energy regulations, California Administrative Code, Title 25, State of California, in the building located at:

_____

Number Street City

INSULATION SPECIFICATIONS

Ext. Walls:_____ Thickness ____ R. Value _____

Ceilings: Batts -_____ Thickness ____ R. Value _____

Blown -_____ Thickness _____ R. Value _____

Floors: Thickness _____ R. Value _____

General Contractor: _____ License No. _____

By: _____ Title_____ Date _____

Insulation Contractor: _____ License No. _____

By: _____ Title _____ Date _____

DO NOT REMOVE

"Certificate of Compliance"

-- End of Document --

SECTION 07299

ACOUSTICAL PADS

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the following acoustical pads as indicated on the drawings and specified.

1. Acoustical door sealing: Seal acoustical doors to ensure that there are no gaps that will permit the passage of sound.

2. Outlet box pads: Seal all electrical outlet boxes, light fixtures, intercoms, telephone, elevator call boxes, and other services that require the penetration of walls and ceilings.

3. Sound insulated partitions and openings: Seal all sound insulated partitions and openings to form a completely airtight perimeter.

B. Sound Attenuation Performance: Provide systems constructed to achieve the minimum ratings for sound transmission class (STC) per ASTM E90, and indicated in the acoustical specifications.

1.2 QUALITY ASSURANCE

A. Submit product data from manufacturers for each type of product proposed for use.

B. Pre-Installation Conference: Conduct conference at Project Site to coordinate the acoustical specialty work with the various trades and products involved.

PART 2 PRODUCTS

2.1 OUTLET BOX PADS

A. Outlet box pads shall be Lowry's Electrical Box Pads as manufactured by Harry A. Lowry & Associates, or equal.

1. Composition: Polybutene-butyl, inert fillers (asbestos free).

2.2 ACOUSTICAL SEALANT

A. Acoustical sealant shall be by USG, Tremco, or equal.

2.3 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 INSTALLATION OF ACOUSTICAL PADS

A. Install acoustical pads and sealants in accordance with the manufacturer's installation instructions.

-- End of Section --

SECTION 07900

SEALANTS AND CAULKING

PART 1 GENERAL

1.1 SUMMARY

A. Throughout the Work furnish all tools, equipment, materials, and supplies and perform all labor to provide a positive barrier against passage of air or moisture from the exterior.

1. Caulk and Seal around entire exposed perimeters of all penetrations and openings through walls and for slabs on grade where any item is installed in the opening or through the penetrations.

2. Caulk and seal the sheet metal flashings and other items penetrating through the roof.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. All materials specified herein shall conform to the requirements of the publications hereinafter listed, to the extent that the requirements therein specified are not in conflict with the provisions of this Section.

2. References to "ANSI" shall mean the American National Standards Institute Publication A116.1-1967 "Two Component Elastomeric Sealing Components for the Building Trade".

3. SCAQMD rules and regulations.

B. Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Owner. Manufacturer shall have been on business of manufacturing the specified types of Sealants for not less than 10 years.

C. Qualification of Installers:

1. Installers shall be thoroughly trained and experienced in the necessary skills and be thoroughly familiar with the specified requirements and shall have a minimum of 5 years experience installing caulking and sealants.

2. Installers shall be completely familiar with the joint details shown on the Contract Drawings and installation requirement hereinafter specified in this Section.

1.3 SUBMITTALS

A. Submit promptly after receipt of the Owner's "Notice to Proceed."

1. A complete materials list showing all items specified to be furnished and installed under this Section.

2. Sufficient data to demonstrate that all materials meet or exceed the specified requirements, including proof of manufacturer's and installer's qualifications.

3. Specification, installation instructions and general recommendations from manufacturer showing procedures under which it is proposed that materials will be installed.

4. Upon approval by the Owner, the proposed installation procedures will become the basis for inspection and acceptance or rejection of actual installation procedures used on the work.

B. Samples: Submit separate samples for each type of caulking or sealant material, together with manufacturer's data, all as necessary to fully demonstrate functional and service ability characteristics that comply with the specified requirements. Obtain approval prior to delivery of materials to the job-site for material substitutions. Samples of the sealant in concrete construction expansion joints shall be applied between 1-inch thick concrete blocks to the full size and shape of sealant in the joints indicated. Conform to the provisions of in the GENERAL CONDITIONS of these Specifications.

1.4 GUARANTEE

A. Guarantee: The guarantee period shall hereby be extended to two (2) years. Contractor shall provide the Owner with a written guarantee against any inherent or developed defects in material or in installation and file five (5) copies of same with the Owner as a prerequisite for final acceptance of the work.

1.5 DEFECTIVE WORK

A. Work will be adjudged defective by the Owner if leakage results from failure of sealant or caulking to bond to adjacent work or if it hardens, cracks, shrinks, or runs or stains adjacent work.

B. Remove defective work, clean joints and install new caulking and/or sealant materials as approved by the Owner at no added cost to the Owner.

1.6 PRODUCT HANDLING

A. Delivery and Storage: Deliver all materials of this Section to the job-site in their original unopened or unbroken containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturer concerning shelf life, temperature humidity, ensuring the fitness of the material when installed. Do not retain on the job-site any material which has exceeded the manufacturer's recommended shelf life.

B. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect work and materials of other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner, at no added cost to the Owner.

PART 2 PRODUCTS

2.1 MATERIALS

A. Materials utilized shall be from new cartridges with shelf-life valid during installation. Do not use seconds or remnants.

1. Color shall be as follows:

   a. For joints separating two similar materials, match finish surface color.

   b. For joints separating dissimilar materials, such as perimeter joints around louvers, door frames, window frames, etc., match wall surface color, except match mortar color in face brick walls.

B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24). Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

   1. Architectural Sealants: 250 grams per liter.

   2. Sealant Primers for Nonporous Substrates: 250 grams per liter.

   3. Sealant Primers for Porous Substrates: 775 grams per liter.

C. Caulking shall be acrylic latex type caulk.

D. Sealant: Provide two (2) component rubber based compounds complying with Federal Specification TT-S-0027C. Materials shall be the product of one of the following manufacturers or equal:

   1. Sika Corp., Lynhurst NJ.

   2. Sonneborn Building Products, Minneapolis, MN.

   3. 3M Products, St. Paul, MN.

   4. Class "A" for non-traffic horizontal surfaces.

   5. Class "B" for vertical surfaces.

   6. Class "C" for foot traffic horizontal surfaces. Provide one of the following:

      a. Mameco International "Vulkem 245."

      b. Sika Corp. "Sikaflex 2C-SL."

      c. Sonneborn Building Products "Sonolastic Paving Joint Sealant."

      d. Or equal.

   7. Class "D" (acoustical sealant) for metal framed partitions to deter the passage of sound from one room to another. Acoustical sealant shall be one of the following:

      a. Ohio Sealants "Sound Caulk (solvent type)."

      b. Pecora Corp. "BA-98."

      c. Tremco "Acoustical Sealant."

d. Or equal.

E. Primer shall be as recommended by the caulking or sealant manufacturer.

2.2 BACKUP MATERIALS FOR SEALANTS

A. Primers and Bond Breakers: As recommended by the sealant manufacturer in their published instructions.

B. Backer Rods and Other Backing Materials: Type as recommended by the Sealant manufacturer.

1. Closed-cell resilient urethane or polyvinyl chloride foam;

2. Closed-cell polyethylene foam;

3. Closed-cell sponge of vinyl or rubber;

4. Polychloroprene tubes or beads;

5. Polyisobuthlene extrusion;

6. Oil-less dry jute.

C. Filler for Use with Asphalt Sealant: Asphalt impregnated, as per ASTM D 1715.

D. Filler of Use with Elastomeric Sealer: Plain type as per ASTM D 1752 Type II or Type III.

E. Surface Covers: (Where Simple bond-prevention is necessary).

1. Polyethylene Tape, pressure-sensitive adhesive, required only to hold tape to the construction material.

2. Aluminum foil conforming to MIL-SPEC-MIL-A-148E

3. Heavy wax paper conforming to Fed. Spec. UU-P-270

F. Other Materials: All other materials, not specifically described but required for complete and proper caulking and installation of sealants, shall be first quality of their respective kinds as selected by the Contractor subject to the approval of the Owner.

2.3 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 INSPECTION AND INSTRUCTIONS

A. Manufacturer's Inspection: Just prior to start of application of each type sealant, provide initial instructions at start of work in order to verify if physical conditions are proper in

order to properly instruct applicators and that supervision provided is by qualified personnel handling such materials.

B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until detrimental conditions have been corrected.

C. Contractor to notify the manufacturer at least 72 hours prior to time inspection is required.

D. Failure or refusal of manufacturer to provide inspection and supervision shall constitute grounds for non-acceptability of materials manufactured, even though specified hereinafter.

E. Applicator shall report to the Contractor any detrimental conditions impairing the proper installation of such materials.

F. Contractor shall correct all such detrimental conditions to the full satisfaction of the Owner or the Inspector at no added cost to the Owner.

3.2 WORKMANSHIP

A. Application: In accordance with manufacturer's instructions and supervised by the manufacturer's approved applicator. Manufacturer to provide field assistance to insure proper mixing of sealants, cleaning of surfaces, and application of materials.

B. Cleaning: Immediately remove caulking and/or sealant materials from adjacent surfaces not specified to received sealant, and/or caulking materials. Leave work in a condition satisfactory to the Owner.

C. Protection: Carefully protect adjoining surfaces from staining. Carefully provide necessary strippable masking where required to limit extent of caulking and sealant material application.

3.3 PREPARATION

A. Joint Cleaning: Joints shall be free of foreign materials full depth of joint. Joint surfaces to be clean, dry and free from grease, oil, wax or other foreign matter, which would tend to destroy or impair adhesion. Clean surfaces in accordance with manufacturer's instructions.

B. Priming: Joint surfaces to be primed in accordance with sealant manufacturer's instructions.

C. Steel Surfaces:

1. Steel surfaces in contact with sealant shall be sandblasted or scraped or wire-brushed to remove mill scale.

2. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

3. Remove protective coatings on steel by sandblasting or by a solvent that leaves no residue.

D. Aluminum Surfaces:

1. Surfaces in contact with sealant shall be cleaned of temporary protective coatings, dirt, oil and grease.

2. When masking tape is used as a protective cover, remove tape just prior to application of sealant.

3. Use only such solvents to remove protective coatings as recommended for that purpose by the aluminum manufacturer, and which are non-staining.

E. Concrete and Ceramic Tile Surfaces:

1. All contact surfaces shall be dry, sound, well brushed and wiped free from dust.

2. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

3. Treated surfaces shall have the surface treatment removed by sandblasting or wire brushing.

4. Remove all laitance and mortar from the joint cavity.

5. Where backstop is required, insert an approved backup material into the joint cavity to required depth.

3.4 INSTALLATION OF BACKUP MATERIAL

A. Use only the backup materials recommended by the Sealant manufacturer and approved by the Owner for the particular installation, compressing the backup material 25% to 50% to secure a positive and secure fit. When using backup of tube or rod stock, avoid lengthwise stretching of material. Do not twist or braid hose or rod backup stock.

1. Sealant bite 1/8" to 1/2" but never more than 1/2 to 1/4 of joint width.

2. Use foam backup rod or bond breaker tape to minimize joint configuration.

3.5 PRIMING

A. Use only the primer recommended by the Sealant Manufacturer and approved by the Owner for the particular installation. Apply primer in accordance with the manufacturer's recommendations as approved by the Owner.

3.6 SCHEDULE

A. Elastomeric Caulking Joint Compound: Use in expansion and contraction joints where limited movement is anticipated and areas where general caulking is required.

B. Multi-Part Sealant: Use in expansion and construction joints and all joints in all concrete walking surfaces where indicated or noted on the Contract Drawings and/or specified in the Specifications.

3.7 INSTALLATION SEALANTS

A. General: Prior to start of installation in each joint, verify the joint type according to Contract Drawing Details and that the required proportion of width to depth of joint has been secured.

B. Equipment: Apply sealants under pressure with hand or power actuated gun or other appropriate means. Guns shall have nozzle of proper size and shall provide sufficient pressure to completely fill joints as designed.

C. Application:

1. Caulking performed under other Sections of these Specifications shall comply with all of the following requirements unless specific changes are specified in those other Specification Sections.

2. Fill all joints where no backing exists partially with filler material (that is compatible with specified caulking or sealant material).

   a. Metal to Metal Joints: Minimum joint width of 1/4-inch.

   b. All Other Joints: Maximum 3/4-inch, unless otherwise detailed.

   c. Minimum joint depth shall be 1/4-inch, for metal joints; 1/2-inch for concrete, masonry, and plaster work joints.

3. Apply sealants under sufficient pressure to completely fill all voids.

4. Apply non-sagging type sealants in vertical joints.

5. Apply self-leveling type sealants in horizontal joints.

6. Apply non-tracking sealants, having a shore hardness range of 40 to 55, to concrete, masonry or tile expansion joints, subject to foot or vehicular traffic.

7. Finish all exposed joints smooth, flush with surfaces, or recessed as shown.

8. Provide strippable masking for factory applied sealing materials to prevent dirt contamination until parts are assembled.

9. Tool all joints to the profile shown on the Contract Drawing Details.

10. Caulk and seal open joints left between openings and both sides of frames on the exterior of building and all other joints between building units or materials where Contract Drawings call for caulking and/or sealants, interior and exterior or where necessary to completely seal off joints against passage of water, air or dust.

D. Cleaning Up:

1. Remove masking tape immediately after joints have been tooled.

2. Clean adjacent surfaces free from sealants as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

3. Remove excess caulking and sealants from adjacent surfaces of joints, leaving the work in a neat and clean condition.

E. Concrete Expansion and/or Contraction Joints: Construct such joints as indicated on the Contract Drawings and specified in Division 3 - CONCRETE, and Division 4 - Masonry.

-- End of Section --

SECTION 08110

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
2. Division 08 Section "Flush Wood Doors".
3. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
4. Division 08 Section "Door Hardware".
5. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.

1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.

    a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:

1. CECO Door Products (C).
2. Curries Company (CU).
3. Pioneer Industries (PI).
4. Steelcraft (S).

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Thermal Break Frames: Subject to the same compliance standards and requirements as standard hollow metal frames. Tested for thermal performance in accordance with NFRC 102, and resistance to air infiltration in accordance with NFRC 400. Where indicated provide thermally broken frame profiles available for use in both masonry and drywall construction. Fabricate with 1/16" positive thermal break and integral vinyl weatherstripping.

C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.

1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
3. Manufacturers Basis of Design:

   a. Curries Company (CU) - M Series.

D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.5 LOUVERS

A. Metal Louvers: Door manufacturer's standard metal louvers unless otherwise indicated.

1. Blade Type: Vision proof inverted V or inverted Y.
2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

B. Louvers for Fire Rated Doors: Metal louvers with fusible link and closing device, listed and labeled for use in doors with fire protection rating of 1-1/2 hours and less.

1. Manufacturers: Subject to compliance with requirements, provide door manufacturers standard louver to meet rating indicated.
2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

2.6 LIGHT OPENINGS AND GLAZING

A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.

B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.

C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.

D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.7 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.8 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:

1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.

3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:

1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

    a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
9. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.
        4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

    b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

1) Three anchors per jamb up to 60 inches high.
2) Four anchors per jamb from 60 to 90 inches high.
3) Five anchors per jamb from 90 to 96 inches high.
4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.

10. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".

E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.9 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

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

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.

1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

   a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
   b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
   c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
   d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 08110

SECTION 08207

PLASTIC LAMINATE FACED SOLID CORE DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install plastic laminate faced solid core doors as indicated on the drawings and specified.

B. Material selection:

1. Select materials that have the highest possible recycled content while still meeting performance criteria.

2. Select materials from local manufacturers wherever possible.

1.2 SUBMITTALS

A. Submit materials list of items proposed to be provided.

B. Submit specifications and other data needed to prove compliance with the specified requirements;

C. Submit samples, approximately 8" x 8" in size, of each of the proposed laminated plastic door face materials.

1.3 QUALITY ASSURANCE

A. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with:

1. "Manual of Millwork" of the Woodwork Institute of California, for the grade or grades specified; or

2. "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute, for the grade specified.

3. Certification and stamps will not be required.

B. Warranty: Submit written warranty in approved form, that all defective materials and workmanship reported written a period of 5 years after final acceptance will be promptly repaired or replaced.

1.4 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver doors to job-site after plaster and paint are dry, and after the building has reached average prevailing relative humidity for its locality.

2. Deliver doors in manufacturer's original containers, clearly marked with manufacturer's name, brand name, size, thickness, and identifying symbol on its cover.

B. Storage:

1. Stack doors flat on 2" x 4" lumber, laid 12" from ends and across center.

2. Under bottom door and over top of stack, provide plywood or corrugated cardboard to protect door surfaces.

3. Store doors in area where there will be no great variations in heat, dryness, and humidity.

C. Handling: Lift doors and carry them into position. Do not drag doors across one another.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the specified requirements, plastic laminate faced doors shall be the product of one of the following (or equal):

1. General Veneer Co.

2. Weyerhauser

3. Curtis Door Division of Georgia-Pacific

4. V. T. Industries

5. Permaclad

2.2 PLASTIC LAMINATE FACED DOORS

A. Solid Core Doors: Kiln-dried, low-density, 2-1/2" wide, random length wood blocks, edge-glued with joints well staggered or particle board conforming to CS 236, Type I, Density C, Class 1.

B. Cross Bands: 1/16" kiln-dried hardwood, full width of door, with grain perpendicular to face grain.

C. Stiles: Solid wood 1-1/2" x 1-1/2" minimum at 20 minute doors.

D. Glue: Use CS35 Type II for bonding core blocks; use Type I (fully waterproof) for all other work.

E. Facing: 0.050" thick high pressure plastic laminate, product of Formica, Laminart, Nevamar, Wilsonart, Micarta, or equal, color and pattern as selected by Owner. Finish stiles to match faces.

F. Tops and Bottoms of Doors: Provide a positive sealer applied after completion of machining and fitting.

G. On Both Vertical Edges of Doors: Provide matching laminate plastic or when specifically approved in advance in writing by the Architect, provide prefinished hardwood.

2.3 FACTORY PREFITTING AND PREMATCHING

A. Prefitting: All doors shall be factory prefitted to the scheduled frame opening size as follows:

1. To 1/8" clearance.

2. Width: 1/4" (1/8" clearance at lock side: 1/8" clearance at hinge side)

3. Bottom: 3/8" or as detailed to scheduled threshold or finished floor.

4. Lock edges shall be beveled 1/8" in 2".

2.4 CUTOUTS

A. Openings for Louvers and Glass where indicated: Fully frame cutouts in core prior to applying face veneers. Locate as indicated, but not closer than 5" from any edge. Provide stops and moldings to match faces as closely as possible; permanently attach to one side only.

1. At fire-rated doors, provide steel frames painted to match door facing as closely as possible.

2.5 FIRE-RATED DOORS

A. Core material shall be as standard with the manufacturer as approved by UL for the fire rating indicated.

B. Cross-Bands, Edge-Bands and Face Veneers: As specified for solid core doors.

C. Construction and Labels: Construct doors to meet U.L. requirements for the fire-rating label required. Affix UL label.

PART 3 EXECUTION

3.1 PREPARATION FOR SHIPMENT

A. Individually wrap each door and package doors in individual cardboard cartons and protect as required to insure delivery to the job-site.

3.2 SURFACE CONDITIONS

A. Examine the areas and conditions at the job-site under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until detrimental conditions are corrected.

3.3 INSTALLATION

A. Fitting and Machining Laminated Plastic Faced Doors:

1. Using measurements obtained in the field from installed frames, machine the doors at the factory to fit the prescribed frames with proper clearance at top, bottom, and vertical edges.

2. Replace or rehang doors which are hinge bound and do not swing or operate freely.

B. Finish Hardware:

1. Receive and retain custody of finish hardware furnished under Section 08710 of these Specifications for the work of this Section.

2. Install finish hardware in accordance with its manufacturers' recommendations.

3.4 ADJUST AND CLEAN

A. Upon completion of the installation, inspect each component.

1. Verify that each item has been fabricated and installed in accordance with the specified requirements.

2. Make necessary adjustments.

3. Touchup as necessary to make surface blemishes permanently invisible to the unaided eye from a distance of five-feet.

3.5 COMPLIANCE

A. The Owner reserves the right to request and pay for an inspection by a representative of WIC to determine that the work of this Section has been performed in accordance with the specified requirements.

B. In the event such inspection determines the work of this Section does not comply with the specified WIC requirements, immediately remove the non-complying items and immediately replace them with items complying with the specified requirements, all at no additional cost to the Owner, and reimburse the Owner for the cost of the inspection.

-- End of Section --

SECTION 08305

ACCESS PANELS

PART 1 GENERAL

1.1 SUMMARY

A. All materials, tools, equipment, supplies and all labor required to fabricate and install access panels and frames indicated on the Contract Drawings and in these Specifications.

1.2 QUALITY ASSURANCE

A. Qualifications of Manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Owner.

B. Qualifications of Installer: Use adequate numbers of skilled installers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

C. Single Source: All work of this Section shall be produced by a single manufacturer unless otherwise approved by the Owner.

D. Fire-Resistance Ratings: Wherever a fire-resistance classification is indicated, provide access panel assembly with panel door, frame, hinge, and latch from manufacturer listed in Underwriters Laboratories, Inc.'s "Building Materials Directory" for rating indicated on the Drawings. Provide UL label on each fire-rated access panel.

1.3 SUBMITTAL

A. Submit the following:

1. Product data in form of manufacturer's technical data and installation instructions for each type of access panel assembly, including setting drawings, templates, instructions, and directions for installation of anchorage, devices.

2. Shop drawings showing fabrication and installation of customized access panels and frames, including details of each frame type, elevations of panel design types, anchorage and accessory items.

PART 2 PRODUCTS

2.1 ACCESS PANELS

A. Manufacturers: Subject to compliance with specified requirements, provide access panels by one of the following (or equal):

1. Karp Associates, Inc.
2. Milcor, Inc.
3. Nystrom, Inc.

B. Standard: The design was based on Nystrom Fire Rated Access Panels, or equal, to establish a standard of quality. Equal products of the aforementioned manufacturers will also be acceptable. Provide the following Nystrom models, or equal:

1. Fire Rated Wall Access Panel:

   a. Model: APFR-WP
   b. Size: 36 x 36 Nominal Dimensions.

2. Fire Rated Ceiling Access Panel:

   a. Model: APFR-WP
   b. Size: 24 x 24 Nominal Dimensions.

3. Non-Rated Ceiling Access Panel:

   a. Model: APWB-RD
   b. Size: 24" x 24" Nominal Dimensions.

C. Construction:

1. High quality commercial grade cold rolled steel with 16 gauge frame and 20 gauge panel.

2. Finish shall be phosphate dipped with a factory applied baked-on rust inhibitive gray prime finish. Field finish paint to match adjacent surfaces (See Section 09900).

3. Hinge: Concealed Pin Hinge.

4. Provide continuous spring closer.

5. Latch and Lock: Ball bearing cylinder lock operated by a recessed turn ring or flush key which allows surface covering to be applied over face of panel without obstruction. All panels shall have an interior latch release mechanism allowing panels to be unlocked from the inside.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install access panels where indicated on the Contract Drawings, and in accordance with manufacturer's installation recommendations and all applicable building codes.

B. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.

-- End of Section --

SECTION 08412

ALUMINUM STOREFRONT AND WINDOWS SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish and install Aluminum Storefront Windows as indicated on the drawings and specified.

1.2 SUBMITTALS

A. Submit the following:

1. Shop Drawings: Submit all work of this Section, prepared and approved prior to fabrication. Indicate complete details for all materials, finishes, sizes, profiles, moldings, dimensioned locations of hardware items with reinforcement, methods of anchoring, assembly, erection, isolation, glazing procedure as well as reglazing procedures, and sealants.

2. Include structural calculations indicating that materials proposed for use conform to deflection requirements specified.

3. Samples and Product Data:

a. Window frame sections with specified finish, fasteners and accessories.

b. Cured sealant colors.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: For installation of the storefront windows engage an experienced Installer who is an authorized representative of the manufacturer for both the installation and maintenance of the type of units required for this Project.

1.4 JOB CONDITIONS

A. Verify field measurements pertaining to this Section and report all detrimental differences between Drawings and field dimensions to the Owner before fabricating work of this Section. Protect work of this Section until completion and final acceptance.

B. Repair or replace damaged or defective work to original specified condition at no additional cost to the Owner. Damaged or defective work includes surfaces which cannot be acceptably cleaned or repaired.

1.5 WARRANTIES

A. Warranty aluminum windows for 5 years. Warranty shall agree to repair or replace defective materials and workmanship of windows during the entire warranty period. Defective window frames materials and workmanship include abnormal deterioration, aging or weathering of the work, leakage of water or air exceeding specified limits, structural failure of any components resulting from exposure to pressures and forced up to specified limits, failure of operating parts to function normally, deterioration or discoloration of finishes in excess of allowable limits, glass breakage and secondary

glass damage or breakage due to falling glass fragments, failure of sealants, and failure of windows to fulfill other specified performance requirements.

B. The warranty does not include damage caused by vandalism or to natural conditions exceeding the performance requirements. However, the warranty does include failures or defects for which the cause cannot be determined. This warranty and its enforcement shall not deprive the Owner of other action, right, or remedy available to the Owner.

PART 2 PRODUCTS

2.1 ALUMINUM STORE FRONT AND WINDOW SYSTEM

A. Manufacturers: Subject to compliance with specified requirements, provide Arcadia framing systems as noted on the Drawings, or an "or equal" product of one of the following:

1. Kawneer Company Inc.

2. US Aluminum.

B. Extrusions shall 6063-T5 alloy and temper (ASTM B221 alloy G.S. IDA-T5). Fasteners, where exposed, shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A164. Perimeter anchors shall be aluminum or galvanized steel, providing steel is properly isolated from the aluminum.

1. Major portions of sections, except glazing beads, shall be not less than nominal 0.125 inch.

2. Wall thickness of window frame members shall be not less than nominal 0.093 inch.

3. Provide square snap-in glazing stops for 1" thick glass.

C. Provide light shelves, vertical shading fins, break metal trim, and other custom extrusions as shown on the drawings. Provide shop drawings with calculations by a California licensed structural engineer to demonstrate compliance of designed extrusions with applicable codes.

D. Glass and Glazing Materials: Provide preglazing at the place of manufacture using the materials indicated on the drawings and in accordance with the specifications for glazing in Section 08800.

1. Glazing gaskets shall be EPDM elastomeric extrusions or vinyl reinforced with fiberglass cord to prevent stretching.

2. Provide glazing accessories as needed to ensure completeness of the installation, including glazing points, clips, shims, angles, beads, setting blocks, and spacer strips.

2.2 FINISHES

A. Exposed aluminum surfaces shall be factory finished with a baked-on, Duranar 2-coat, 70% Kynar 500, resin based paint coating, compliant with AAMA 2605, with color as indicated on the drawings. All storefront and curtain wall framing and all break metals shall receive the same type of finish, in the color indicated on the drawings.

2.3 FABRICATION

A. The framing system shall provide continuous head and sill channels spliced together with formed brake metal sleeves at center of vertical mullions.

B. The framing system shall provide for flush glazing on all sides with no projecting stops.

C. Vertical and horizontal framing members shall have a nominal face dimension and overall depth shall be as noted above, or as noted on the drawings.

PART 3 EXECUTION

3.1 INSTALLATION

A. All glass framing shall be set in correct locations as indicated in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings.

B. All joints between framing and the building structure shall be sealed watertight.

3.2 PROTECTION AND CLEANING

A. The Contractor shall protect exposed portions of aluminum surfaces from damage due to exposure to polishing compounds, plaster, lime, acid, cement, or other contaminants. The Contractor shall be responsible for final cleaning immediately before the date scheduled for substantial completion.

3.3 FINISHED SYSTEM REQUIREMENTS

A. Aluminum storefront windows will be rejected for any of the following deficiencies:

1. Finish of aluminum having an appearance that is outside the color and appearance range of the approved samples.

2. Installed aluminum components having stained, discolored, abraded, or otherwise damaged exposed-to-view surfaces that cannot be cleaned or repaired.

-- End of Section --

SECTION 08710

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 01 Section "Cash Allowances".
2. Division 01 Section "Product Allowances".
3. Division 08 Section "Door Hardware Schedule".
4. Division 08 Section "Hollow Metal Doors and Frames".
5. Division 08 Section "Flush Wood Doors".

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. 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. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

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.

C. 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.

D. 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.

E. 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 Submittals.

1.4 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. 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.

C. 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.

D. 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.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. 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.

G. 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.

1. 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

H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

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".

1.6 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 pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

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.

1.8 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 certified 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: 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. Cam Lift Hinges: Where specified provide hinges that move the door up and then lower it to create a tight seal when the door is closed.

6. Manufacturers:

    a. Bommer Industries (BO).
    b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).

B. Pivots: ANSI/BHMA A156.4, Grade 1, certified. Space intermediate pivots equally not less than 25 inches on center apart or not more than 35 inches on center for doors over 121 inches high. Pivot hinges to have oil impregnated bronze bearing in the top pivot and a radial roller and thrust bearing in the bottom pivot with the bottom pivot designed to carry the full weight of the door. Pivots to be UL listed for windstorm where applicable.

1. Manufacturers:

    a. Architectural Builders Hardware (AH).
    b. Rixson Door Controls (RF).

2.3 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Manufacturers:

    a. Burns Manufacturing (BU).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

    a. Burns Manufacturing (BU).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

C. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls 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. Burns Manufacturing (BU).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

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. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. 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.
5. Keyway: Match Facility Standard.

D. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

E. Permanent Cores: Match standard. Reference Division 01 "Cash Allowances""Product Allowances" for material required under project. Installation to be included under Division 08 "Door Hardware" base bid package.

1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

2. Removable Cores: Core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.

F. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "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: Key locks to Owner's existing system.

G. 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).

H. Construction Keying: Provide temporary keyed construction cores.

I. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. 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. No Substitution.

2.6 AUXILIARY LOCKS

A. Mortise Deadlocks, Large Case: ANSI/BHMA A156.13, Series 1000, Grade 1, certified large case mortise type deadlocks constructed of heavy gauge wrought corrosion resistant steel. One piece stainless steel bolts with a 1" throw. Deadlocks to be products of the same source manufacturer and keyway as other locksets.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. Sargent Manufacturing (SA) - 8200 Series.

c. Yale Locks and Hardware (YA) - 8800 Series.

2.7 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.

2.8 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 including installation and adjusting information on inside of cover.

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. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. 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 physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

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. National Guard Products (NG).
2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
3. Reese Enterprises, Inc. (RE).

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.

7. 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 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 non-handed units standard.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC6000 Series.
b. Norton Door Controls (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 certified 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. Burns Manufacturing (BU).
b. Hiawatha, Inc. (HI).
c. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

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.

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. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
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: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

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 based on the plans dated 9/15/18. 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.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

Hardware Sets

Set: 1.0

Doors: 10, 4, 5, 6, 9

1	Center Hung Pivot	PK06-1010	626	OT
1	FSB Mortise Lock	Classroom function - Lever style as selected by owner	US32D	OT
1	Cylinder	to match existing key system	628	AD
1	Drop Plate	As Required	689	NO
1	Surface Closer	8501H	689	NO
1	Door Stop	446	US32D	RO
1	Gasketing	by door mfg.		
1	Angle Stop	PK07-1010	BLK	OT
1	Angle Strike	PK30 Full Mortise Strike	626	OT
1	Lock Box	PK30	626	OT

Set: 2.0

Doors: 16, 17

6	Hinge	TA2714	US26D	MK
1	Auto Flush Bolt top bolt only - Wood door	2940	US26D	RO
1	Storeroom Lock	ML2057 124T w/temp core	626	RU
1	Interchangeable Core	to match existing key system	626	RU
1	Coordinator	2600 x FB x Mtg Brkts	US28	RO
2	Surface Closer	PR8501H	689	NO
1	Astragal	357C		PE
2	Silencer	608		RO

Set: 3.0

Doors: 14, 15

3	Hinge	TA2714	US26D	MK
1	Storeroom Lock	ML2057 124T w/temp core	626	RU
1	Interchangeable Core	to match existing key system	626	RU
1	Surface Closer	PR8501H	689	NO
1	Wall Stop	409	US32D	RO
3	Silencer	608		RO

Set: 4.0

Doors: 11, 12

3	Hinge	TA2714	US26D	MK
1	Storeroom Lock	ML2057 124T w/temp core	626	RU
1	Interchangeable Core	to match existing key system	626	RU
1	Surface Closer	8501H	689	NO
1	Wall Stop	409	US32D	RO
3	Silencer	608		RO

Set: 5.0

Doors: 13

3	Hinge	TA2714	US26D	MK
1	Classroom Lock	ML2055 124T w/temp core	626	RU
1	Interchangeable Core	to match existing key system	626	RU
1	Surface Closer	PR8501H	689	NO
1	Kick Plate	K1050 10" x 2" LDW BEV CSK	US32D	RO
1	Wall Stop	409	US32D	RO
3	Silencer	608		RO

Set: 6.0

Doors: 2, 3, 8

3	Hinge	TA2714	US26D	MK
1	Privacy Lock	ML2030 124T M34 M19V	626	RU
1	Surface Closer	8501	689	NO
1	Kick Plate	K1050 10" x 2" LDW BEV CSK	US32D	RO
1	Mop Plate	K1050 6" x 1" LDW BEV CSK	US32D	RO
1	Wall Stop	409	US32D	RO
3	Silencer	608		RO
1	Coat Hook	RM802	US26D	RO

Set: 7.0

Doors: 1, 18

3 Hinge	TA2714	US26D	MK
1 Mortise Deadlock	ML2017 M34 w/temp core	626	RU
1 Push Pull Set	110x73C/73CL	US32D	RO
1 Surface Closer	8501	689	NO
1 Kick Plate	K1050 10" x 2" LDW BEV CSK	US32D	RO
1 Mop Plate	K1050 6" x 1" LDW BEV CSK	US32D	RO
1 Wall Stop	409	US32D	RO
3 Silencer	608		RO

Set: 8.0

Doors: 7

3 Hinge	TA2714	US26D	MK
1 Mortise Deadlock	ML2017 M34 w/temp core	626	RU
1 Push Pull Set	110x73C/73CL	US32D	RO
1 Surface Closer	PR8501	689	NO
1 Kick Plate	K1050 10" x 2" LDW BEV CSK	US32D	RO
1 Mop Plate	K1050 6" x 1" LDW BEV CSK	US32D	RO
1 Wall Stop	409	US32D	RO
3 Silencer	608		RO

END OF SECTION 08710

SECTION 08800

GLAZING

PART 1 GENERAL

1.1 SUMMARY

A. Provide all glass and glazing materials including all tools, equipment, supplies, accessories and all labor necessary for complete fabrication and installation of glass and glazing as shown on the Contract Drawings and herein specified.

1.2 DEFINITIONS

A. U-Factor (Thermal Transmittance): Heat transmission in unit time through unit area of a material or construction and the boundary of air films, induced by unit temperature difference between the environments on each side. It is measured in Btu/h sq. ft. deg. F.

B. SHGC (Solar Heat Gain Coefficient): The ratio of the solar heat gain entering the space through the fenestration area to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation, which is then reradiated, conducted or convected into the space.

C. Shading Coefficient (SC): The ratio of the solar heat gain at nominal incidence through glazing t that occurring through 1/8" thick clear, double-strength glass. Shading coefficient, as used herein, does not include interior, exterior or integral shading devices.

D. Visible Transmittance (T_{vis}): Percentage of light energy transmitted by given glazing.

E. Solar Reflectance: Percentage of light or solar energy that a given glazing reflects to the outside.

F. Tinted Glass: Controls the amount of sunlight admitted.

G. Spectrally Selective Coating: Controls the type of radiation (i.e. short wave or visible light, long wave or heat) admitted and blocked from outside and inside).

1.3 QUALITY ASSURANCE

A. Reference Specifications and Standards:

1. ASTM C-1036 for flat glass

2. ASTM C-1048 for tempered glass

3. Glazing Manual for Flat Glass Marketing Association for flat glass DD-G-451

a. Glazing Sealing Systems Manual

b. Glazing Manual

4. Underwriters' Laboratory Inc. (UL)

B. Labeling: Label each piece of glass and glazing and mirrors with manufacturer's name, and the grade of quality of the material. Labels shall be intact before and after installation.

C. Qualification of Installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for the proper performance.

D. Codes and Regulations: Perform work of this Section in accordance with all applicable County, Federal and State Codes and Regulations.

1. Comply with Federal Standard 16 CFR 1201, Federal Safety Standard for Architectural Glazing Materials.

2. Comply with pertinent recommendations of the Flat Glass Marketing Association.

E. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers or at least one component pane of units with appropriate certification label of inspecting and testing organization indicated below:

a. Insulating Glass Certification Council (IGCC).

b. Associated Laboratories, Inc. (ALI).

1.4 SUBMITTALS

A. Material List: Submit a listing of each glazing material proposed for use, fire ratings, sealants, and location in Project to the Owner for review prior to installation.

B. Manufacturer's Data: Submit the manufacturer's specifications and descriptive data, including fire rating, for all material proposed for use. Include the MSDS.

C. Product Data for LEED Credit EQ 4.1, Low Emitting Materials – Adhesives and Sealants: For products applied to the interior of the building envelope, provide MSDS sheets or manufacturer's product information that confirms the VOCs of each product in grams per Liter or g/L

D. Samples: Submit to the Owner when so requested 4-inch x 4-inch samples of the various types of glass, noting name of manufacturer, color of sealants, grade, quality and thickness and setting materials for review and approval prior to installation.

E. Labeling: Required on each lite showing quality, thickness and type, and manufacturer's name, which shall remain on glass until final cleaning and acceptance.

F. Manufacturer's recommended installation procedures which when approved by the Owner, will become the basis for accepting or rejecting actual installation procedures used on the Work.

G. Test Reports: Certified test reports for all glazing assemblies, including exterior windows and storefronts, showing compliance with specified performance characteristics and physical properties.

1. Tests report for U-factor determined in accordance with NFRC 100 from a laboratory accredited by the National Fenestration Rating Council.

2. Tests report for Solar Heat Gain Coefficient determined in accordance with NFRC 200 from a laboratory accredited by the National Fenestration Rating Council.

H. Certificates:

1. Certification of compliance with performance requirements.

2. NFRC Label: All exterior glazing assemblies, including exterior windows and storefronts, must have a National Fenestration Rating Council (NFRC) label. Label shall indicate the U-factor of the assembly. The Solar Heat Gain Coefficient (SHGC), the Visible Transmittance (VT or T_{vis}) and the air leakage.

3. Certification from Sealed Insulating Glass Manufacturer's Association (SIGMA).

4. Submit written warranty for hermetically sealed insulating glass unit, agreeing to replace units which fail to maintain hermetic seal of air space, deteriorate, or otherwise fail to perform as required within 10 years after date of Substantial Completion as a result of failure of materials or workmanship.

1.5 PRODUCT HANDLING AND STORAGE

A. Protection: Protect all glass against damage and store glass of this Section before, during and after installation and protect the work and materials of all other trades as per glass manufacturer's instructions or recommendations. During storage and handling of glass provide cushions at edges of glass to prevent impact damage.

B. Upon Completion of Construction Operations: Leave installed glass unbroken and in clean condition and maintain so until Owner's acceptance of the building.

C. Replacements: In the event of damage prior to acceptance, immediately make all repairs and replacements necessary to the approval of the Owner.

1.6 SPECIAL WARRANTY FOR INSULATING GLASS

A. Provide written warranty signed by manufacturer of insulating glass agreeing to furnish f.o.b. point of manufacture, freight allowed project site, within specified warranty period indicated below, replacements for those insulating glass units developing manufacturing defects. Manufacturing defects are defined as failure or hermetic seal of air space (beyond that due to glass breakage) as evidenced by intrusion of dirt or moisture, internal condensation or fogging, deterioration of protected internal glass coatings, if any, and other visual indications of seal failure or performance; provided the manufacturer's instructions for handling, installing, protecting and maintaining units have been complied with during the warranty period.

1. Warrant the system to be watertight and free from distortion or harmonics for a period of 10 years. Warrant coatings and thermally or acoustically rated insulation units against deterioration in acoustic or thermal rating for a period of 20 years.

PART 2 PRODUCTS

2.1 GLASS QUALITY

A. Glass shall be per ASTM C1036 and as manufactured by Pilkington, Pittsburgh Plate Glass Industries (PPG), or Libbey-Owens-Ford (LOF).

2.2 GLASS TYPES

A. General: Provide the type and thickness shown on the Contract Drawings and as specified hereinafter:

1. Plate Glass or Float Glass: Type I, Plate or Float, Flat; Class 1 - Transparent; q3 - Glazing Quality, 1/4" thick.

2. Clear Glass or Clear Sheet Glass: Type II, Sheet, Flat; Class 1 - Transparent; q6-B Quality, Double Strength except where dimensioned glass is required.

3. Tempered Glass: Clear float glass, ASTM C1048, Kind FT, Condition A, Type I, Class 1, 1/4 inch thick, unless otherwise indicated.

4. Clear Wire Glass or Polished Wire Glass: Type III, Flat; Class 1 Form 1 - Wired, Polished both sides, Mesh mi - Diamond, 1/4" thick.

5. Laminated Wire Glass: Provide 7/16-inch nominal laminated glass consisting of 1/8-inch clear chemically-strengthened glass, 0.030-inch polyvinyl butyral interlayer, 1/8-inch clear chemically-strengthened glass, plus one layer of wire glass conforming to ASTM C1036, Type II, Class 1, form 1, Quality q8, 1/4-inch thick, with diamond or square mesh. The wire glass (not laminated) shall be added separately to the factory laminated glass. Install the wire glass on the staff side of the assembly.

6. Safety Glass or Safety Sheet Glass: Two layers of Sheet glass Quality q5-A, laminated with a vinyl interlayer, 1/4" thick, PPG Industries "Duplicate Safety Glass", Libbey Owens-Ford's "Laminated Safety Glass" or equal. Laminated glass shall be translucent or tinted as the case may be, as indicated on the drawings. Tint color shall be as selected by the Architect.

2.3 INSULATED GLAZING UNITS

A. Insulated glass shall be pre-assembled sealed lite units with dehydrated space between glass units, complying with ASTM E 774 for Class CBA units. Refer to Drawings for assembly requirements and locations.

2.4 LAMINATED GLASS PRODUCTS

A. Plastic Interlayer: Glass fabricator's standard polyvinyl butyral interlayer for laminating panes of glass, with a proven record of showing no tendency to bubble, discolor, or lose physical or mechanical properties after laminating and installation, clear or colors and indicated thickness.

B. Laminated Safety Glass: Two panes of glass of equal thickness, laminated together with plastic interlayer at least 0.030-inch thick, and complying with UBC standard 24-2, Part I (ANSI Standard Z97.1, Safety Glazing Test). Plastic interlayer shall be clear or translucent white per drawings.

2.5 GLAZING MATERIALS

A. Setting Blocks: Neoprene, Shore A durometer hardness of 80-90. Each block not less than 3-inches long or thickness as required, locate in bottom frame member to assure glass penetrates frame maximum 3/8-inch.

B. Spacer: Neoprene, Shore A durometer hardness of 80-90. Each spacer not less than 3-inches long or thickness as required:

C. Glazing Compound: Use Silicone rubber for all sealing.

D. Wood or Metal Sash Putty: Standard brands, light colored, permanently elastic, non-staining, equal to best grades manufactured by H.R. Hunt Putty Mfg. Co., Los Angeles, California, delivered in manufacturer's original unopened labeled containers.

2.6 GLAZING SEALANT

A. General Electric, Dow Corning #795 Structural Silicone Adhesive & Weatherseal, or equal, meeting or exceeding Federal Specifications TT-S-01543A (COM-NBS) Class A, and ASTM C 920 Type S, Grade NS, Class 40, Use T, NT, M, G, A, or O.

1. Joint Movement Capability: Plus or minus 50 percent.

2. Recovery: 100 percent.

3. UV Resistance: Excellent.

4. Weathering Resistance: Excellent.

5. Life Expectancy: 30+ years.

6. Service Temperature Range: -65oF to +250oF.

7. Tack free Time @ +77oF for 3 Hours.

8. Adhesion: Excellent.

9. Primer: As recommended by the Manufacturer.

10 Color: Provide a custom color, as selected by the Owner.

B. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Owner.

2.7 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 GENERAL

A. Workmanship: Best standard practice as per recommendations of the Flat Glass Jobbers Association "Glazing Manual".

B. Inspection: Examine the areas and conditions under which work of this Section will be installed.

1. Correct conditions detrimental to the proper and timely installation of the work of this Section. Do not proceed until the detrimental conditions have been corrected.

C. Preparation: Compute actual glass size for each opening by field measurements. Allow for edge clearance and required grip.

1. Clean glass and glazing surfaces prior to installing in framing; remove dust, oil and contaminants and wipe dry making free from obstructions and deleterious substances which might impair the work.

2. Comply with manufacturer's instructions for final wiping of surfaces immediately prior to application of primer and glazing compounds or tapes. Prime surfaces to receive glazing compounds in accordance with manufacturer's recommendations.

3.2 INSTALLATION

A. Inspection: Inspect each piece of glass immediately prior to start of installation.

1. Do not install items which are improperly sized, have damaged edges or are scratched, abraded or damaged in any other manner.

2. Do not remove labels from glass until so directed by the Owner.

3. Install glass so distortion waves, if present, run in the horizontal direction.

B. General Glass Setting:

1. Tight and True, with equal bearing along the edges in a manner which produces the greatest possible degree uniformity in appearance.

2. With metal stops or glazing beads where indicated on the Contract Drawings; stops and beads neatly mitered at corners and secured with oval-head screws or bolts as suitable.

3. Do not use two different glazing materials in the same joint system unless the joint used is approved in advance by the Owner.

4. Mask or otherwise protect surfaces adjacent to installation of sealants.

5. Secure in stationary glass window openings with vinyl gaskets, resilient clips, snap-on beads, and other glazing devices; in accordance with the directions of the glass manufacturer.

6. Immediately after glazing, a white 'x' shall be painted on glass or each light.

7. Check glass surfaces and edges for damage before glazing; do not install glass having broken or chipped edges; never slide one light over another.

8. There shall be no metal to glass contact, except as otherwise detailed.

9. Set exterior glass on neoprene glazing blocks; maintain proper clearances.

10. Begin glazing in concrete openings only after any surface treatments such as grouting, and waterproofing have been completed.

11. Bed glass in wood doors, not otherwise specified or detailed in putty and secure with wood stops with tamperproof screws as indicated on the Contract Drawings.

12. For Tempered Float Glass: Locate tong marks concealed as much as possible at top and bottom rails of doors or windows.

13. For Heavy Glass Panels: Support bottom edges on lead blocks at quarter points and side and top edges with neoprene or plastic setting blocks at quarter points.

14. Glass Replacement: Prior to replacing glass panes in existing exterior wood or metal windows, properly clean all glazing rebates of old glazing materials and make ready to receive new application of glazing points or sprigs spaced not more than 24-inches on center around the perimeter of the frame. Where light edge is 12-inches or less, provide one point or sprig centered.

15. Miter-cut and seal the joints of glazing gaskets in accordance with the manufacturer's recommendations, to provide watertight and airtight seal at corners and other locations when joints are required.

C. Cleaning, Polishing and Repairing:

1. Remove excess glazing compound from all surfaces. Remove labels from glass surfaces.

2. Wash and polish all glass upon completion of the Project. Clean glass with methods and materials as recommended by the glass manufacturer.

3. Remove and replace, scratched, chipped, or otherwise defective glass and replace with proven materials and workmanship, at no added cost to the Owner.

4. Trim putty to required straight, true lines; trimmings removed.

D. Protection: Protect glass from breakage or scratches after installation by promptly installing streamers or ribbons suitably attached to the framing and held free from glass. Do not apply warning markings, streamers, ribbons or other items directly to the glass except as specifically directed by the Owner. Upon completion of construction operations, leave the glass unbroken and unscratched, and in sound condition and maintain so until acceptance of the Contracted Work.

-- End of Section --

SECTION 09100

METAL SUPPORT ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install metal support systems as indicated on the drawings and specified.

B. Related Sections: Coordinate metal support work with the work specified in the following sections.

1. Section 05410: Cold Formed Metal Stud System.
2. Section 09260: Gypsum Board Systems.

1.2 SYSTEM DESCRIPTION

A. Regulatory Requirements: Comply with CBC requirements.

B. Design Requirements:

1. Metal Studs: Studs for interior partitions shall be roll-formed channel or C-shapes.

2. Track: Stud track for floor and ceiling anchorage shall be channel configuration, sized to fit studs. Galvanized steel as manufactured for installation with specified metal studs.

3. Design: Design is based on minimum 5 pounds per square foot load applied perpendicular to walls. Deflection shall not exceed 1/240 under design load.

1.3 SUBMITTALS

A. Shop Drawings: Submit drawings showing framing, connection details, accessories and anchorage. Indicate location of assemblies and size and spacing of framing components.

B. Product Data: Submit manufacturer's catalog data for each item proposed for installation.

C. Certificates: Furnish manufacturer's certification that materials meet or exceed Specification requirements.

1.4 QUALITY ASSURANCE

A. Coordinate with related Work to provide blocking for items mounted on finished surfaces and to provide allowances for pipes and other items inside partitions and walls.

B. Comply with following as a minimum requirement:

1. American Welding Society (AWS): Structural Welding Code Steel (D1.1); and Structural Welding Code Sheet Steel (D1.3).

2. ASTM Standards:

a. ASTM A 653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

b. ASTM A 1008 – Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low-Alloy with Improved Formability.

c. ASTM A 641 – Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire.

d. ASTM C 645 – Standard Specification for Non-Structural Steel Framing Members.

e. ASTM C 955 – Standard Specification for Load Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging, for Screw Application of Gypsum Panel Products and Metal Plaster Bases.

f. ASTM C 954 – Standard Specification for Steel Drill Screws for Application of Gypsum Panel Products or Metal Bases to Steel Studs From 0.033 Inch to 0.112 Inch in Thickness.

g. ASTM E 1190 – Standard Test Methods for Strength of Power-Actuated Fasteners Installed in Structural Members.

C. Tolerances: Install walls and partitions on straight lines, plumb, free of twists or other defects, and contacting a 10 foot straightedge for its entire length at any location within a 1/8 inch tolerance. Install horizontal framing level within a tolerance of 1/8 inch in 12 feet in any direction.

1.5 DELIVERY, STORAGE AND HANDLING

A. All materials shall be delivered in their original unopened packages and stored protected from damage. Do not store material directly on grade. Provide adequate support to prevent bowing of material prior to installation.

B. Store welding electrodes in accordance with AWS D12.1.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide products manufactured by one of following:

1. Dale/Incor.
2. Dietrich Industries, Inc.
3. Marino/Wade.
4. Camco
5. Current members of Steel Stud Manufacturers Association (SSMA).

2.2 MATERIALS

A. Light Gage Metal Framing:

1. Metal framing shall be formed from corrosion resistant-steel conforming to requirements of ASTM A653, 33 ksi minimum.

2. Metal framing shall be zinc coated in conformance to requirements of ASTM A926, G60.

3. Metal framing shall be manufactured in conformance to ASTM C645.

4. Install metal framing according to ASTM C1007, Standard Specification for Installation of Load-Bearing (Transverse and Axial) Steel Studs and Related Accessories.

B. Studs: SSMA, ICBO ER-4943P, minimum yield 33 ksi, hot-dipped galvanized or electro galvanized sheet steel, G-60, C Stud type, punched web (except tracks and joists), C-shaped, sizes required to conform to details and scheduled wall thicknesses. Studs shall be rolled from new steel sheet and shall not be produced from re-rolled steel. Stud flanges shall not be less than 1-5/16 inch wide; track flanges, not less than 1-1/4 inch wide.

1. Wall Framing and Furring for Gypsum Wallboard: Studs and tracks shall be 20 gage minimum, unless otherwise indicated.

2. Load-Bearing Studs: Studs and members thicker than 18 gage (0.0438 inch) shall conform to requirements of Section 05410, Cold Formed Metal Stud System.

3. Stud gages indicated on Drawings or specified are the minimum. Where required stud height and/or loads exceed code requirements or manufacturer's recommendations, provide heavier gage studs and/or decrease stud spacing as necessary to conform to code requirements.

C. Suspended and Furred Ceiling Systems and Wall Furring: Suspended ceiling framing system shall support finished ceiling, light fixtures, air diffusers, and accessories, as required. Suspension system shall provide a maximum deflection of L/240. Carrying channels shall be fabricated from minimum 0.0548 inch thick cold-rolled steel, 1-1/2 inch wide x 7/16 inch deep. Carrying channels for supports under ducts shall be 2 inches in size as specified. Carrying channels shall be fabricated from hot-dip galvanized coated sheet.

1. Plaster Ceilings: Cross furring members shall conform to ASTM C 645, and shall be fabricated from cold-rolled steel, 3/4 inch wide x 7/16 inch deep. Furring members shall be fabricated from hot-dip galvanized coated sheet.

2. Gypsum Wallboard Ceilings: Furring members shall be fabricated from cold-rolled steel, 7/8 inch x 2-9/16 inches. Furring members shall be fabricated from hot-dip galvanized coated sheet.

D. Framed Ceilings: Framed ceiling framing system shall support finished ceiling, light fixtures, air diffusers, and accessories, as required. suspension system shall provide a maximum deflection of L/240.

1. Plaster and Gypsum Wallboard Ceilings: Ceiling joists shall conform to ASTM C 645, hot-dip galvanized coated steel, C-shaped, unpunched, 20 gage minimum thickness, unless noted otherwise.

E. Shaft Wall Framing Members: CH studs and J runners, 20 gage minimum for 2, 4 or 6 inch studs, conforming to ASTM 645, fabricated of steel conforming to ASTM A 653, hot-dip galvanized.

F. Framing Accessories: Provide all standard related accessories including floor and ceiling tracks, clips, web stiffeners, anchors, and similar items, of same manufacture as each type of stud specified, and as required for a complete installation.

1. Fire Rated Top Tracks: Conform to requirements of Section 09110, Top Track Fire-Rated System.

G. Splay Wires and Compression Struts: Approved manufacturers acceptable to manufacturer of ceiling grids, gages and types as required by building codes for ceiling types and weights specified.

H. Wires: Soft-annealed galvanized steel wire, 8 gage for hanger wires and 16 gage for framing unless otherwise specified.

I. Fasteners: Wafer-head screws, self-drilling type for 20 gage metal and heavier. ASTM C954 self-drilling, self-tapping screws, Type S-12 pan head, 1/2 inch long.

J. Fire Rated Acoustical Foam Tape: Compressible, closed cell polyvinyl chloride foam with pressure sensitive adhesive, in rolls with protective release liner on non-adhesive face, 6 pounds per cubic foot density, 1 inch wide x not less than 1/4 inch thick, self-extinguishing, UL 94 recognized, Norseal V740FR, manufactured by Norton Performance Plastics Corporation, or equal.

K. Acoustical Sealant: Permanently resilient type, non-hardening, manufactured by USG, Gold Bond, or equal.

L. Zinc-Rich Paint: Conform to Fed Spec DOD-P-21035A, Z.R.C. "Cold Galvanizing Compound", manufactured by ZRC Products Company. Provide for touch-up of galvanized surfaces.

M. Steel Backing Plates: Provide a minimum 4 inch wide by I6 gage steel, or sections of studs and stud track welded or fastened to web of studs, except as otherwise indicated. Apply shop coat of metal primer.

N. Anchorage Devices Powder Actuated: Minimum 0.177 inch diameter by 1-7/16 inch long fasteners in regular concrete and 0.145 inch diameter by 1-1/8 inch long fasteners in lightweight concrete. Allowable shear and tension values as permitted in ICBO Report No. 2388, 1639 or 1147, reduced to 80 percent.

O. Anchorage Devices, Drilled Expansion Anchors: Minimum 3/8 inch diameter with 2-1/4 inch embedment. Allowable shear and tension values as permitted in ICBO Report No. 1372, 2895 or 4627, reduced to 80 percent.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that overhead or concealed Work is completed, tested, inspected, and finished as required before starting Work of this section.

3.2 INSTALLATION

A. Walls and Partitions:

1. Fasten floor runners for exterior walls and interior partitions to concrete slab with required power driven fasteners. Spacing of fasteners not to exceed 24 inches on center.

2. Sound insulated walls and partitions: Embed floor runner tracks in two beads of acoustical sealant or two runs of compressible tape seal. Install top track nested into slotted track system, in same manner for full height of walls. Where wall ends abutting concrete, masonry, or steel set end studs in two beads of acoustical sealant or two tape seals and secure at 4-foot centers vertically.

3. Space studs not over 16 inch on center unless indicated otherwise. Studs shall be located approximately 2 inches from door frame jambs, abutting partitions and partition corners, except those providing support for door and window openings.

4. Furnish and install manufacturer's standard floor track. Fasten track to floor by means of 1/4 inch x 1-1/4 inch Star "Dryvin" hammer drive anchors or 3/16 inch x 1 inch round head, "Rawl-Drives" one-piece expansion bolts spaced not to exceed 3 feet, and installed in drilled holes in slab, or to wood joist with nails as indicated. Track may be fastened to concrete floor slabs with, power-driven fasteners.

5. Studs shall be seated squarely in track with stud web and flanges abutting track web, plumbed and securely fastened with sheet metal screws, to flanges or web of both floor and top tracks. Provide 4 screws per stud.

6. Where there is no suspended ceiling, tops of stud walls shall be provided with track and shoes and be fastened as specified for floors. Welding of studs to ceiling track will not be permitted except where bearing studs are installed.

7. Over metal doorframes, install a cut-to-length section of runner track, with flanges slit and web-bent to allow flanges to overlap adjacent vertical studs, and securely fasten to studs. At doorjambs, extend studs continuous to structure above.

8. Bridging, or horizontal bracing of 1-1/2 inch, cold-rolled channels shall be fastened in a manner to prevent stud rotation. Bridging shall be furnished as follows: walls up to 10 feet high, one row at mid-height; walls exceeding 10 feet high, bridging or bracing rows spaced not to exceed 5 feet on center.

9. Wind bracing shall be fastened where indicated on Drawings. Minimum size of strap shall be as indicated on Drawings. Track where strap terminates shall be anchored as indicated on Drawings.

B. Gypsum Wallboard Ceiling Suspension and Framing: Suspended ceiling system framing shall be installed in accordance with ASTM C 754, and as follows.

1. Hangers shall be spaced not more than 48 inches along runner channels and 36 inches in other direction or 42 inches in both directions unless otherwise indicated. Locations of hanger wires shall be coordinated with other Work. Hangers at ends of runner channels shall be located not more than 6 inches from walls. Hanger wire shall be fastened to structural elements with required fasteners. Sags or twists, which develop in suspended system, shall be adjusted. Damaged or faulty parts shall be replaced.

2. Main Runners: Hanger wires shall be double strand saddle-tied to runner channels and ends of hanger wire shall be twisted three times around itself. Main

runners shall be located to within 6 inches of parallel wall to support ends of cross furring. Main runners shall not come in contact with abutting masonry or concrete walls. Where main runners are spliced, ends shall be overlapped 12 inches with flanges of channels interlocked, and shall be securely tied at each end of splice with wire looped twice around channels.

3. Furring channels shall be fastened to runner channels and to structural supports at each crossing with tie wire, hairpin clips, or required fastenings. Furring channels shall be located within 2 inches of parallel walls and beams, and shall be cut 1/2 inch short of abutting walls.

4. Ceiling Openings: Support members shall be provided as required at ceiling openings for access panels, recessed light fixtures, and air supply or exhaust. Support members shall be not less than 1-1/2 inch main runner channels and vertically installed suspension wires or straps shall be located to provide at least minimum support specified for furring and wallboard attachment. Intermediate structural members not a part of structural system, shall be provided for attachment or suspension of support members.

5. Light fixtures and air diffusers shall be supported directly from suspended ceiling runners. Wires shall be provided at required locations to support weight of recessed or surface mounted light fixtures and air diffusers.

6. Control Joints: Ceiling control joints for expansion and contraction shall be located where indicated on drawings. A control joint or intermediate blocking shall be installed where ceiling framing members change direction.

   a. Interior Ceilings With Perimeter Relief: Control joints shall be installed so linear dimensions between control joints shall not exceed 50 feet in either direction or more than 2500 square feet in area.

   b. Interior Ceilings Without Perimeter Relief: Control joints shall be installed so linear dimensions between control joints shall not exceed 30 feet in either direction nor more than 900 square feet in area.

D. Splay Wires and Compression Struts: Install as detailed and as required to prevent upward and sideward motion under seismic conditions, as required by code.

E. Suspension Under Ducts: For hangers spaced at 4 to 5-1/2 foot centers, provide 6 gage hanger wires with minimum 2 inch runner channels spaced at maximum 48 inch centers. For greater spans, design system for live load of l0 pounds per square foot of area plus dead load and provide a detail in Shop Drawings.

F. Furring: Provide framing for horizontal furring as shown or required. Conform to above requirements as applicable.

3.3 CONNECTIONS TO METAL DECKING

A. Provide pre-molded neoprene filler strips matching flute profile for non-fire-rated walls and partitions covered on one or both sides up to metal decking.

B. The top runner track of fire-rated partitions shall be a minimum of 20 gage and fastened to metal deck with required fasteners at spacing required for fire rating, but in no case over 16 inches on center. Neither wallboard nor metal studs shall be fastened to top runner to allow for slab deflection. Areas above runner shall be friction fit with a minimum depth of 2-1/2 inch of 4 pounds per cubic foot mineral wool insulation. A minimum of 1/2

inch of firestopping compound shall be installed to each side of mineral wool insulation for 1-hour system, and 1 inch of firestopping for a 2-hour system. Install required special tracks, angles, fasteners and strips of gypsum wallboard as required to achieve required fire resistance rating.

C. Proprietary fire-rated top tracks are installed in accordance with manufacturer's recommendations and fire rating approval requirements.

-- End of Section --

SECTION 09252

CEMENTITIOUS BACKER BOARDS

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install cementitious backer boards as indicated on the drawings and specified.

1.2 SUBMITTALS

A. Submit product data for each type of product specified, including details of construction relative to materials, dimensions and physical properties. Also include installation instructions.

B. Submit test Reports indicating that the system complies with the specified performance tests. Tests shall be by an approved independent testing laboratory.

PART 2 PRODUCTS

2.1 CEMENTITIOUS BACKER BOARDS

A. Subject to compliance with specified requirements, provide backer boards by James Hardie Inc., or an "or equal" product by one of the following:

1. Custom Building Products.
2. American Fibercement Corp.
3. USG.
4. Certainteed Weatherboards.

B. Fasteners shall be aluminum, galvanized steel or stainless steel.

C. Adhesive shall be the manufacturer's standard product, including primer as required, and shall be compatible with the substrate to which the system is applied.

2.2 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 INSTALLATION

A. Comply with cementitious board manufacturer's installation instructions and recommendations. Install boards with joint arrangements and profile indicated on the drawings.

B. Cement board to be fastened with galvanized stainless steel screws. Pre-drill oversize holes, a minimum of 1" from edge of the cement board. Do not over torque.

SECTION 09260

GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. All labor, materials and equipment necessary for gypsum board systems (Drywall Construction) as indicated on the Contract Drawings and in these Specifications, including:

1. Taping, spackling and sanding of wallboard surfaces.

2. Metal framing for wallboard ceilings and ceiling access panel furnished under DIVISIONS 15 and 16.

B. Regulatory Agency: California Building Code (CBC).

C. References Standards:

1. GA216-85 Recommended Specifications for the Application and Finishing of Gypsum Board.

2. ASTM C1177-Glass Mat Gypsum Substrate for use as sheathing.

1.2 Related Work

A. Metal Stud Framing

B. Building Insulation.

C. Sealants.

1.3 SUBMITTALS

A. Product Data: Submit the following:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's recommended installation procedures, when approved by the Owner, will become the basis of accepting or rejecting actual installation procedures used on the work.

B. Samples: Submit samples of all types of gypsum board to receive a painted finish. Submit sample with a completed finish to confirm that all types take the finish similarly.

1.4 JOBSITE REQUIREMENTS

A. Product Handling:

1. To be arranged for delivery and storage of adequate supplies of drywall materials to the job-site to permit uninterrupted progress of the work.

C. Install trim and accessories in accordance with manufacturer's recommendations. Isolate dissimilar metals.

D. Replace damaged cementitious board materials with new materials complying specified requirements.

E. Clean finished surfaces as recommended by cementitious board manufacturer, and maintain in a clean condition.

-- End of Section --

2. Deliver materials and accessories to the job-site in their original containers or bundles properly identified with manufacturer's name and brand name. Store as directed by the Owner and protect against damage during the extent of the Contract.

3. Store drywall finish materials in flat area, protected from moisture, on flat and solid supports off the floor surface.

B. Scaffolding: In accordance with Federal, State, County of Los Angeles Safety Rules and Regulations and CAL/OSHA. Avoid interference with work of other trades.

C. Protection:

1. Adequately protect all existing and/or new work in place against damage.

2. Keep floor surfaces covered to prevent staining by spackling materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Likely sources for products are as follows:

1. Steel Framing and Furring:

a. Bostwick Steel Framing Co.
b. Gold Bond Building Products Div., National Gypsum Co.
c. United States Gypsum Co.

2. Grid Suspension Systems:

a. Chicago Metallic Corp.
b. National Rolling Mills Co.

3. Gypsum Boards and Related Products:

a. Lousiana Pacific Corp.
b. Georgia-Pacific Corp.
c. Gold Bond Building Products Div., National Gypsum Co.
d. United States Gypsum Co.

2.2 GYPSUM WALLBOARD

A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

B. Wallboard shall conform to Fed. Spec. SS-L-30D, in 48" widths by lengths as will minimize cross joints, and as follows:

1. Fire-retardant wallboard, type III, grade X, class 1, 5/8" thick and shall bear label (U.L.) for 1-hour fire rating.

2. Water-resistant wallboard shall conform to ASTM C-630, type "X" conforming to L.A. County Building Code and 5/8" thick except as otherwise noted on the Contract Drawings.

C. Screws: Type "W" bugle head drywall screws, conforming to ASTM C664, 1 1/4-inch long, except where longer length is required by Code.

D. Tape: U.S. Gypsum "Perf-A-Tape" or equal.

E. Taping Compound: As recommended by the wallboard manufacturer.

2.3 ACCESSORIES

A. Metal Trim: Form from zinc-coated steel not lighter than 26 gage, conforming to ASTM C1047.

B. Casings (for all free edges of exposed gypsum wallboard): U.S. Gypsum No. 200-4 metal trim, U-shaped and of 1/2-inch size.

C. Corner Reinforcement: "Perf-A-Bead", a metal corner reinforcement of galvanized steel with 1-3/16-inch wide "Perf-A-Tape" wings to receive joint compound, as manufactured by U.S. Gypsum, or equal.

D. All other accessories, as necessary for a complete installation.

E. Access Panels: Inryco/Milcor Style DW; 24-inch x 24-inch. Flush hinges and screwdriver operated cam latch.

F. Sound Deadening Board: Fiber or gypsum sound deadening board 1/2-inch thick as supplied by Georgia-Pacific Corporation, or equal.

G. Edge Beads at Perimeter of Ceilings: Angle shapes with wings not less than 3/4" wide, with concealed wing perforated for nailing and exposed wing edge folded flat and factory finished white.

2.4 JOINTING SYSTEM

A. Materials: Reinforcing tape and compound, designed to be used together as recommended by the wallboard manufacturer.

B. Jointing compound may be used for finishing if so recommended by its manufacturer.

2.5 ACCESS DOORS

A. In Partitions and Ceilings: Provide for access to mechanical and/or electrical installations.

B. Types:

1. 24" x 24" metal access doors with concealed hinges to metal frame and with Allen key lock.

2. Where to be located in fire-rated partitions, access doors to have the same fire-rating.

3. For tile surfaces and toilet room access doors and frames to be stainless steel with satin finish.

4. Other access doors of steel, prime coated to be finish painted as specified in Section 09900-PAINTING of these Specifications.

PART 3 EXECUTION

3.1 INSTALLATION OF WALLBOARD

A. Project Conditions: Examine all parts of the work for any conditions which would affect the soundness or correctness of drywall work. Verify all corrective work to be done before proceeding with drywall construction operations.

B. Cooperation: Required, with all other trades involved in the work of placing of work, building-in, and embedding into drywall construction of all fixtures, anchors, backing, sleeves, inserts; providing of openings, chases to the extent necessary for proper and secure installation, attachments, and passing of other work.

C. All new piping, conduit, and fixtures to be concealed by wallboard or to penetrate drywall finish to be in place, tested, and approved before start of application of wallboard.

D. Install sound deadening board at locations indicated on the Drawings. Secure to framing with drywall screws as specified for wallboard in Subsections 2.2B of this Section.

E. General:

1. In accordance with Contract Drawings and with the separate boards in moderate contact but not forced in place.

2. At internal and external corners, conceal the cut edges by overlapping covered edges of abutting boards.

3. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

F. Cutting: By scoring and breaking, or by sawing. Do all cutting from the face side. Sandpaper cut edges for neat jointing in finished work. Cutouts for pipes, fixtures, or other small openings to be scored before knocking out or cut out with saw.

1. Openings are not to be punched out. Scribe gypsum wallboard finish to intersecting or abutting surfaces.

G. Ceilings: Secure boards along perimeters of ceilings, around edges of openings to all furring channels. Place boards with long dimensions perpendicular to supports, screw in place at 12-inches on center in the field and 8-inches on center along board edges. Locate screws not less than 1/8-inch from board edges.

H. Walls and/or Vertical Planes: Place wallboard horizontally or vertically in accordance with manufacturer's recommendations for the particular situation for minimum taping. Secure wallboard to structural supports with drywall screws spaced 12-inches on center in the field and 8-inches on center staggered along each board edge. Use 1-1/4-inch long screws for fastening single layer of wallboards.

I. Fasteners: Firmly fasten boards to supporting framing member with fasteners not cutting surface paper or fracturing the gypsum core. Where a fastener has cut surface paper, provide another screw fastener approximately 1-1/2-inches from the defective fastener and remove the defective fastener. Butt join vertical joints of wallboard at supports and stagger on opposite faces of partitions.

J. Casings or Trim: Provide at all exposed edges and/or ends of wallboard and where intersecting with other materials. At exterior corners of wallboard joints secure in place specified corner reinforcements ready for taping compound.

K. Sealants: Where indicated on the Contract Drawings, provide a bead of sealant where trim or casings abut adjacent construction.

L. Access Doors:

1. By careful coordination with the Drawings and with the trades involved, install the specified access doors where required.

2. Anchor firmly into position, and align properly to achieve an installation flush with the finished surface.

3.2 JOINT TREATMENT AND FINISHING

A. General:

1. Inspect areas to be joint treated, verifying that the gypsum wallboard fits snugly against supporting framework.

2. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees for 24 hours prior to commencing the treatment, and until joint and finishing compounds have dried.

3. Apply the joint treatment and finishing compound by machine or hand tool.

4. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

5. Provide a GA214 Level 4 Finish, at locations that will be exposed to view in the finished work.

B. Embedding compounds:

1. Apply to gypsum wallboard joints and depressed fastener heads in a thin uniform layer.

2. Spread the compound not less than 3" wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then spread a thin layer of compound over the tape.

3. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6" wide at joints, and feather edged.

4. Sandpaper between coats as required.

5. When thoroughly dry, sandpaper to eliminate ridges and high points.

C. Finishing Compounds:

1. After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to joints and depressed fastener heads.

2. Feather the finishing compound to not less than 12" wide.

3. When thoroughly dry, sandpaper to obtain a uniformly smooth surface, taking care to not scuff the paper surface of the wallboard.

D. Screw Heads: To be depressed slightly and to have at least 3 coats of spackle, each coat applied at same time as the spackling of joint and to be thoroughly dry before application of succeeding coats.

E. Where Gypsum Board to Receive Vinyl or Other Coverings: Leave all surfaces clean and in acceptable conditions to receive subsequent finish work of other trades.

3.3 CORNER TREATMENT

A. Internal Corners: Treat as specified for joints, except fold the reinforcing tape lengthwise through the middle and fit neatly into the corner.

B. External Corners:

1. Install the specified corner bead, fitting neatly over the corner and securing with the same type fasteners used for installing the wallboard.

2. Space the fasteners approximately 6" on centers, and drive through the wallboard into the framing or furring member.

3. After the corner bead has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8" to 10" on each side of the corner.

3.4 OTHER METAL TRIM

A. General: The Drawings do not purport to show all locations and requirements for metal trim.

1. Carefully study the Drawings and the installation, and provide all metal trim normally recommended by the manufacturer of the gypsum wallboard approved for use in this work.

3.5 CLEANING UP

A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum wallboard scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.

B. At completion of each segment of installation in a room or space, promptly pick up and remove from the working area all scrap, debris, and surplus material of this Section.

C. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Completion.

-- End of Section --

SECTION 09300

TILE

PART 1 GENERAL

1.1 SUMMARY

A. Provisions of the General and Supplementary Conditions and Division 01 apply to this section.

B. Section Includes:

1. Ceramic tile.
2. Waterproof membrane for tile.
3. Mortar setting beds for floor and wall tile.

1.2 SUBMITTALS

A. Product Data: Manufacturer's data, standard specifications, Material Safety Data Sheets, and other technical information for each product specified.

B. Material Samples: Manufacturer's standard palette, indicating full range of tile colors, textures, and grout colors.

C. Mock-Ups: For each type, color, and texture, minimum 1' x 1' or three full tile courses, on Plexiglas to demonstrate proper bond mortar and coverage; grout color, hardness and depth.

D. Installation Instructions: Manufacturer's preparation and installation instructions.

E. Product Certificates: Signed by manufacturer certifying that the products furnished comply with requirements of this specification.

F. Reference Methods: Copies of TCA and ANSI Methods.

1.3 QUALITY ASSURANCE

A. Comply with applicable parts of the following codes or standards as a minimum requirement:

1. ANSI A108., American National Standard Specifications for the Installation of Ceramic Tile.

2. ANSI A118., American National Standard Specifications for Ceramic Tile Installation Materials.

3. ANSI A137.1, Standard Specifications for Ceramic Tile.

4. ASTM A 185 – Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

5. ASTM C 144 - Aggregate for Masonry Mortar.

6. ASTM C 150 - Portland Cement.
7. ASTM C-144 – Sand.
8. ASTM C 206 - Finishing Hydrated Lime.
9. ASTM C-206 or C 207 - Hydrated Lime for Masonry Purposes.
10. ASTM C 645 - Nonstructural Steel Framing Members.
11. ASTM C 1028 - Determining the Static Coefficient of Friction of Ceramic Tile and Other Like
12. Surfaces by the Horizontal Dynamometer Pull-Meter Method.
13. ASTM D 4551 - Poly Vinyl Chloride (PVC) Plastic Flexible Concealed Water-Containment Membrane.
14. Tile Council of America (TCA) – Handbook for Ceramic Tile installation.

B. Grade Certificate and Labeling: With each delivery of tile, furnish manufacturer's "Master Grade Certificate" to the Country.

C. Laboratory Testing: Tile shall be tested for compliance with ASTM C 1028.

D. Source of Materials: Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

E. Comply with all requirements of California Building Code and ADA.

F Qualifications of Tile Manufacturer: Company specializing in ceramic tile, mosaics, pavers, trim units, and thresholds with five years minimum experience. Obtain tile from a single source with resources to provide products of consistent quality in appearance and physical properties.

G. Qualification of Installation System Manufacturer: Company specializing in installation systems/ mortars, grouts/ adhesives with ten years minimum experience. Obtain products from single source manufacturer to insure consistent quality and compatibility.

H. Qualifications of Installer: Company specializing in installation of ceramic tile, mosaics, pavers, trim units and thresholds with five years experience with installations of similar scope, materials and design.

I. Pre-Construction Meetings:

1. Prior to start of the Work of this section and after approval of submittals, schedule an on-site meeting with the Owner, Contractor, Architect, and representatives of the material manufacturer and tile installer to review construction conditions and plans for conformance with the requirements of this Specification for each substrate.
2. Prior to laying tile and after surfaces to receive tile are installed (mortar beds, backing boards, joint separators) and after testing of waterproof membrane, schedule an on-site meeting with the Owner, Contractor, Architect, and representatives of the material manufacturer and tile installer to review tile, tile installation materials, and finishing equipment for conformance with the requirements of this Specification.

3. MOCK-UP: Provide a 24" x 24" fully grouted Mock-up for Owner /Architect approval prior to starting tile installation, contractor shall provide all labor and materials to build and test mock-up. Mock-up shall accurately represent job conditions including joints, sealants, tile underlayment, anchors and tile finishes. Any deviations from or additions to details shown on Drawings are subject to the Owner's and/or Architect's approval.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver tile in sealed containers, with manufacturer's labels intact.

B. Deliver other products in manufacturer's unopened containers.

C. Keep all materials clean and dry.

1.5 MAINTENANCE

A. Extra Materials: Provide a minimum of 5 percent of each type and color of tile and accessory shapes, from the same run or lot as the installed tile, in manufacturers' cartons and labeled.

1.6 WARRANTY

A. Provide a 5 year material and labor warranty.

B. For waterproofing, provide manufacturer's warranty of waterproofing installation, tile setting, and grouting materials for a 10-year period.

PART 2 PRODUCTS

2.1 GENERAL

A. Tile: To establish quality, the Specification is based on ANSI A.137.1 Standard Grade by Dal-Tile Corporation. Equivalent tile products from the following manufacturers may be provided:

1. Dal-Tile Corporation
2. American Olean Company.
3. Monarch Tile Manufacturing, Inc.

B. Installation Materials: To establish quality, the Specification is based on setting and waterproofing materials and methods by Laticrete International, Inc. Equivalent products and methods of the following manufacturers may be provided:

1. Custom Building Products
2. Laticrete International, Inc.
3. Mapei

C. Colors, Textures, and Patterns: Refer to Drawings. Tile trim and accessories shall match adjoining tile. Grout color shall match tile unless otherwise indicated.

D. Tile sizes: Tile sizes specified are modular dimensions unless otherwise indicated.

2.2 TILE

A. Unglazed Ceramic Mosaic Floor Tile:

1. Size: As indicated on Drawings.

2. Colors and patterns as indicated on Drawings

3. Slip Resistance: Resistant to slipping appropriate to the installed conditions of use, as required by the California Building Code and ADA.

a. As a minimum, the coefficient of friction as measured by ASTM C 1028 shall be 0.6 except ramps shall be 0.8.

B. Glazed Wall Tile:

1. Colors and patterns as indicated on Drawings.

2. Size: As indicated on Drawings

C. Trim:

1. Integral bullnose at external corners.
2. Provide bullnose where tile projects from jamb.
3. Mosaic tile base with wall tile above: A3401.
4. Mosaic tile base without wall tile above: 3461 (6-inch high sanitary coved base).
5. Cap at wainscot: A4200 and A4402.

2.3 INSTALLATION MATERIALS

A. Mortar Sand: ASTM C 144.

B. Portland Cement: ASTM C 150, Type I or II.

C. Hydrated Lime: ASTM C 207, Type S; or ASTM C 206.

D. Portland Cement Mortar: ANSI 108.1B

E. Latex Portland Cement Mortar: Sand-cement mortar mix gauged with Laticrete 38 Acrylic Admix or Custom Building Products Acrylic Mortar Admix.

F. Latex Portland Cement Mortar for Shower Areas: Laticrete 226 Thick Bed Mortar Mix Gauged with Laticrete 3701 Mortar and Grout Admix.

G. Latex Portland Cement Bond Mortar: Laticrete 317 Floor & Wall Thinset gauged with Laticrete 3701 Admix, or Custom Building Products Master Blend mixed with Acrylic Mortar Admix.

H. Latex Portland Cement Bond Mortar over Waterproof Membrane: Laticrete 317 Floor & Wall Thinset gauged with Laticrete 3701 Admix.

I. Waterproof Membrane: Provide thin, cold-applied, single component liquid with embedded reinforcing fabric equal in performance characteristics to Laticrete 9235 Waterproof Membrane.

J. Reinforcing Wire Fabric: 2-inch x 2-inch, 16 x 16 gage, galvanized electrically welded wire mesh, ASTM A 185.

K. Epoxy Grout: Provide Laticrete SP-100 Stainless Epoxy Grout for all Floors and Walls (Series 700).

L. Cleavage Membrane and Wall Backing Paper: ASTM D 226, Type I (No. 15) 15-pound asphalt-saturated felt.

M. Separation Material (for all caulked joints including perimeters and quarry-tile fields of floor mortar beds): Quality Foam, QF 200 white, 3/8" wide x 5" high.

N. Backer Rod for sealants (for ceramic mosaic fields): Polyethylene foam, closed-cell, flexible and compressible, 3/16" diameter.

O. Cleaner and Sealer:

1. Cleaner and sealer shall be from one manufacturer, acceptable to tile and grout manufacturers. To establish quality, the Specification is based on Aqua Mix Inc. Equivalent products from Miracle Sealants Co. or Watco Tile and Brick may be provided.
2. Cleaner: Aqua Mix Concentrated Tile Cleaner, neutral phosphate-free cleaner, or Custom Building Products Tile Lab Concentrated Tile/ Stone Cleaner.
3. Sealer: Aqua Mix Penetrating Sealer, fungus- and bacteria-resistant, stain-resistant, and slip-resistant as specified for tile, or Custom Building Products Tile Lab Surface Gard.

P. Sealant:

1. Sealant and primer shall be from one manufacturer, acceptable to tile and grout manufacturers. To establish quality, the Specification is based on the following products. Equivalent products from other approved manufacturers may be provided (see Section 07920, Joint Sealants).
2. Sealant for Ceramic Mosaic Tile: Pecora 898 Silicone Sanitary Sealant or Laticrete Latasil NS.

1. Sealant for Quarry Tile: Pecora Dynatrol II-S6, polyurethane, slope grade, traffic grade or Laticrete Latasil HD.

Q. Dividing and Edge Strips and Trim:

SS Schluter Systems, Inc. (800/361-4086) or equivalent product of another manufacturer in accordance with the "or equal" provision specified in Section 01600 - Product Requirements. Provide stainless steel edge of types and sizes as indicated on Drawings, or selected by Architect, or if not indicated, as recommended by manufacturer for edges, corners and flooring material transitions.

2.4 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District

(SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examine substrates, areas, and conditions where tile will be installed for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile. Verify that all vents, drains, piping, and other projections through substrate have been installed. Proceed with Work only after all conditions are in compliance.

B. Verify that substrates for setting tile are firm; dry; clean and within flatness tolerances required by relevant ANSI A108 tile installation standards. Prepare surfaces as follows:

1. Concrete Floors: Allow concrete floors to cure for 28 days minimum before beginning tile and grout installation. Remove laitance, sand, dust, and loose particles with air blast. If coatings remain, including curing compounds and other substances that contain soap, wax, oil, or silicone and are incompatible with tile-setting materials, remove them by using a terrazzo or concrete grinder, a drum sander, a polishing machine equipped with a heavy-duty wire brush, or a shot-blast system.

C. Cementitious backing panels, shall be as specified in Section 09252, Cementitious Backer Boards.

D. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

E. Verify that joints and cracks in tile substrates are coordinated with tile caulked- joint locations; if not coordinated, adjust as required by the Architect.

F. Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

G. Protect adjacent surfaces during progress of the Work of this section.

3.2 TILE INSTALLATION, GENERAL

A. Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are the same size. Lay out Work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.

B. For tile mounted in sheets, make joints between tile sheets the same width as joints within tile sheets so joints between sheets are not apparent in finished Work.

C. Extend Work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions, unless otherwise indicated. Terminate Work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in

items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

E. Locate expansion, control, contraction or isolation joints and other sealant-filled joints, directly above joints in concrete substrates, at horizontal and vertical changes in plane, or where indicated during installation of mortar beds. In quarry tile floors, provide at 12 feet on center maximum. Use foam to provide 3/8-inch width. Do not saw-cut joints after installing tiles.

F. Prepare and clean joints to be caulked, and apply sealants to comply with requirements of Division 7 Section "Joint Sealants."

G. Conform to manufacturers printed instructions, and applicable requirements of ANSI and TCA Standards.

3.3 TILE INSTALLATION, FLOOR

A. Install reinforcing and latex Portland-cement mortar setting bed over cured concrete slab or cleavage membrane on plywood floor. Lap reinforcing at least one full mesh, and support or lift so that it is approximately in the middle of mortar bed. Do not abut against vertical surfaces. Place foam separation material at perimeters and expansion joint locations for caulked joints.

B. Mix setting mortar in accordance with ANSI A.108.1a.2.2.

C. Once begun, mortar installation must continue until room is completely filled. Discard any batch not floated and finished within ½ hour of mixing. Firmly compact before screeding. Screed to true plane and pitch as indicated. Slope mortar bed sufficiently that water flows to drain and no puddling will occur. Slope mortar down to floor drains for proper installation of waterproof membrane. After screeding, firmly rub down with steel or wood float.

D. Cure mortar bed with a light fog spray of water and cover with 6-mil Visqueen for 72 hours.

E. Waterproof Membrane:

1. Install waterproof membrane where indicated and in all kitchen, toilet, shower and locker areas per TCA Standard F122-02. Extend membrane up wall mortar or backing board as follows:

   a. 6 inches minimum, or 3 inches above top of curb wall.

2. Insure that all layers of membrane are fully inserted into clamping ring of floor drain. After membrane installation and before tile setting, install pea gravel around sub drain to prevent blockage of weep holes and place mortar to proper level for setting tile.

3. Before setting tile and after seven (7) days curing, water test the membrane by damming drains and doors, filling floor with water to 4-inch minimum depth, and leaving for 24 hours. Correct any leaks and re-test before proceeding. After testing, protect membrane from traffic until tile Work begins.

F Install tile over properly cured setting bed or waterproof membrane using "thin-set" method with latex portland cement bond mortar, in accordance with manufacturer's printed instructions and ANSI A108.5. Make sure substrate is completely clean and free of dust. Cut foam at floor perimeters flush with top of mortar bed. Insure that bond coats do not intrude into joints to be caulked.

G. Minimum coverage of bond mortar shall be 80% except 95% in shower areas, for quarry tile, and exterior installations. Place tile into fresh mortar and move and press or beat in tile to insure full contact. Before setting proceeds, set and remove three tiles or sheets of tiles to confirm specified coverage of bond mortar. If coverage is insufficient, use a larger toothed trowel or back butter tiles until proper coverage is attained.

H. Install tile on floors with following joint widths:

1. Ceramic Mosaic Tile: 1/16 to 1/8 inch.
2. Quarry Tile: 1/4 to 3/8 inch.

I. Install base tile for quarry tile floors on a mortar bed, with joints matching floor.

3.4 TILE INSTALLATION, WALLS

A. Install wall mortar beds before floor mortar beds.

B. On plaster walls, clean scratch coat surface of loose or foreign materials, fog spray with water, and install brown coat mortar bed over scratch coat to a thickness not less than 3/8" and not greater than 3/4 inch. Once started, wall mortar installation must continue until wall is completely floated. Discard any batch not floated and finished within ½ hour of mixing. As soon as wall mortar is dried to sufficient hardness but still in a plastic condition, firmly rub down with wood float and scribe all plane interfaces the full depth.

C. Cover cure with 40 wt. Kraft paper for 72 hours minimum.

D. Install tile over properly cured setting bed, waterproof membrane, or cementitious backing panels using "thin-set" method with latex portland cement bond mortar, in accordance with manufacturer's printed instructions and ANSI A108.5. Make sure substrate is completely clean and free of dust. Insure that bond coats do not intrude into joints to be caulked.

E. Minimum coverage of bond mortar shall be 80% except 95% in shower areas or exterior installations. Set and test as specified for floors.

F. Lay out the Work so tiles will be centered on each wall or section of wall in order to minimize tile cuts. Lay out tile wainscots to next full tile beyond dimensions indicated. Spot setting bed with mortared tile, set plumb and true, to accurately indicate plane of finished tile surfaces.

G. Install tile on walls with following joint widths:

1. Glazed Wall Tile: 1/16 inch.
2. Ceramic Mosaic Tile: 1/16 to 1/8 inch.

H. Horizontal joints shall be level, vertical joints plumb with surfaces true and plumb, edges of tiles flushed.

I. Rub exposed cuts smooth with a fine stone; no cut edge shall be set against a fixture or adjoining surface without a 1/16 inch joint to be caulked.

J. Install access doors where required, furnished under another section, in correct location, plumb or level, flush with adjacent construction, and securely fastened to framing.

3.5 EPOXY GROUTING

A. Prior to starting, ensure that all wall and floor tile surfaces are clean and any excessive bond mortar is scraped and vacuumed from joints (approximately 2/3 depth of tile should be open for grouting). Follow manufacturer's instructions for mixing grout. Once grout Work commences, proceed until complete wall or floor area is finished using one batch of grout.

B. Epoxy grouting: Do not dampen tile. Follow manufacturer's instructions for mixing grout. Force grout into joints using sufficient pressure on rubber float so as to fill joints completely, and scrape excess grout off tile surface with rubber float. Smooth or tool grout to uniform joint finish . Do not allow grout to harden on face of tile.

C. Curing epoxy grout: Do not cover floor, but do not allow foot traffic for 72 hours. Then, if grout is not tacky, cover with 40-weight kraft paper for protection.

3.6 CLEANING AND SEALING

A. If grout scum is not visible on tile surface after curing, clean tile surface with clear water. Remove and replace cracked, broken or defective tile with proper material.

B. If, when curing membrane is removed, grout scum is visible on tile surface, follow this cleaning method:

1. Immediately recover floor with paper or felt and allow to continue curing for a minimum of 14 days; uncover floor and maintain entire tile surface saturated with clean cool water for not less than 2 hours.

2. Use neutral cleaner acceptable to manufacturers of tile and grout, and follow manufacturer's instruction. Do not use generic acid cleaners.

3. Wet tile floors and apply cleaning solution to floor surface, then scrub with a brush. Rinse area several times with clean water to flush solution off floor surface.

C. Apply penetrating sealer in accordance with manufacturer's instructions using a dense sponge applicator, paint pad, sprayer or brush. Avoid overlapping, puddling, and rundown. Completely wipe surface dry within 3 to 5 minutes using cotton or paper towels; do not allow sealer to dry on tile. After 2 hours, apply a second coat. Avoid surface traffic for 24 hours.

3.6 CAULKING

A. Insure joints to be caulked are free and clear of all setting and grouting materials and construction debris. Keep foot traffic off newly installed caulking for a minimum of 48 hours or protect with hardboard strips.

B. Install in accordance with Section 07920, Joint Sealants.

3.7 PROTECTION

A. Admit no traffic where tile is installed until mortar and grout has set for a minimum of 72 hours.

B. Protect the Work of this section until Substantial Completion.

3.8 CLEAN UP

A. Remove rubbish, debris, and waste material and legally dispose of off the Project site.

-- End of Section --

SECTION 09500

ACOUSTICAL PANEL CEILINGS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. Provide all acoustical panel ceilings as shown on the Drawings and as specified, complete.
B. Refer to Section 01750 Project Added Stock for additional requirements

1.2 SUBMITTALS

A. Refer to Section 01300 SUBMITTALS for procedures.

B. Shop Drawings and Product Data: The following list includes the required product data that shall be submitted.

1. Complete layout.

2. Samples. One sample of each specified size and type.

C. Maintenance Materials: Deliver to County one percent of the total amount of each kind and each size of acoustical units installed at the completion of the project.

1.3 PRODUCT STORAGE

A. Storage and Protection of Materials, Equipment and Fixtures: Do not store or install materials in the building until all glazing has been completed, all exterior openings have been closed in, all activities that contribute excessive moisture have been stabilized, and until relative humidity is within the limits recommended by the acoustical material manufacturer.

B. Retain temperature at a uniform minimum of 60 degrees F (16 degrees C) before, during and after installation.

1.4 QUALITY ASSURANCE

A. Design of ceiling suspension system, including related components, shall meet or exceed minimum requirements of the California Building Code and UBC Standards, current edition.

B. Framing shall comply with ASTM C635 "Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings".

C. Installation of suspended ceiling system shall be by applicators approved by ceiling manufacturer.

D. Do not install acoustical materials until proper temperature and humidity conditions as recommended by manufacturer can be maintained.

1. Interior concrete work, and other wet operations shall be complete and dry.

2. Windows and doors shall be in place and glazed.

PART 2 PRODUCTS

2.1 MATERIALS

A. Acoustical units shall conform to FS SS-S 118A and ASTM E84, Class 25 Flame Spread Rating, and be the products indicated on the drawings, or equal, and as follows:.

1. Units when tested in mounting No. 7 (suspended) shall have a noise reduction coefficient (NRC) of 0.65 – 0.75 or greater and contain not less than 81% recycled material content.

2. When tested in accordance with ASTM E-90, the Sound Transmission Class (STC) shall not be less than 35.

B. The suspended acoustical systems shall be aluminum or steel, as the case may be and shall be as indicated on the Drawings.

C. Wall Angles and Trim:

1. Length: 12'-0"
2. Flange: 15/16"
3. Metal: No. 24 gage
4. Edges: Hemmed
5. Color: Factory White

D. Hold-Down Clips: Ceiling manufacturer's standard to fit system furnished.

E. Edge Moldings:

1. Metal: Aluminum or steel with white baked enamel finish.

2. Plastic: High Impact resistance type, integral white color.

F. Hanger wire shall be galvanized, 12-gauge as required by the type of ceiling to be used. Secure hanger wire to the structure above with methods or devices which develop the full strength of the hanger.

G. Ceiling channels shall be cold-rolled steel, galvanized.

1. Size of Channel. 1-1/2 inches (38 mm), supported and spaced not more than 4 feet (1.2 m) O.C.

H. Suspension system shall be as indicated on the drawings and shall comply with ASTM C 635, metal suspension systems.

I. Seismic Compression Posts: Provide seismic compression posts of a telescoping design, manufactured from galvanized steel tubing, incorporating an injection molded plastic bulb clip for gripping the bulb on the 88 main tees. The post shall be fitted with a spring steel clip for clasping the ceiling suspension wires. The compression struts shall be adjustable, tested to withstand 500 (minimum) pounds of compressive load.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install acoustical materials with all lines level and true. Neatly make all joints and support all edges.

B. Installation of Suspended Acoustical Ceilings.

1. Install acoustical units and suspension systems in accordance with manufacturer's printed recommendations, with ASTM C 636, UL requirements, and as specified herein.

2. Do not suspend ceilings from 1-1/2-inch (40 mm) metal roof deck; suspend only from framing, purlins or steel floor deck.

3. Ceiling grid members shall be attached to not more than two (2) adjacent walls. Ceiling grid members shall be at least 1/2-inch free of other walls.

4. Provide seismic bracing for all suspended acoustic ceilings.

5. Bracing shall consist of four (4) 12-gauge sway wires spaced 90 degrees apart laterally, connected to a common point on the runner channel system, extending upward at 45 degrees, and attached to structure above. Provide one (1) such brace for each 144 square feet, or portion thereof, of suspended acoustic ceiling area.

6. Install acoustical ceiling in a true and even plane, in straight line course laid out symmetrically about center lines of ceiling. Apply border tile not less than 6 inches (150 mm) wide. Unless otherwise shown, border tiles on parallel sides shall be equal in width.

3.2 ADJUSTMENT AND CLEANING

A. Cleaning: Following erection, clean dirty or discolored surface of units. Remove units which are damaged or incorrectly applied, and replace as approved at Contractor's expense.

3.3 MAINTENANCE MATERIAL (EXTRA STOCK)

A. Furnish one spare acoustical unit for each 100 units installed.

-- End of Section --

SECTION 09650

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUMMARY: Provide resilient vinyl flooring and base, complete.

A. Section Includes: Principal items are:

1. Vinyl Floor tile
2. Vinyl Wood Plank flooring
3. Rubber base.
4. Reducer strips and trims.
5. Latex Vapor Barrier (Cutdown II) Specified in section 07261.

1.02 SUBMITTALS:

A. Product Data: Submit copies of each flooring manufacturer's recommended standard dryness testing and required test results; each manufacturers' complete technical data for flooring and base materials including primers, adhesives, and leveling compounds manufactured, supplied, or recommended by the manufacturer; the manufacturer's preparation and installation instructions for each type of flooring and base; and copies of flooring manufacturer's certified laboratory test reports demonstrating flooring meets Americans with Disablilities Act (ADA) slip-resistance requirements. Also submit evidence flooring wax meets the ADA slip-resistance requirements and AQMD VOC requirements.

B. Samples: Submit chip Samples showing the full range of flooring and base colors and patterns for preliminary selection; then submit full-size Samples of each selected color or pattern of flooring and base for final approval. Submit Samples of each reducer strip and trim. Sample installation mock-up of area 60" x 60" required for approval by the Architect prior to the installation of the balance of the work.

C. Moisture Testing Results: Submit written reports covering concrete slab moisture testing results for record purposes only and not for approval.

1.03 DELIVERY, STORAGE, AND HANDLING:

Deliver materials in the manufacturer's original unopened labeled containers. Store all flooring and base materials at minimum 70 degrees F for 48 hours before installing. Handle flooring cartons carefully to prevent damage to contents.

1.04 PROJECT/SITE CONDITIONS:

Do not install any flooring until satisfactory moisture testing results are obtained and Work of other trades is substantially completed, including painting. Keep the areas of installation and materials at minimum 70 degrees F during and for 10 days after floor and base installation is completed. Maintain adequate ventilation for the removal of moisture and fumes.

1.05 MAINTENANCE MATERIALS:

Deliver the following maintenance (attic stock) materials to Owner in unopened factory containers or sealed labeled cartons identifying contents, matching installed materials. Include unopened cans of adhesives adequate to install the maintenance materials.

a. Vinyl Floor tiles, 90 square feet of each color and pattern.
b. Vinyl Wood Plank flooring tiles, 100 square feet of each color and pattern.
c. Rubber base, at least 50 lineal feet with 10 end stop units, 10 outside corner units, and 10 inside corner units, of each color and height used.

PART 2 - PRODUCTS

2.01 MATERIALS:

Vinyl Floor tile: As scheduled: Johnsonite/ Cortina Grande-The Azrock Collection/soild vinyl tile/16"x16"

1. CORTINA GRANDE - KARIM KOLORS Specify – Resilient Solid Vinyl Tile Flooring with the following physical characteristics:

a. Complies with requirements for ASTM F 1700, Class 1, Type A (Type B for slip resistant tile) Standard Specification for Solid Vinyl Floor Tile.Cortina Grande are available as slip resistant tile with an embossed surface
b. Wear layer/Overall thickness: 1/8" (3.2 mm)
c. Tile size: 16" x 16" (40.6 x 40.6 cm)
d. Slip Resistance: ADA Compliant
e. ASTM F 970, Standard Test Method for Static Load Limit – 800 PSI (modified for higher load)
f. ASTM E 648, Standard Test method for Critical Radiant Flux of 0.45 watts/cm2 or greater, Class I
g. Warranty: 10 year Manufacturer's Warranty
h. Solid Vinyl Tiles contain 3% post-consumer recycled content 100% Recyclable
i. SCS FloorScore® Certified and meets California Specifications

Vinyl Plank Flooring As Scheduled: Johnsonite/ Tarkett-Vinyl plank flooring/I.D. Freedom Woods/6"x48"

a. Tile material meets ASTM F 1700 – Class III – Type B
b. performance standards for solid vinyl floor tile
c. Static coefficient of friction (ASTM D 2047): 0.6 or greater
d. Static Load Limit (ASTM F 970): 250 PSI – Passes
e. Resistance to Heat (ASTM F1514): $\Delta\sum \leq 8.0$
f. Resistance to Light (ASTM F 1515): $\Delta\sum \leq 8.0$
g. Electrostatic Propensity (EN1815): < 2 kv
h. Fire Performance, Critical Radiant Flux (ASTM E 648):
i. Greater than 0.45 W/cm² - Class 1
j. Chemical Resistance (ASTM F 925): Passes

Rubber base:

Johnsonite - 4" x 1/8" millwork series/wall art reveal wall base as scheduled. and matching molded inside and outside corners and end stops, coil lengths wherever feasible for minimum field joints.

a. Millwork profiles replicate the look of finely milled wood.
b. Manufactured from a proprietary thermoplastic rubber formulation.
c. Meets performance requirements for ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP, Group 1.
d. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm2 or greater, Class I.
e. ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class B, Smoke less than 450.
f. Johnsonite offers a RESTART reclamation program for returning jobsite scrap
g. Contains 14% pre-consumer recycled content
h. 100% Recyclable
i. Phthalate-free
j. SCS FloorScore® Certified and meets California Specifications Section 01350

Setting materials:

Adhesives, primers, fillers, and leveling compounds of types and composition conforming to the approved submittals, factory prepared and factory labeled as to the substrates on which application is approved by the manufacturer, meeting AQMD VOC requirements.

Reducer strips:

Extruded aluminum, brass, or bronze as selected/approved by designer, edge-butting type not overlapping flooring.

Wax:

Water emulsion non-yellowing carnauba or vinyl type floor wax, factory labeled as meeting UL and ADA slip-resistance test requirements as shown in the submittals, and AQMD VOC requirements. Use only manufacturers recommended products and notify Architect of any discrepancies prior to application.

PART 3 - EXECUTION

3.01 EXAMINATION:

Refer to Section 01400, Article "Verification of Conditions" and report to the Architect existing conditions which interfere with or prevent the proper installation of flooring or base. Do not begin Work of this Section in involved areas until adverse conditions are corrected.

3.02 PREPARATION:

A. Protection:

Cover and protect adjoining Work which may be damaged during Work of this Section.

B. Moisture Testing:

Prior to laying flooring, test concrete substrates for adequate dryness using testing procedure conforming to flooring manufacturer's directions. If tests show concrete contains excessive moisture, continue slab drying and repeat the tests until results are satisfactory.

C. Preparation of Concrete:

Clean substrates of all deleterious substances and foreign matter. Fill all cracks and holes with filler or leveling compound of type recommended by flooring manufacturer for specific job conditions. Make floor slabs true to level and plane within a tolerance of 1/8" in 10-feet; test floor areas both ways with a 10-foot straightedge and repair high and low areas exceeding tolerance. Remove the high areas by power sanding, stone rubbing, or grinding, chipping off and filling with leveling compound, or equivalent method. Fill low areas with leveling compound. Use leveling compound of type supplied or recommended by flooring manufacturer for the specific job conditions. Repair and level all surfaces having abrupt changes in plane, such as trowel marks or ridges, whether or not within allowable tolerance. Power sand repair areas and other areas as required to remove surface defects which may "telegraph" through the floor covering. Again clean the areas by vacuuming or equivalent to remove all dust and dirt; do not use water, oiled sawdust, or any similar material to remove dust. Prime concrete slabs on grade; prime other slabs if so recommended by flooring manufacturer.

3.03 INSTALLATION:

Conform to flooring manufacturer's recommended installation procedures in approved submittals; requirements specified herein govern whenever exceeding the manufacturer's recommendations. Provide flooring in cabinets and casework without bottoms, and provide flooring and base in closets; install the same flooring as is installed in the room unless otherwise indicated.

A. MOCK-UP: Provide a Mock-up for Owner /Architect approval prior to starting installation, contractor shall provide all labor and materials to build and test mock-up. Mock-up shall accurately represent job conditions including joints, sealants, and finishes. Any deviations from or additions to details shown on Drawings are subject to the Owner's and/or Architect's approval.

B. Vinyl Floor Tile Installation:

Mix sufficient quantity of tiles to complete each area before laying to avoid color variations. Install flooring with tight joints, pattern direction as approved. Lay flooring square with axis of rooms, starting on center lines with tile joint or tile center so that border tiles are not less than 4" wide, accurately aligned. Cut flooring mechanically to produce square true edges. Closely trim to pipes, jambs, outlets, and like conditions.

C. Vinyl Wood Plank Flooring:

Install per manufacture's recommendation. Use manufactures' approved mastic.

D. Base Installation:

Securely cement to backing in long lengths, minimum 18" long filler pieces, top and toe continuously contacting wall and floor, all joints tight. Provide factory-made internal and external corners, and end stops where cove base ends at jambs and offsets.

E. Reducer Strips:

Provide at exposed edges of resilient flooring, secured with matching countersunk screws into lead anchors or equivalent. Closely miter all corners and angles. Place reducer strips under door centerline if required at doorways.

F. Attic Stock:

A minimum of 5% in excess shall be provided in addition to usable pieces of vinyl planks/tile remaining after completion of installation to remain the property of the Owner and shall be properly marked or identified and stored as directed by the Owner.

3.04 CLEANING, WAXING, AND COMPLETION:

Keep flooring and base surfaces clean as installation progresses. Clean flooring and base when sufficiently seated and remove foreign substances. Immediately prior to the Owner's acceptance of building and if recommended by the manufacturer, apply at least 2 coats of wax on resilient tile flooring in accordance with wax manufacturer's instructions, each coat machine buffed. Clean adjacent surfaces of adhesive or other defacement. Replace all damaged or defective Work to original specified and acceptable condition. Remove waste, debris, unused materials, and tools from the site.

END OF SECTION

SECTION 09653

RUBBER BASE

PART 1 GENERAL

1.1 SUMMARY

A. All labor, materials and equipment necessary to installation of flooring and rubber base indicated on the Contract Drawings and herein specified.

1.2 SUBMITTALS

A. Product Data: Promptly after the Contractor has received the Owner's "Notice to Proceed" submit the following:

1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

2. Manufacturer's recommended installation procedures which, when approved by the Owner will become the basis for accepting or rejecting actual installation procedures used on the Work.

3. Sample: Contractor at his own expense shall submit three (3) 6-inch samples of specified products for approval prior to fabrication and installation.

PART 2 PRODUCTS

2.1 RUBBER BASE MATERIALS

A. General: Top set type conforming to Standard Specification F-1861, Group I (Solid); Dated March 1998, and as follows:

1. Manufacturer: Roppe or approved equal

2. Product: 4" tall Rubber Wall Base (TS model).

3. Color: To be selected by Architect from standard palette.

4. 1/8-inch thickness minimum unless noted otherwise on the drawings.

5. Provide premolded, prefabricated internal and external corners. All corners shall be pre-manufactured. Cutting, grooving, and bending shall not be allowed.

2.2 MISCELLANEOUS MATERIALS

A. Adhesive: As recommended by the manufacturer of the rubber base materials. Adhesive shall be waterproof and stabilized type. Asphalt emulsions and other non-waterproof type adhesives will not be acceptable.

B. Other Materials: All other materials, not specifically described but required for a complete and proper installation of the work of this Section shall be as recommended by the manufacturer of the materials used and approved by the Owner.

2.3 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 INSTALLATION

A. Install materials only after finishing operations, including painting, have been completed. Comply with the manufacturer's recommendations.

B. Bond the top-set rubber base to wall surface with adhesive. Install running base tightly on top of flooring, minimizing splices and using the longest continuous pieces possible.

-- End of Section --

SECTION 09676

TOPICAL MOISTURE DETERRENT FOR SLABS

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and apply topical moisture deterrent for slabs as specified.

1. Apply topical moisture deterrent only when vapor transmission testing indicates that it is advisable or as required to secure the floor covering warranty.

1.2 SUBMITTALS

A. Project Data: Submit manufacturer's descriptive data and application instructions.

1.3 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in original unbroken packages bearing manufacturers label showing brand, weight, volume and batch number.

B. Store materials at site in strict compliance with manufacturer's instructions. Do not allow materials to freeze in containers.

PART 2 PRODUCTS

2.1 TOPICAL MOISTURE DETERRENT FOR SLABS

A. The moisture deterrent shall be a single component, cutdown latex-based product that reduces moisture vapor transmission and odor through concrete slabs The product shall reduce up to 8 pounds of moisture vapor transmission (when tested according to ASTM F 1869) to an acceptable level for the installation of adhered floor covering systems. Materials shall also act to isolate cutback and other adhesive residue, to allow safe installation of floor covering without discoloration or bleed through. It shall also seal porous concrete surfaces allowing improved bond with the floor covering adhesive.

1. The product shall be "Cutdown" by dependable Floor Products, or equal.

B. Features and Benefits

1. Reduces vapor transmission to an acceptable level.
2. No VOCs
3. Mold and Mildew Resistant
4. Compatible, in direct bond, with adhered covering systems.

2.2 VOC CONTENT OF INTERIOR SEALANTS, SEALANT PRIMERS AND ADHESIVES

A. Provide sealants, sealant primers and adhesives for use inside the weatherproofing system that comply with the VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule 1168, Adhesive and Sealant Applications, for rules in effect on the date of application in the building. Regardless of the products listed in this section it is the contractor's responsibility to use products which comply with the following requirements:

PART 3 EXECUTION

3.1 APPLICATION

A. All surfaces to be treated shall be inspected and approved by the applicator at least one day prior to commencing work.

B. Mix and apply products as recommended by the materials manufacturer.

-- End of Section --

SECTION 09677

VAPOR EMISSION AND ALKALINITY TESTING FOR ADHERED FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Provide testing of moisture vapor emission and alkalinity (pH) as specified.

B. If testing reveals conditions that are not satisfactory to the flooring manufacturer, a topical moisture deterrent (specified in Section 09676) shall be applied. Apply successive iterations of the deterrent until satisfactory conditions have been attained and the floor covering warranty is satisfied.

1.2 SUBMITTALS

A. Product data: Submit technical data and specifications. List of materials proposed to be provided under this Section.

B. Test reports: Submit vapor emission and alkalinity test reports.

PART 2 PRODUCTS

2.1 VAPOR EMISSION AND ALKALINITY (pH) TESTING KIT MANUFACTURER

A. Subject to compliance with specified requirements, provide products from the following sources (or equal):

1. Vaprecision Testing Systems
2. Sinak Corp.

PART 3 EXECUTION

3.1 TESTING

A. Conduct 3 vapor emission and alkalinity tests for the first 1,000 sq. ft. of floor area and one additional test for each 1,000 sq. ft. thereafter.

B. Vapor emission testing:

1. Test in accordance with ASTM E 1907.

2. Report test results in pounds per 1,000 sq. ft. in 24 hours.

C. Alkalinity (pH) testing: Using a pH pencil, draw a small "x" on the surface (approximately 2" x 2"). Pour a small amount of distilled water over the "x" and allow to stand for 30 - 60 seconds. Using the color chart that comes with the pH pencil, determine the alkalinity of testing area.

D. Do not install finish flooring if moisture emission and pH range exceeds flooring materials manufacturers' requirements.

-- End of Section --

SECTION 09683

CARPET TILE

PART 1 - GENERAL

1.1 DESCRIPTION: Division 1 applies to this Section. Provide carpet tile complete as indicated, specified, and required.

A. Work In This Section: Principal items include:

1. Carpet tile.
2. All accessories and installation items required for proper installation.

B. Related Work Not In This Section:

1. Concrete substrate.

1.2 QUALITY ASSURANCE:

A. Qualifications of Installing Mechanics: Employ skilled journeymen carpet layer mechanics.

B. Requirements of Regulatory Agencies: Carpeting shall meet the requirements of Federal, State and Local Regulatory Agencies for flammability, static control, or other properties as required and as specified herein. Carpets installed at common areas and handicap units shall be either direct glue down or installed over a high-density pad that conform to federal and state regulations.

1. The Requirements for all carpet systems must meet or exceed the requirements of the Carpet and Rug Institute (CRI) Green Label Air Quality Test Program.

1.3 SUBMITTALS: Refer to Section 01300 for procedures.

A. Layout Shop Drawings: Submit showing dimensioned layout of installation diagram, location of dye lot changes, and details for binder bars. Approval does not relieve the Contractor of responsibility for the satisfactory installation of carpet tile.

B. Samples:

1. Preliminary Samples: Obtain Architect's color and pattern instructions and submit nominal carpet tile square Samples accordingly for approval. Include 12" lengths of binder bars in designated colors.
2. Master Samples: After preliminary approval, submit three labeled minimum carpet tile Samples from each dye lot of carpet required for the Work. Samples shall demonstrate that dye lots acceptably match and there will be no apparent color change between carpet tile pieces of different dye lots.

C. Mock-up Installations: Prepare as many Sample installations as are required for approval. Use preparation techniques, installation materials conforming to approved submittals, and installation methods proposed for the Work. Architect will closely examine installations for workmanship, appearance, alignment and preservation of

carpet pattern, non-detectability of seams when viewed from any direction or distance at the height of a standing or sitting person, and freedom from manufacturing or installation defects of any kind. Finally, approved Sample installations establish the quality required for all carpet installations, shall be identified and recorded, and shall remain in place. Sample installations are required for:

1. All carpet tile in one lobby area designated by Architect.

D. Product Data: Submit the following:

1. Carpet manufacturer's published technical data fully describing all carpet tile materials, construction, and recommended installation directions.
2. Technical data and usage instructions for each adhesive and sealer material.
3. Carpet manufacturer's published instructions for maintenance care, cleaning, and repair of carpet tile (5 copies).

E. Certificate: Submit a certificate from the carpet tile manufacturer that materials supplied comply with fire hazard resistance standards specified.

F. Maintenance Materials: Owner will select the amount of carpet tile to be retained for maintenance purposes.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING: Deliver materials in original unbroken packages, containers, or bundles bearing name of manufacturer, complete material identification, brand, and grade. Store in dry ventilated locations. Handle by methods that prevent damage, soiling, and contamination. On delivery of carpet tile material, bale ticket on each roll shall be recorded by Contractor and delivered to Owner.

1.5 JOB CONDITIONS:

A. Ventilation and Temperature: Verify that areas to be carpeted are ventilated to remove fumes from installation materials, and areas are within temperature range recommended by the various material manufacturers for installation conditions. areas where Work of other trades is to be performed and passage areas. Protect carpet tile from damage or soiling. Keep protection in place until ready for final clean-up operations.

1.6 WARRANTY: Refer to Section 01740. Furnish a written warranty to Owner for one year covering defects in materials or workmanship. Include trimming, relaying, or replacement as necessary, at no cost to Owner. Warranty must be issued by Carpet Manufacturer.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS: Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved. Refer to Section 01600 if required by the Owner or Architect, proposed substitute carpet shall be subjected to analysis at the Contractor's expense by a recognized testing laboratory, such as the Pittsburg Testing Lab, to determine the quality of proposed materials. Request for substitution shall be accompanied by a list stating the characteristics which differ from those of carpet tile specified with supporting data to justify the differences.

2.2 CARPET TILE MATERIALS:

A. Identification and Labeling: Carpet tile shall bear a positive identification by a label service showing the carpet fire hazard classification as determined by a nationally recognized testing laboratory such as UL.

B. Carpet Tile Specification Minimum Standards

1. Construction: Multi-level pattern cut/loop
2. Size: 9" x 36" (22.86 cm x 91.44 cm)
3. Gauge: 1/12 inch/47.2 per 10cm
4. Pile Units per Inch: 0.142 inches/3.61 mm5.
5. Pile Height Average: 6085 per cu.yd./0.226 g/cm3
6. Fiber System: eco solution q® nylon
7. Dye Method: 98%Solution Dyed 2% yarn dyed
8. Soil/Stain Protection: ssp shaw soil protection
9. Tufted weight: 24 oz/yd2
10. Backing: ecoworx® tilewarranty lifetime commercial limited
11. Surface Flammability: Passes CPSC FF 1-70 (ASTM D-2859)
12. Flooring Radiant Panel: Class 1 (mean average CRF: 0.45 w/sq cm or higher) (ASTM E-648)

C. Carpet Tile: Provide carpet tile(s) by Shaw Contract. Size and color as scheduled on drawings or as selected by Architect.

Carpet Tile Adhesive: Shaw 5000, an enhanced formulation designed for installation over concrete with 95% RH or less (absent of hydrostatic pressure). Shaw 5000 is a high quality, high strength, pressure sensitive adhesive used for the installation of Shaw's or non-vinyl backed carpet tiles. Shaw 5000 can be applied by roller or trowel depending on installation requirements. For additional installation information reference Shaw Industries Installation Guidelines or contact Shaw Technical Support at 1.800.471.7429.

1. Finishing accessories color as selected by the Architect and by Schluter Systems or equal:

   a. Reducing strip (color/finish to be selected).
   b. Adaptor (for ceramic tile) (color/finish to be selected).
   c. Vinyl adaptor (for bare concrete) (color/finish to be selected).

2. Provide other materials, not specifically described but required for a complete and proper installation as selected by the Contractor subject to the approval of the Owner.

D. Install in accordance with manufacturers specifications and recommendations.

2.3 RELATED MATERIALS: Use following products unless other materials are specifically recommended and named in carpet manufacturer's technical data.

A. Leveling Compound: Latex type compound, Merkote Products "Mer-Ko Underlay L" or Crossfield Products "Dex-O-Tex G-26 Underlayment". Verify that the compound is compatible with floor adhesive.

PART 3 - EXECUTION

3.1 INSPECTION: Verify conditions as specified in Section 01400. The Contractor, carpet tile supplier, and carpet tile installer shall inspect concrete floor slabs prior to start of carpet installation and shall report to Architect, in writing, all conditions which will adversely affect installation of carpeting. Do not begin carpet installation until all reported conditions are corrected.

3.2 PREPARATION: Do not start preparation until concrete floor slabs are at least 90 days old. Conform to the recommendations of Shaw Contract. Contractor shall obtain written instructions as to each type of application and/or installation prior to starting of the Work.

A. Cleaning and Drying: Clean slabs of oil, grease, waxes, curing compound, dust, dirt, debris, paint, and other deleterious substances. Verify that concrete is dry and vapor emission levels should not exceed three pounds as determined by the proper application of the calcium chloride test, if higher than 8 pounds, STOP INSTALLATION, number of tests as needed to ensure that slabs are dry but at least one test per floor and for every 2500 square feet of floor area. Allow slabs showing excessive moisture to dry and re-test until dried to tolerance allowed by floor adhesive manufacturer. Use a commercial vacuum cleaner to remove dust and dirt. Damp mop to remove dust that may remain after first vacuuming, allow surface to dry, and again vacuum; repeat the procedure if necessary to eliminate all dust. Do not use oiled or chemical treated sawdust or any similar product for dust removal.

B. Leveling: All floor slabs shall be true to level and plane within a tolerance of 1/8" in 10-feet. Test floor areas both ways with a 10-foot straightedge and repair high and low areas exceeding allowable tolerance. Remove high areas by power sanding, stone rubbing or grinding, chipping off and filling with leveling compound, or equivalent method. Fill low areas with leveling compound.
Repair and level the surfaces having abrupt changes in plane, such as trowel marks or ridges, whether or not within the allowable tolerance. Again, clean areas where repairs are performed.

3.3 CARPET INSTALLATION:

A. General: Install carpet tile in each dye lot in the number sequence furnished by manufacturer. Carpet tile direction shall be determined by the Architect per approved mock- up review with and do not reverse direction at any locations.

B. Color Control: Plan dye lot change locations to eliminate shading problems and rejection. Use only one dye lot for each area of the building unless otherwise approved; if more than one dye lot is used, obtain prior approval of color match between dye lots.

C. Laying and Seaming: Follow highest quality professional installation procedures outlined by the National Association of Floor Covering Installers and the carpet tile manufacturer's directions as to workmanship. Preserve uniform row alignment and spacing on both sides and across seams. Lay carpet tile with tuft or loop rows in straight lines both ways, free of offsets, waviness, distortion, or misalignment. Trim carpet at walls, columns, and penetrations for a compressed fit. Allow a minimum of 48 hours curing time of adhesive before subjecting carpeting to use -heavy traffic.

D. Doorways: Extend carpet into doorways without piecing in and seam to carpet tile on other side of door under door centerline except where metal thresholds occurs; no small filler pieces of carpet will be permitted at doorways.

E. Adhesive Installation: Do not stretch carpeting and carpet tile during installation. Use notched trowel directed by adhesive manufacturer. Evenly spread adhesive free of excess or thin areas. Place and roll stair and carpet tile within "open time" of adhesive. Coat all seam edges with seam sealer (not floor adhesive) applied to bottom of face yarn and entire edge of backings, and produce tight compressed seams free of gaps, peaking, or ridging. Roll or broom carpet towards open seams free of gaps, peaking, or ridging. Roll or broom carpet towards open seams or edges to expel trapped air and obtain full embedding in adhesive.

F. Moisture: Conduct Relative Humidity testing; results must be below 95% (ASTM F2170). In addition, concrete substrate moisture must be tested by the current version of ASTM F1869 anhydrous calcium chloride test. Substrate moisture vapor emissions cannot exceed 10.0 lbs. per 1000 square feet per 24 hours (4.54 kg / 92.9m2/ 24 hours). For concrete with a prior history of uncorrected moisture conditions or problems, involving higher moisture levels, treat the concrete with a moisture mitigation product, prior to adhesive application.

G. pH: Testing should be performed with results ranging between 5.0 and 11.0 (ASTM F710). Take corrective measures if the results exceed these limits.

3.4 CLEAN-UP: As each area is completed, clean up all dirt and debris, remove spots and soiling with proper cleaner, trim off loose threads with sharp scissors, and vacuum entire area clean.

3.5 INSTRUCTION: After installations are complete, carpet manufacturer's technical representative shall instruct Owner's personnel in maintenance of the installed carpeting tile. Give the instruction at time and location designated by Owner.

3.6 COMPLETED INSTALLATIONS: Clean and free of loose areas, defective or apparent seams, scallops, puckers, ripples, distortion, or other defects, and matching the quality of the approved Sample installation. All carpet tile installations not complying with these requirements, as determined by Architect, will be rejected. Contractor shall remove rejected carpeting tile and install new conforming carpeting at no extra cost to Owner.

3.7 EXCESS CARPET/ATTIC STOCK- A minimum of 5% in excess shall be provided in addition to usable pieces of carpeting remaining after completion of installation to remain the property of the Owner and shall be rolled into bundles, properly marked or identified and stored as directed by the Owner.

3.8 CARPET CORRECTION- Repair carpeting, repair joints and edges, remove bubbles, after original installation is completed; exact time of this Work as required by the Owner.

3.9 PROTECTION- Provide a heavy non-staining paper or plastic walkway as required over carpeting in direction of traffic, maintaining intact until the carpet installation is accepted by the Owner.

-END OF SECTION-

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CARPET TILE
09683-6

SECTION 09900

PAINTING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on
   1. Interior substrates:
   2. The following Interior substrates: Gypsum board, Wood, Steel

1.2 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 2: Not more than 10 units at 60 degrees and 35 units at 85 degrees, according to ASTM D 523

C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

H. EG: Ethylene Glycol. Ethylene glycol is listed as a hazardous air pollutant (HAP) by the U.S. EPA

I. Blocking: Two painted surfaces sticking together such as a painted door sticking to a painted jamb.

J. RAVOC: Reactivity adjusted VOC 'Reactivity' means the ability of a VOC to promote ozone formation.

K. PDCA: Painting & Decorating Contractors of America www.pdca.org

L. SSPC: Scopes of SSPC Surface Preparation Standards and Specifications. www.sspc.org

M. Owner – usage of the term "Owner" shall be construed to mean the actual owner of the Property or a duly authorized representative of the owner.

N. Property – usage of the term "Property" shall be construed to mean the property location identified in paragraph 1.1 B. 1. of this specification at which location the work shall be performed.

O. Painting Contractor – usage of the term "Contractor" shall be construed to mean the 3rd party contractor performing the painting portion of the project.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product.

C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, no smaller than 7 inches by 10 inches (177.8 mm by 254 mm) or larger than 8.5 inches by 11 inches (215.9 mm by 279.4 mm).
2. Label each Sample for project, owner's agent, general contractor, painting contractor, paint color name and number, paint brand name, 'P' number if applicable, and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas.
2. VOC content.

1.4 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. Ten [10] percent, but not less than [1 gal. (3.8 L)] of each material and color applied.

1.5 QUALITY ASSURANCE

A. 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. Owner's agent will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
   a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
   b. Other Items: owner's agent 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 owner's agent at a cost to be agreed upon by Contractor and Owner.

3. Approval of mockups does not constitute approval of deviations from the paint systems indicated unless owner's agent 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.

1.6 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) or more than 120 deg F (49 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.

2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Surfaces must be clean and moisture free. Prime and paint as soon as possible. Do not apply paints in snow, rain, fog, or mist. No painting shall be done immediately after rain or foggy weather or when the temperature is below 50 °F. Substrate temperature must be 5 °F or more above dew point temperature while painting and during the coating's cure time. Avoid painting surfaces while they are exposed to a full, hot sun.

B. Painting contractor should follow proper painting practices and exercise judgment based on his or her experience and project specific conditions as to when to proceed.

C. WIND VELOCITY: Excessive wind velocity can seriously impair spray application, resulting in significant material loss, low film build, excessive dry spray or overspray, plus the possibility of depositing airborne spray mist on unprotected surfaces downwind from the work. Some of these adverse effects can be compensated for by material and equipment adjustments if winds are not too high. Generally speaking, wind velocity 15 m.p.h. or higher can cause sufficient spray application problems, in which case suspending work until conditions improve should be considered.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide products manufactured or distributed by the Dunn-Edwards Corporation or Equal.

2.2 PAINT, GENERAL

A. 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, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content:

Provide materials that comply with VOC limits of authorities having jurisdiction.

C. Colorants:

The use of colorants containing hazardous chemicals, such as ethylene glycol, is prohibited.

D. Colors:

As Selected by owner's agent from manufacturer's full range.

1. Where color is selected prior to bid submittal, Contractor shall bid [one (1)], [two (2)], or more finish coats, as appropriate to the color selected, and shall expressly state number of finish and prime coats and type (full or spot) of prime coat.
2. When the final color has not been selected prior to bid submittal, Contractor may need to bid additional coats when submitting their bid. The Owner should be aware that if a color is chosen following the bid process and the color is significantly different from original color, a change order for an additional finish coat might be required.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials:

Owner reserves the right to invoke the following procedure.

1. Owner may 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 non- complying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will comply with requirements to use compatible products and systems as described in Paragraph 2.2.A. 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

3.1 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:

Interior Substrates:

1.Concrete: 11 percent or less.
2.Masonry (Clay and CMU): 11 percent or less.
3.Wood: 8 percent or less.
4.Plaster: 5 percent or less.
5.Gypsum Board: 5 percent or less.

C. Portland Cement Plaster Substrates: Verify that plaster is fully cured, including pH testing to determine that alkalinity is within limits established by the manufacturer.

D. Interior and/or exterior Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

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.

3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.

B. Scraping or sanding surfaces of older buildings (especially pre-1978) may release dust containing lead or asbestos. EXPOSURE TO LEAD OR ASBESTOS CAN BE VERY HAZARDOUS TO YOUR HEALTH. Always wear appropriate personal protective equipment during surface preparation, and finish cleanup of any residues by water- washing all surfaces. For more information, see Dunn-Edwards brochure on "Surface Preparation Safety" or call EPA's National Lead Information Hotline at 1-800-424-LEAD, or visit www.epa.gov/lead or/asbestos, or contact your state or local Health Department.

C. 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.

D. 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 re-prime substrate with compatible primers or apply bond coat as required to produce paint systems indicated.

E. Where mildew is present, remove mildew by scrubbing with a commercial mildew remover, or, with a solution of one (1) part household bleach mixed in three (3) parts water by volume. The solution should be left on the surface for a minimum of twenty (20) minutes, rinsed thoroughly with clean water to remove any residue, and then allowed to dry completely prior to application of patching/caulking/prime/finish coat systems.

F. Moisture: All areas that may cause paint failure due to moisture shall be addressed and eliminated. This would include, but is not limited to:

1. Gutters and downspouts not working properly.
2. Previous coats of paint not adhering properly.
3. Wood checking (cracks and splits in wood).
4. Deteriorated caulking.
5. Gaps between substrates.
6. Rotten wood.
7. Areas affected by water splashing.
8. Painting in inclement weather.
9. Painting a substrate where residual moisture exceeds limits stated in Un-caulked nail holes.

Pressure washing and surface preparation methods

1. Pressure wash or water blast to remove oil, grease, dirt, loose mill scale, and loose paint at pressures of 2500-3500 p.s.i. at a flow of 3.0-3.5 gallons per minute. This is the recommended standard for optimal efficiency.

G. Prior to application of prime/finish interior and/or exterior coat systems, provide a clean, sound surface free of dust, dirt contaminants, mildew and efflorescence by use of a power wash and hand scraping or use of mechanical grinders where necessary. Additionally, areas are to be scrubbed with a bristle brush to insure complete removal of any residual salts. Remove all labels, stickers, price tags, etc. from surfaces before priming. Wood areas stamped with ink codes must be spot primed with blocking primers. Power wash areas to be coated to ensure that new salt deposits do not occur. Failure to do so may cause adhesion issues or result in delamination and invalidate any manufacturer warranty given or implied. After cleaning if there is still chalk evident, this condition must be brought to the owner's attention in writing before any further work is done.

H. Cementitious Substrates: (concrete, stucco, masonry) 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.

1. Wire brush all loose and peeling paint and dust all surfaces before spot priming or applying finish coats. Industry standards apply to applications of cracks, voids, and repairs. Any areas of repair shall be patched and dried before coatings are applied. Cracks should be repaired as follows:

   a. Cracks less than ¼" wide should be filled using Dunn-Edwards Brush Grade Elastomeric Patch.

   b. Cracks wider than ¼" should be cut and scraped to a "V" shape and filled with Dunn-Edwards Trowel Grade Elastomeric Patch. Large cracks and holes may require repeated applications of patching materials to bring flush with adjacent substrate. Feather-in all repairs and caulking to blend with adjacent substrate.

2. Large holes in stucco / plaster/ concrete will be patched with Rapid Set Premium Stucco Patch or Rapid Set Wunderfixx Concrete Patching Compound in appropriate texture to blend with existing texture. Allow stucco patch to cure to acceptable pH level (10) prior to application of prime/finish coat systems. Caulk large cracks in stucco / plaster/ cement with GE-Life Time 920.

3. Spot prime over all patched areas, cracks, and holes then use an appropriate topping material to match existing surface level and texture.

J. All Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing.

   a. SSPC-SP 1, "Solvent Cleaning."
   b. SSPC-SP 2, "Hand Tool Cleaning."
   c. SSPC-SP 3, "Power Tool Cleaning."

1. All ferrous metals should be thoroughly cleaned and all loose rust or mill scale be removed by wire brush, scraper and/or power tool, such as an electric drill with a wire brush attachment. Any rust spots or bare metal should receive the appropriate prime coat. Rust inhibited primer to be applied on all properly prepared surfaces where rust is evident. Any hard, glossy surfaces should be dulled. Previously painted ferrous metal in sound condition should be washed down with a strong detergent-type cleaner such as Krud-Kutter or Simple Green.
2. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

4. 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.

K. Wood Substrates:
1. All deteriorated or delaminated substrates (i.e. wood, hardboard siding, T1-11) shall be replaced. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for interior and/or exterior use in paint system indicated.
2. Sand and dust surfaces that will be exposed to view.
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.
5. Spot prime all patched and filled areas as well as any new wood with the appropriate primer or sealer.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations.
1. Use applicators and techniques suited for paint and substrate indicated.
2. The number of coats scheduled is the minimum number of coats required. Additional coat(s) shall be applied at no additional cost to the Owner, to completely hide base material, provide uniform color, and to produce satisfactory finish results.
3. Apply coatings without thinning except as specifically required by label directions or required by these specifications. In such cases, thinning shall be the minimum reduction permitted.
4. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
5. Paint both sides and edges of interior and/or exterior doors and entire exposed surface of interior and/or exterior door frames.
6. Paint entire exposed surface of window frames and sashes.
7. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
8. Priming may not be required on items delivered with prime or shop coats, unless otherwise specified. Touch up prime coats applied by others as required ensuring an even primed surface before applying finish coat.

B. Tint undercoats same color as topcoat but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. 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.

3.4 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.

3.5 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 owner's agent, and leave in an undamaged condition.

D. At completion of activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 Interior PAINTING SCHEDULE

A. Prepare, paint and finish all surfaces specified and agreed upon.
B. Provide paint finishes of even uniform color, free from cloudy or muddled appearance. Properly correct all non-complying work to the satisfaction of owner and owner's representative and the representative of the paint manufacturer.
C. Paint application finish schedule:

1. Gypsum Board, PT-1 Walls

First Coat:	VINYLASTIC PLUS, Interior Latex Wall Sealer (VNPL00)
Second Coat:	SPARTASHIELD, Exterior 100% Acrylic Low Sheen Paint (SSHL40)
Third Coat:	SPARTASHIELD, Exterior 100% Acrylic Low Sheen Paint (SSHL40)

SPECIAL NOTES AND INSTRUCTIONS:
A. Follow manufactures recommendations for proper preparation and application as stated on manufactures product data sheets.

2. Gypsum Board, PT-2 Restrooms/Kitchen Walls

First Coat:	VINYLASTIC PLUS, Interior Latex Wall Sealer (VNPL00)
Second Coat:	SPARTASHIELD, Exterior 100% Acrylic Eggshell Paint (SSHL30)
Third Coat:	SPARTASHIELD, Exterior 100% Acrylic Eggshell Paint (SSHL30)

SPECIAL NOTES AND INSTRUCTIONS:
A. manufactures recommendations for proper preparation and application as stated on manufactures product data sheets.

3. Gypsum Board, PT-3 Ceilings

First Coat:	VINYLASTIC PLUS, Interior Latex Wall Sealer (VNPL00)
Second Coat:	SPARTAWALL, Interior Flat Paint (SWLL10)

Third Coat: SPARTAWALL, Interior Flat Paint (SWLL10)

SPECIAL NOTES AND INSTRUCTIONS:
A. Follow manufactures recommendations for proper preparation and application as stated on manufactures product data sheets.

4. Gypsum Board, PT-05 Marker Board

Marker Board Paint: Provide "Screen Goo High Contrast" marker board paint by Idea Paint or approved equal by Home Theaters, LLC. Apply in accordance to manufacturer's specifications and/or recommendations. Manufacturer's 10 year limited material warranty. Apply additional coat(s) as required to obtain an approved surface by the Architect. To receive level 5 finish.

5. Concrete Block, PT-06

Armor XL Paint- Category: Paint Collection: Scuffmaster Physical Properties Application: Spray Durability: 25,000 Scrubs, in accordance with ASTM D2486 Waterbased polyurethane acrylic Sustainability VOC Content—108 g/L (LEED EQ 4.2) Packaging contains recycled material Free of APEO and heavy metals Manufactured in the USA

6. Wood, Doors and door casing

First Coat: ULTRA-GRIP Select, Interior/Exterior Multi-Surface Primer (UGSL00)
Second Coat: SPARTAWALL, Interior Low Sheen Paint (SWLL40)
Third Coat: SPARTAWALL, Interior Low Sheen Paint (SWLL40)

SPECIAL NOTES AND INSTRUCTIONS:
A. Follow manufactures recommendations for proper preparation and application as stated on manufactures product data sheets.

7. Steel, Entry Doors

First Coat: BLOC-RUST, Red Oxide Alkyd Corrosion Inhibitive Primer (43-4)
Second Coat: ULTRASHIELD Interior/Exterior Low Sheen Paint (ULSH40)
Third Coat: ULTRASHIELD Interior/Exterior Low Sheen Paint (ULSH40)

SPECIAL NOTES AND INSTRUCTIONS:
A. Follow manufactures recommendations for proper preparation and application as stated on manufactures product data sheets.

For lead safety refer to 3.2 B. and Dunn-Edwards PDS sheets under Special Instructions.

END OF SECTION

SECTION 09051

WALL COVERINGS

PART 1 - GENERAL

1.01 SUMMARY: Division 1 applies to this Section. Provide wall covering complete.

1.02 SUBMITTALS:

A. Product Data: Submit the following: (Refer to Division 1 for procedures)

1. Samples: Submit samples as scheduled. Label with name, material schedule reference, manufacturer, identification and room or space in which the product is to be used.
2. Job Samples: Prior to installation, submit three- 5" x 7" sample swatches from each approved wall covering material to be installed.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:

1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
3. Store materials in clean, dry area indoors, out of direct sunlight.
4. Keep wall coverings clean and dry.
5. Store materials at normal occupied building temperature and humidity for a minimum of 3 days before installation.

1.04 AMBIENT CONDITIONS

A. Rooms to Receive Wall Coverings: Weather tight with HVAC settings, including pressure, temperature, and relative humidity, the same as those of occupied building for 3 days before installation, throughout installation, and for 3 days after installation of wall coverings.

1.05 EXTRA MATERIALS: Deliver to Owner 10% Attic stock of all wall coverings used on the project.

PART 2 - PRODUCTS

2.01 MANUFACTURE: Refer to product and finish selections on drawings.

2.02 WALL COVERING: Provide vinyl wall coverings as indicated on drawings. All materials shall meet or exceed the specifications listed below:

A. ASTM D 2486 – Standard Test Methods for Scrub Resistance of Wall Paints.
B. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
C. ASTM E 96 – Standard Test Methods for Water Vapor Transmission of Materials.
D. Federal Specification CCC-W-408D – Vinyl Wall Covering.
E. ISO 9001:2000 – Quality Management Systems – Requirements.

2.03. WINDOW FILM: Digital Print Media

WIDTH: 61" (max print width 59")
CONTENTS: 100% polyester
BACKING: Adhesive

A. WARRANTY Manufacturer warranties that this product line will be free of defects in material and manufacture when properly applied to a flat interior glass surface of a building or structure for a period of 1 year from the date of the film purchase

B. APPLICATION UV cured digital, printable, substrate for glass

C. INSTALLATION Blue solution/glass installation solution

D. CLEANING INSTRUCTIONS Clear warm water or mild, soapy warm water (Ivory liquid soap recommended), then rinse. Isopropyl Alcohol (a.k.a. rubbing alcohol). Do not use solvent-based cleaning agents, lacquer thinners, nail polish remover, pine oil or cleaning agents containing bleach, which may cause discoloration over a period of time. It is recommended that cleaning be done with a natural sponge. A cloth or towel should only be used to tamp dry (not rub).

2.04 PRODUCT DATA:
Submit manufacturer's product data, including surface preparation and installation instructions.

A. Cleaning Instructions: Submit manufacturer's cleaning instructions.
B. Warranty Documentation: Submit manufacturer's standard warranty.

2.05 INSTALLERS QUALIFICATIONS:
A. Installer regularly engaged, for past 5 years, in installation of commercial wall coverings.
B. Employ persons trained for installation of commercial wall coverings.
C. Pre-installation Meeting:
1. Convene pre-installation meeting before start of installation of wall coverings.
2. Require attendance of parties directly affecting work of this section, including Contractor, Architect, installer, and manufacturer's representative.
3. Review surface preparation, testing for and eliminating sources of moisture accumulation into walls, installation, cleaning, protection, and coordination with other work.

2.06 ACCESSORIES
A. Primer:
1. Contain mold inhibitor.
2. Compatible with wall coverings.
B. Adhesive:
1. Heavy-duty, clay based, wall covering adhesive.
2. Contain mold inhibitor.
3. Compatible with wall coverings.
4. Use undiluted.

PART 3 EXECUTION

3.01 EXAMINATION
A. Examine surfaces to receive wall coverings.
B. Notify architect of conditions that would adversely affect installation or subsequent use.

C. Do not begin surface preparation or installation until unacceptable conditions are corrected.

3.02 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer's instructions.
B. Ensure walls are structurally sound, smooth, clean, and dry.
C. Remove mold, mildew, dirt, oil, grease, stains, and marks.
D. Repair wall irregularities.
E. Ensure existing paint or primer has good adhesion to walls.
F. Test for and eliminate sources of moisture accumulation into wall or wall cavity.
G. Remove existing wall coverings, including remaining adhesive.
H. Apply primer to wall surfaces to receive wall coverings.

3.03 INSTALLATION

A. Install wall coverings in accordance with manufacturer's instructions.
B. Test Installation:
   1. Install test installation 3 days in advance of main installation.
   2. Install a minimum of 3 strips of wall coverings for test.
   3. Inspect wall coverings and evaluate appearance for color uniformity and pattern match.
   4. Notify Architect and manufacturer if appearance is unacceptable.
   5. Do not begin main installation until unacceptable appearance is corrected.
C. Install wall coverings under adequate lighting conditions.
D. Install wall covering strips plumb.
E. Apply adhesive to back of wall coverings in accordance with manufacturer's instructions
F. Ensure wall coverings have made good contact to wall, with no bubbles.
G. Seams:
   1. Install wall covering seams vertical, with tight fit.
   2. Install wall covering seams free from air and paste bubbles.
   3. Do not locate seams closer than 6 inches to corners.
   4. Obtain uniform color match associated with patterns across seams.
H. Remove paste residue from wall coverings, ceilings, and baseboards.
I. Do not install wall coverings over existing wall coverings.
J. Install wall coverings to obtain uniform color and pattern match across seams.
K. Install wall coverings with no objectionable variations in color and pattern match, as determined
by Architect.
L. Remove and replace damaged wall coverings that cannot be successfully repaired, as determined by Architect.

3.4 CLEANING

A. Clean wall coverings promptly after installation, if necessary, in accordance with manufacturer's instructions.
B. Do not use harsh cleaning materials, solvents, steel wool abrasive cleaners or methods that could damage wall coverings.

3.5 PROTECTION

A. Protect installed wall coverings from damage during construction.

-END OF SECTION-

SECTION 10170

SOLID PHENOLIC PLASTIC TOILET PARTITIONS

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install solid phenolic toilet partitions as indicated on the drawings and specified.

1.2 SUBMITTALS

A. Manufacturer's Data: Submit the following:

1. Product data sheets.

2. Installation instructions.

3. Replacement parts information.

B. Shop Drawings: Submit the following:

1. Show fabrication and erection of compartment assemblies, to extent not fully described by manufacturer's data sheets.

2. Show anchorage, accessory items and finishes.

3. Provide location drawings for bolt hole locations in supporting members for attachment of compartments.

C. Samples: Submit the following:

1. Furnish scale model of compartments, including stile, shoe, door, door hardware, divider panel, and mounting brackets.

2. Furnish sections showing stile anchoring and leveling devices, concealed threaded inserts, panel and stile construction and edge construction.

PART 2 PRODUCTS

2.1 STILES, PANELS, DOORS AND SCREENS

A. Solid phenolic material constructed of solidly fused plastic laminate with matte-finish melamine surfaces, colored face sheets, and black phenolic-resin core that are integrally bonded. Color and pattern as selected by the Architect from manufacturer's standard colors.

1. Provide Bobrick 1080/1180 Duraline Series, or equal.

2. Toilet partitions shall be floor mounted, overhead braced.

B. Solid phenolic material shall meet National Fire Protection Association Class B, Uniform Building Code Class II, ASTM E-84 Fire Resistance Standards: flame spread 69, smoke density 93.

C. Finish Thickness

1. Stiles and doors shall be 3/4" (19 mm).

2. Panels and benches shall be 1/2" (13 mm).

D. Hardware

1. All hardware to be 18-8, type-304 stainless steel with satin finish.

2. All hardware shall be concealed inside compartments with the exception of out-swinging doors.

3. Hardware of chrome-plated "Zamac" is unacceptable.

E. Latches

1. Sliding door latch shall be 16 gauge (1.6 mm).

2. Sliding door latch shall require less than 5-lb force to operate. Twisting latch operation will not be acceptable.

3. Latch track shall be attached to door by flathead machine screws into factory-installed threaded brass inserts.

4. Latch handle shall have rubber bumper to act as door stop.

5. Latch shall allow door to be lifted over 16-gauge (1.6-mm) keeper for emergency access.

6. Metal-to-metal connection shall withstand a direct pull of over 1000 lb. per screw.

F. Disabled Access Door: Provide slide latch with U-shaped and loop handle immediately beneath latch on both sides of the door.

G. Hinges

1. Cam shall be adjustable in the field to permit door to be fully closed or partially open when compartment is unoccupied.

2. Hinges shall be attached to door and stile by theft-resistant, one-way stainless steel machine screws into factory-installed metal inserts. Fasteners secured directly into the core are not acceptable.

3. Metal-to-metal connection shall withstand a direct pull of over 1000 lb. per screw.

H. Coat Hook shall be constructed of stainless steel and shall project no more than 1-1/8" (29 mm) from face of door. Coat hook shall be secured by theft-resistant, one-way stainless steel screws.

I. Mounting Brackets shall be constructed of stainless steel and shall be mounted inside compartment. Mounting brackets exposed on the exterior of the compartment will not be acceptable. Wall mounted urinal screen brackets shall be 11 gauge (3 mm) double thickness.

J. Leveling Device shall be 3/16" (5-mm) hot rolled steel bar; chromate-treated and zinc-plated; through-bolted to base of solid phenolic stile.

K. Stile Shoe shall be one-piece, 4" (102-mm) high, type-304, 22-gauge (0.8-mm) stainless steel with satin finish. Top shall have 90 return to stile. Patented one-piece shoe capable of adapting to 3/4" or 1" stile thickness and capable of being fastened (by clip) to stiles starting at wall line.

L. Headrail (Overhead Braced) shall be satin finish, extruded anodized aluminum (0.125" / 5-mm thick) with anti-grip profile.

PART 3 EXECUTION

3.1 ERECTION

A. Install compartments rigidly, straight, plumb, and level and in accordance with manufacturer's installation instructions.

B. Installation methods shall conform to manufacturer's recommendations for backing and proper support.

C. Conceal evidence of drilling, cutting, and fitting to room finish.

D. Maintain uniform clearance at vertical edge of doors.

3.2 ADJUSTMENT AND CLEANING

A. Adjust hardware for proper operation after installation.

B. Set hinge cam on in-swinging doors to hold doors open when unlatched.

C. Set hinge cam on out-swinging doors to hold unlatched doors in closed position.

D. Clean exposed surfaces of compartments, hardware, and fittings.

-- End of Section --

SECTION 10220

ALUMINUM-FRAMED OFFICE FRONTS AND DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes aluminum framed office fronts and door system with the following components:

1. Swing doors
2. locking hardware,
3. Seals,
4. Glass and other Glazing Panels.

B. Related Sections:

1. Division 01 Sections for Submittal and Shop Drawing requirements

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum-framed office fronts and doors of dimensions and configurations shown, complying with performance requirements indicated, based on manufacturer's testing of doors representative of those specified:

1. Aluminum frames and fixed panels shall withstand gravity loads and a lateral deflection is limited to the lesser of L/175 or 3/4 inch, whichever is less, when tested under a uniformly distributed load of 5 lb/sq. ft. (24.4 kg/sq. m) according to ASTM E 72.
2. Glazing Rebates: Design glass framing system to limit lateral deflections of glass panel edges to less than 1/175 of glass-edge length or 3/4 inch (19 mm), whichever is less.

1.3 ACTION SUBMITTALS

A. Product Data: Submit product for the interior custom sliding/stacking door/panel assemblies indicated. Include manufacturer's standard details, fabrication methods and written recommendations for each component of the custom sliding/stacking door/panel system required, and the following:

1. Roughing-in dimensions
2. Installation instructions
3. Parts list.

B. Shop Drawings: Submit detailed shop drawings of interior sliding/stacking door/panel assemblies including large-scale sections of all typical members, dimensioned plans and elevations, anchors and other components as required.

1. Layout and installation details, including relationship to adjacent work.
2. Elevations at minimum 1/4 inch = 1 ft. - 0 inch scale.
3. Detail sections of typical composite members.
4. Anchors and reinforcement.
5. Hardware mounting heights.

6. Glazing details

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Linear Trim: Submit pairs of samples of each specified finish on 12 inches (300 mm) long sections of extrusions or formed shapes. Where normal color variations are anticipated include two or more units in each set of samples indicating extreme limits of color variations.
2. Corner Fabrication: 8-by-8-inch- (200-by-200-mm-) long, full-size corner, including full-size sections of extrusions with factory-applied color finish.
3. Glazing: Manufacturer's standard-size unit, but not less than 3 inches (75 mm) square.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For office fronts and doors to include in maintenance manuals. Provide manufacturer's care instructions for maintenance and care of aluminum framed office fronts and doors; including cleaning instructions, precautions and limitations.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain aluminum framed office fronts and doors from single source from single manufacturer.

B. Manufacturer: Engage a qualified and experienced manufacturer with a minimum of 5 years successful experience providing interior office fronts and doors on projects of comparable size and scope.

C. Installer qualifications: Firm with 5 years experience installing selected system, and who is approved by the manufacturer for installation of the specified system.

D. Reference Standards: Except as modified by more stringent requirements of local codes, comply with requirements of the following:

1. American Architectural Manufactures Association (AAMA)

a. AAMA 611.98, Voluntary specification for anodized architectural aluminum.
b. AAMA 2603.02, Voluntary specifications, performance requirements and test procedures for pigmented organic coatings on aluminum extrusions and panels.

E. Pre-installation Conference: Conduct conference at Project site in conjunction with regularly scheduled weekly construction meetings.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install aluminum office fronts and door until building is enclosed and finishing operations, including ceiling and floor-covering installation and painting, are complete.

B. Field measurements: Check openings by accurate field measurements before fabrication. Show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances with General Contractor to ensure proper fit.

C. Coordination of Work: Coordinate layout and installation of aluminum framed office fronts and doors with other units of Work. Installation of ceilings, floor coverings, lighting fixtures, HVAC equipment, and fire-suppression systems should be completed before aluminum framed office fronts and doors are installed.

D. Precautions: Keep anodized aluminum components free from alkaline substances such as plaster, mortar, and harsh cleaning and finishing agents (including bleach, and chlorine based products, ammonia, abrasive cleaners, muriatic acid). Protect anodized aluminum from contact with pressure treated wood saw dust and welding splatter. If such substances come in contact with anodized aluminum, clear surfaces affected using clean water, wipe dry using products and following instructions recommended by manufacturer's care instructions.

1.7 WARRANTY

A. General: Provide a written guarantee for aluminum framed office fronts and door assemblies against all defects in materials and workmanship agreeing to repair or replace components that fail in materials or workmanship within two years from the date of Substantial Completion.

B. Failures include, but are not limited to, the following.

1. Structural failures including excessive deflection.
2. Faulty operation of operators and hardware.
3. Deterioration of metals, metal finishes and other frame component materials.

1.8 DELIVERY STORAGE AND HANDLING

A. Comply with manufacturer's instructions for delivery, storage and handling requirements.

B. Deliver materials to job site in sealed, unopened cartons or crates. Protect units from damage. Store extrusions on pallets under roof and in dry conditions. Do not wrap with tarp, visqueen or other non-breathable materials. Keep parts protected from dirt, dist and other job site debris.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Provide precision built, pre-engineered, pre-fitted, interior aluminum office fronts and custom swing doors, by the following single source manufacturer with experience for the North American market:

PK30 System LLC
PO BOX 656
3607 Atwood Road
Stone Ridge, NY 12484
(212) 473-8050 (845) 687-9774
website: www.pk30.com
email: info@pk30.com

2.2 MATERIALS

A. Recycled Content: Provide aluminum framed office fronts and doors with 40% preconsumer recycled content and 22% post consumer recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content constitutes a minimum of **[42]** percent by weight.

B. Aluminum: Alloy and temper recommended by the manufacturer for strength, corrosion resistance, and application of required finish.

1. Comply with the following:

   a. Aluminum Extrusions: ASTM B 221 (ASTM B 221M). ; Alloy 6063-T5/T52.
   b. Aluminum Sheet or Plate: ASTM B 209 (ASTM B 209M; Alloy 6061-T6
   c. Aluminum Bars, Rod and Wire: ASTM B 221 (ASTM B 221M) ; Alloy 6063-T6

2. Provide main extrusions of not less than 0.080-inch (2mm) wall thickness. Provide the following stile/rail/mullion dimensions, unless otherwise indicated.

   a. Horizontal rails: 2.3125-inch (59mm) high by 1.750-inch (44mm) wide.
   b. Vertical stiles: 0.9375-inch (24mm) high by 1.750-inch (44mm) wide.
   c. Mullions: 0.625-inch (16mm) high by 1.750-inch (44mm) wide.

3. Provide extruded glazing stops and other applied trim extrusions with minimum wall thickness of 0.050-inch (1.3 mm).

C. Fasteners; Provide 18/8 stainless steel, or other non-corrosive metal fasteners compatible with aluminum components, hardware, anchors, and other items being fastened.

1. Reinforcement: Where fasteners screw-anchor into aluminum extrusions where there is no screw boss, or that is less than 0.125-inch (3mm) thick, reinforce the interior with aluminum or steel to receive screw threads.
2. Exposed fasteners: All exposed fasteners to be flat socket head or phillips head 18/8 stainless steel machine screws.

D. Gaskets: Use manufacturer's standard extruded clear silicone or black neoprene durometer 70 glazing gaskets in fabrication, assembly and installation of the work.

2.3 FABRICATION

A. Provide shop assembled panels with hardware and accessories required for a complete assembly. Provide concealed fastening devices and pressure-fit components that will not damage ceiling or floor coverings. Fabricate panels with continuous light-and-sound seals at floor, ceiling, and other locations where panels abut fixed construction.

B. Factory prepare interior aluminum frames to receive templated mortised hardware; include cutouts, reinforcements, mortising, drilling, and tapping,

C. Fabricate frames for glazing with removable stops to allow glazing replacement without dismantling frame.

1. Locate removable stops on the inside of spaces accessed by keyed doors.

D. Fabricate components to allow secure installation without exposed fasteners.

E. Employ standard or heavy duty door hardware based on total door weight, with a maximum door weight for standard sliding door hardware of up to 176 lbs (80 Kg)and a maximum door

weight of up to 353 lbs (160Kg) for heavy duty sliding door hardware; with the following component weights:

1. Weight of frame: Standard 4 ft. x 8 ft. (1.22M x 2.44M) frame weighs 28 lbs (11 Kg).

2. Infill Panels: 1/4-inch (6mm) glass panels weigh 3.24 lbs (1.47Kg) per square foot and 1/4-inch (6mm) acrylic panels weigh 1.7 lbs (0.77 Kg) per square foot.

3. Factory glaze panels to the greatest extent possible.

4. Fixed Panels: Provide fixed panels with integral height adjusters built into a reveal channel mounted inboard of the top and bottom panel rails to allow for precision field adjustment and alignment of system elements.

5. Swing Doors: Offset Pivot with standard function full mortise locks with an overhead combination angle stop.
   a. Center pivot hinges; with pivot point location adjustable along the width of the door.
   b. Offset pivot hinges, for wide throw for extra clearance applications.

6. Bottom guide Channel:
   a. Provide lower guide channel for sliding doors with a travel distance that is greater than the door width.
   b. Provide a fixed point bottom guide for bypassing and pocket doors.

2.4 DOOR HARDWARE

A. General; Provide manufacturers heavy duty hardware units as indicated, scheduled or required for operation of each type of door/panel assembly, including the following items of sizes, number, and type recommended by the manufacturer for the service required. Finish hardware items to match or compliment the finish of the door/panel assemblies.

B. Use manufacturer's door hardware groups, recommended for each condition of use.

C. Operating hardware for hinged doors

1. Center pivot hinge set – PK06-1010 Center pivot hinge set manufactured by PK30 System

2. Offset pivot hinge set PK06-2010 manufactured by PK30 System.

D. Locking hardware for hinged doors.

1. Acceptable Manufacturer: FSB USA, which is located at: 1 Bishop Ln. ; Madison, CT 06443; Tel: 203-404-4700; Fax: 203-404-4710; Email: info@fsbusa.com; Web: https://www.fsbna.com
   a. Full mortise locks, Series SML **2.5-inch (64mm)** backset. ANSI A 156.13, series 1000, mortise locks and latches, Grade 1.
   b. Lock function and lever/knob trim as selected by Architect from FSB catalog.

E. Install hardware, except surface mounted hardware, at the fabrication plant. Remove only as required for final finishing operation, and delivery and installation at the project site.

2.5 FINISHES, GENERAL

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 FINISHES

A. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

B. Anodized Finishes:

1. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.07 mm or thicker.

2. Anodized finishes shall be fully sealed by the manufacturer or processor according to procedures recommended by the licensor of the process.

C. Protect finishes on exposed surfaces by wrapping temporary protective covering before shipping.

D. Slight variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine substrates at the site for openings to be enclosed in the work of this section. Verify the structural integrity of substrates. Verify dimensions at rough openings. Verify that substrates scheduled to provide support to office fronts and doors, are level, plumb and square, with no unevenness, bowing or bumps in the floor.

B. Do not install the work of this section until unsatisfactory conditions are corrected. Installation of units constitutes acceptance of existing conditions.

C. Templates and diagrams: Furnish templates, diagrams, and other data to fabricators and installers of related work, as necessary, for coordination of the adjacent finishes.

3.2 INSTALLATION

A. Install complete system in accordance with manufacturer's recommendations and written installation instructions.

B. Provide appropriate anchorage devices to securely and rigidly fit frames into place, absolutely level, straight, plumb and square. Install frames in proper elevation, plane and location, and in proper alignment other work.

1. Installation Tolerance: Install each demountable partition so surfaces vary not more than 1/8 inch (3 mm) from the plane formed by the faces of adjacent partitions.

C. Install frame components in the longest possible lengths; components up to [72 inches (1830 mm)] [96 inches (2450 mm)] long must be one piece.

1. Fasten to suspended ceiling grid on maximum [48-inch (1220-mm)] centers, using sheet metal screws or other fasteners approved by frame manufacturer.
2. Use concealed installation clips to produce tightly fitted and aligned splices and connections.
3. Secure clips to extruded main-frame components and not to snap-in or trim members.
4. Do not leave screws or other fasteners exposed to view when installation is complete.

D. Install panels, handles, locks, decorative hardware and trim in accordance with respective manufacturer's recommendations and installation instructions for each condition of use.

1. Gang fixed panels together using manufacturer's connectors. Abutting panels shall result in a manufacturer designed 1/8 inch (3mm) reveal between panels.

2. Employ header panels above offset pivot hinged doors. Use 1-1/8 inch (29mm) profile for the bottom rail. Adjust fixed panel reveals from 1/8 in. (3mm) to 3/4 inch (18mm) at the ceiling and at the floor in order to accommodate out of level conditions.

E. After repeated operation of installed units, adjust door operators for optimum operating condition and safety.

3.3 DEMONSTRATION

A. Engage a factory-authorized service representative to demonstrate and train Owner's maintenance personnel to adjust, operate, and maintain demountable partitions. Refer to Division 01 Section "Demonstration and Training."

3.4 CLEANING

A. Remove temporary coverings and protection. Frame should be cleaned using a soft clean cloth. Use clean warm water or mild detergent. Do not use acids, alkaline or fluorides, abrasive cleaning methods may damage surfaces of frames and or panel materials. Clean prior to Owners acceptance. Remove construction debris from project site and legally dispose of debris.

B. Clean exposed frame surfaces promptly after installation, using cleaning methods recommended by frame manufacturer and according to AAMA 609 & 610.

C. Touch up marred frame surfaces so touchup is not visible from a distance of 48 inches (1220 mm). Remove and replace frames with damaged finish that cannot be satisfactorily repaired.

3.5 PROTECTION

A. Institute protective measures throughout the remainder of the construction period to ensure that panels will be without damage or deterioration, other than normal weathering, at the time of substantial completion.

END OF SECTION

SECTION 10420

ENVIRONMENTAL GRAPHICS

PART 1 GENERAL

1.1 SUMMARY

A. This section includes:

1. Provide service, labor, material, and product required to fabricate and install signs and graphic items detailed, noted and specified in the contract documents, consisting of specifications, graphics schedule and design drawings

2. Provide engineering design as required for approvals and permits.

3. Obtain and pay fees for all required permits.

4. Provide typesetting, copy layouts and all other finished art work unless otherwise specified.

1.2 SUBMITTALS

A. Submittal requirements shall be as noted in the general conditions including, but not limited to, the following:

1. Shop Drawings: Submit complete shop drawings, drawn to scale, detailing interior construction, placement of lighting, electrical equipment, method of service, access and full-size details affecting exterior appearance.

2. Engineering Drawings: Provide complete structural design drawings, drawn to scale, showing engineering details and calculations for sign structures, concrete footings, bases, rebar and building attachments as required for approval.

3. Lettering Patterns: Submit scaled lettering patterns of all sign messages, symbols or other graphic elements related to sign fabrication.

4. Vinyl Copy: Submit mounted, one-line samples of each size, color, type style and font on pre-spaced tapes.

5. Screen Processed Copy: Submit blueline prints of all film positives.

B. Technical Specifications:

1. Submit technical specifications of paint, coatings and/or other finish materials along with actual samples of these finishes.

C. Samples and Prototypes:

1. Paint Color Samples: Submit samples of paint for review of color, sheen and texture, on 4"x 6" aluminum sheets to simulate actual finish. Contractor shall resubmit each sample as requested until required color, sheen and texture is achieved.

2. Hardware Samples: Submit samples of hardware, such as hinges, locks and fasteners, that will be exposed to view.

3. Concrete Finish Samples: Submit sample of concrete finish for pre-cast or cast-in place exterior signs and sign bases.

1.3 QUALITY ASSURANCE

A. All fabrication and installation shall be as per local codes and ADA requirements, and be safe and secure.

B. All work included in this contract shall be performed under supervision of trained foremen, by persons skilled and experienced in the trade or trades required to accomplish the work.

C. Subcontractors shall be provided with all necessary information, including up-to-date drawings, specifications and graphics schedules, and their work shall be supervised as required.

D. Materials used in the execution of this work shall be new and of the highest quality available.

E. Engineering and Code Requirements:

1. Provide complete engineering drawings for signs and architectural graphic items including, but not limited to, internal structure, electrical and mechanical parts, concrete footing and bases. Items shall be engineered to satisfy applicable codes and regulations. Engineering drawings shall be reviewed by a California registered civil engineer and shall include the engineer's stamp and signature.

2. Provide complete shop drawings, drawn to scale, of all signing elements, showing both interior and exterior construction, concrete footing and bases, placement of lighting, electrical equipment and full-size drawings of details affecting exterior appearance. Contractor shall submit shop drawings for review by the County of Los Angeles before fabrication is started.

F. These requirements shall apply to all products provided to complete the scope of work.

1.4 PROJECT CONDITIONS

A. Verification of Existing Conditions and Documents:

1. Visit the site to inspect existing conditions and to verify dimensions which are related to the fabrication and installation of sign items.

2. Thoroughly review contract documents, checking conditions and dimensions shown. Contractor shall notify the County of any discrepancies in the documents, field dimensions and conditions, and changes required in the documents.

3. Written dimensions on the drawings shall have precedence over scaled dimensions.

4. The graphic schedule shall be followed for quantity of sign items, message wording and references to the drawings.

5. The specifications shall take precedence in quality over information noted on the drawings.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery, installation and/or storage of signs as required. In the event of a phased installation, agree upon a delivery and staging area which is lockable.

1.6 GUARANTEE

A. Guarantee the signs covered under this contract for a period of one (1) year from acceptance by the County.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acrylic Plastic: Rohm And Haas Co., Plexiglas II, or equal.

B. Adhesives: General Electric, Dow Corning or equal.

C. Polycarbonate Sheet: General Electric, Lexan or equal.

D. Vinyl Graphics: 3M Scotchcal & Scotchlite Film, Calon II or equal.

E. Acrylic Polyurethane: Matthews Paint Company, or equal.

F. Exterior Digital Color Prints: 3M Computer Graphics, Rembrandt, Vomar or equal

G. Interior Digital Color Prints: 1200 DPI Design Winder, Digital Color World or equal

H. Laminated tempered glass: PPG or Pilkington

2.2 MATERIALS

A. Adhesives:

1. Provide clear silicone adhesive for the installation of sign items.

2. Provide (VHB) foam tape and contact sheet adhesive as manufactured by 3M, or equal, to be used in conjunction with silicone adhesives for installation of wall signs. Provide tamper-resistant screws where indicated on drawings.

3. Provide Versilok acrylic structural adhesives as manufactured by Hughson Chemicals, or equal.

4. Provide PL Premium construction adhesive, as manufactured by Chemrex Inc., Contech brands, Minneapolis, MN for attachment of expanded polystyrene sign elements

B. Aluminum: Provide angles, extrusions, channels, shapes, tubes and panel flat, aluminum plate or sheets of thickness required to prevent oil-canning.

1. Provide alloy 5005-h34 for anodized finishes.

2. Provide alloy 3003-h14, mill finish, for painted finishes.

C. Structural Steel and Aluminum: Provide structural steel and aluminum shapes, channels and extrusions of wall thickness and alloy temper required to meet or exceed engineering requirements and satisfy applicable codes.

D. Steel Tubing: Provide material conforming to "specifications for electric resistance welded carbon and alloy steel mechanical tubing" ASTM A513. Remove scale before finishing. Provide wall thickness to meet structural requirements.

E. Stainless Steel: Provide stainless steel alloy #304. Where polished finish is specified, it shall be standard #8 mirror finish. Where brushed finish is specified, it shall be standard #4 finish. Brushed grain shall be horizontal, unless otherwise specified.

F. Cast Bronze: Provide cast bronze of thickness specified on drawings. Graphics and copy projecting in relief from the background surface shall be brushed, sanded or polished as noted on the drawings.

G. Exterior Illumination: Provide ground sign lighters, size as required to provide even illumination of sign face. All connections shall be housed within a weatherproof, watertight, code-approved junction box, buried flush to the existing grade. Use KIM lighting AFL 1 horizontal flood or approved equal.

H. Electrical Wiring and Equipment: Provide electrical materials such as ballasts, transformers, lamps, sockets, neon units, connectors and other equipment required to complete fabrication Equipment shall be new and approved by Underwriters Laboratories, Inc.

I. Internally Illuminated Signs (if applicable): Assemble components within illuminated signs conforming to approved standards of Underwriters Laboratories, Inc., as published in the latest edition of "Standards for Electric Signs" (ANSI/UL48). Illuminated signs shall bear the U.L. label. Wiring and equipment shall be concealed within the sign structure.

1. Ballasts: Provide ballasts by Jefferson or equal. Provide the exact number and arrangement of lamps per ballast as recommended by ballast manufacturer, with no exceptions. Ballasts shall be easily accessible for required maintenance.

2. Transformers: Provide transformers of the high power factor type by Jefferson or equal. Secondary voltages shall be as required by the footage of glass to be illuminated. Transformers shall have 30 to 60 M.A. rating.

3. Wiring: Provide high tension wiring of not less than gto 15 wire as manufactured by Carol Cable Company or equal. Wiring shall be 90 degree centigrade, 1000 volt tw/mtw U.L. file no. E 18971. Wiring connectors for wire splicing shall be U.L. approved 1000 volt capacity. They shall be scotch lock type Y or R, and accessible for inspection and repair.

4. Sockets: Provide Kulka no. 582 and 583 or Kulka No. 530-2 and 5301 sockets with silver coated contacts and pitch sealed backs for use with 800 M.M. lamps or equal.

5. Fluorescent Lamps: Provide high output 800 M.A. sign white lamps in lengths as required.

6. Disconnect Switches: Provide external, waterproof, disconnect key activated switches for electrical cabinet signs. Switches shall be flush mounted to the cabinet face, and shall control primary wiring within the sign. Location of switch is subject to approval of the County and shall be shown on the shop drawings.

J. Labels: Provide code-required labels which shall be located inconspicuously away from primary message faces of the sign. No other labels shall be affixed to sign.

K. Hardware: Provide incidental hardware necessary for the proper functioning of the signs, including:

1. Hinges: Provide stainless steel hinges for hinged access panels. Finish to match adjacent surface.

2. Locks: Provide pin tumbler locks for access panels. Finish to match adjacent surface.

3. Fasteners: Provide flat head stainless steel fasteners, painted to match adjacent surfaces, wherever exposed fasteners may be required. Exposed fasteners shall be permitted only where specifically stated in the individual sign specifications and drawings. All exposed fasteners shall be tamper resistant. Provide stainless steel fasteners for assembling ferrous to non-ferrous metal.

L. Acrylic Plastic: Provide acrylic of thickness indicated on the drawings, but not less than 1/8" thick, unless otherwise specified. Cement used to fabricate plastic parts shall be #4 cement as manufactured by Industrial polychemical or equal. Plastics shall be of uniform color and translucence, as supplied by manufacturer.

M. Tactile (ADA) Signs: Provide sign panels, consisting of light-sensitive coating (photopolymer) on polyester or steel backing. Back-up substrate material shall consist of 1/4" acrylic panel painted in color shown on drawings. When aluminum back-up substrate material is specified, photopolymer on aluminum shall be used. Laminate together with industrial tape/adhesive as required.

N. Paint: Provide two component acrylic polyurethane with low volatile organic compounds and ultraviolet (UV) inhibitors.

O. Concrete: Provide formed concrete, cast in place or precast, using 16 ga. galvanized iron metal forms for all concrete work exposed above grade. Exposed surfaces shall be finished free of air pockets, pits, exposed aggregate or other imperfections.

P. Vinyl Material: Provide high performance vinyl products, guaranteed for a minimum of seven (7) years of durability, for exterior applications. Application of vinyl films shall be per manufacturer's specifications and recommendations.

1. Opaque Vinyl Graphics: Provide machine-cut vinyl graphics as shown on the drawings. Graphics and copy shall be pre-spaced on 3m series scpm-3 application tape or equal.

2. Reflective Graphics: Provide reflective letters machine-cut vinyl graphics as shown on the drawings. Graphics shall be pre-spaced on 3M series scpm-3 application tape or equal.

Q. Digital Color Prints: Provide digital color prints as noted on the drawings for interior or exterior application. Shall warranty the durability performance of such prints for two years for exterior use and seven years for interior use.

R. Banner Material: Banner shall be heavy gauge exterior grade nylon in colors specified. Edges to be sewn or hot knife cut to prevent fraying.

2.3 FABRICATION

A. Aluminum:

1. Welded Construction: Provide sign cabinets or structures of welded construction with joints filled and finished smooth, unless otherwise noted on the drawings. Exposed fasteners may not be used, except for access panels, which shall be attached with stainless steel flat head screws painted to match adjacent metal.

2. Seamless Construction: Provide signs cabinets of seamless welded construction with edges break formed, and joints welded, ground and finished smooth. Exposed fasteners may not be used, except for access panels, which shall be attached with stainless steel flat head screws painted to match adjacent metal.

3. Structural Reinforcements: Provide sign enclosures or cabinets reinforced with interior structural metal framing as required.

4. Oil-Canning: Adhere panels to structural framing with industrial adhesive or by providing additional welded structural support as required to prevent oil canning.

5. Multi-panel Surfaces: Run grain in the same direction where aluminum and or stainless steel multi-panel surfaces are used.

6. Electrolysis: Prevent corrosive action due to electrolysis by separating ferrous and non-ferrous metals with neoprene or vinyl spacers, or by using stainless steel fasteners.

B. VHB (Very High Bond) 3M Tape: Apply VHB tape as specified and recommended by the manufacturer when used in the fabrication of signing elements.

1. Pretreat all surfaces prior to the application of VHB tape. Remove all oil and foreign matter, and lightly sand bonding surfaces prior to tape application.

2. Prior to removal of the carrier tape, burnish the tape to the first applied surface to activate adhesive properties.

3. Reburnish bonded areas and clamp elements together for a time specified and recommended by the manufacturer.

C. Acrylic Signs: Finish all exposed edges of plexiglass, smooth with a polished or painted finish as noted on the drawings. Exposed lamination seams shall not be permitted.

D. Exposed Concrete Signs and Bases: Shape, dimension and form concrete bases as detailed and noted on the drawings. Provide steel reinforcing rods in quantities, size and placement as required. Provide wood forms built with metal form liner to produce flat exposed surfaces and smooth edges.

E. Concrete Footings: Provide concrete mixed and poured in accordance with engineering specifications. Provide 16 gauge, galvanized iron metal forms for exposed concrete, which shall be finished free of air pockets, pits, exposed aggregate or other imperfections, unless otherwise noted. Exposed tops of concrete footings shall be finished with 6" wide mow-strip surround, sloping away from sign structure toward finished grade.

2.4 FINISHING

A. Painted Finish: Provide paint finishes to surfaces which have been prepared in accordance with the manufacturer's specifications and recommendations. Pre-treatment of paint finished surfaces shall include:

1. Ensure that all surfaces are free of tooling marks, scratches, dings, dents, bondo, joint fillers or foreign matter.

2. Thoroughly sand surfaces to be paint finished as required, using dual action sander with 320 grit paper prior to application of primer and finish coats.

3. Provide sufficient primer coats to achieve a smooth uniform surface.

4. Spray paint all surfaces as required, following paint manufacturer's recommendations concerning thinning, application and drying time.

5. Provide primer coats and top coats of two component acrylic polyurethane with low volatile organic compounds.

6. Provide finish paint containing ultraviolet UV inhibitors and antioxidants as required for the highest degree of color and finish retention.

7. Provide satin gloss finish unless otherwise specified.

B. Painted Finish on Tactile (ADA) Signs: Provide tactile sign panels with background painted with acrylic enamel or acrylic polyurethane with an eggshell matte finish. Raised (tactile) graphics shall be off-contact screen printed with acrylic enamel formulated for screen process, or thermal foil-stamped in colors matching those noted on the drawings. Copy shall have crisp and clean edges. Braille dots shall be finished to match color of sign background surface.

C. Clear Coated Metal Surfaces: Provide pretreatment and protective clear coat finish to all polished or brushed metal surfaces. Pretreatment and finish processing shall include the following:

1. Provide thorough cleaning of metal to be free of all buffing compound and all foreign matter.

2. Provide tarnish-retarding pre-treatment using Matthews Paint Co. #74-737 "Braco Pretreatment" or approved equal.

3. Provide clear colorless, adhesive using Matthews Paint Co. #74-793 "Spray Bond" or approved equal. Applications shall be followed with 30 minute drying cycle.

4. Provide final clear coat finish of #282-260 "Braco Clear", catalyzed with #283-800 "Catalyst" and reduced with #285-100 "Exempt Reducer" by Matthews Paint Company or approved equal.

5. Provide clear coat finish to cast letters, coating shall be applied to the backs of all letters, as well as the front and sides.

2.5 COPY APPLICATION

A. General Requirements: Provide project typestyle(s) with Adobe Type I Postscript Font available from Adobe Systems for all copy applications except as otherwise noted on the drawings. Typestyle(s) shown on the SKA's documents are provided for information only.

1. Provide typestyle available from Adobe Systems with film or machine cut positives produced by Phototypesetter, "GSP Sign Maker", or other method approved by the County. Large copy shall be photo-mechanically or digitally enlarged.

2. Ensure that size and placement of copy shall comply with dimensions for letter height, line spacing and placement as noted on the drawings or in digital files or on the final approved lettering patterns.

3. Ensure that baselines of all copy shall be straight and parallel with top or bottom of the sign structure unless otherwise noted .

4. Ensure that edges of letter forms shall be true and smooth, with straight or curved portions reproducing the specified project typestyle exactly.

5. Ensure that corners of letter forms or numerals be true to form. Rounded letter forms shall extend slightly below the normal baseline per respective typestyle characteristics. All letter forms shall be free of imperfection such as ticks, and distortion of straight lines and curves.

B. Tactile (ADA) Signs: Provide ADA tactile signs executed with typestyle and symbols indicated on the drawings and accompanied with grade II Braille translations. Letter forms shall be crisp and free of imperfection.

1. Symbols, copy and grade 2 Braille shall be processed from original machine cut or photo-mechanically produced film positives.

2. All tactile copy shall be raised a minimum of 1/32" in-relief from the background field.

3. Individually applied, hand-spaced letters and or symbols will not be accepted.

C. Dimensional Copy: Provide digitally routed or laser cut copy to reproduce the specified typestyle exactly. Free hand-routing of letters will not be accepted.

1. Hand-file corners of all letters to the proper acute, obtuse or squared angled contour characteristic of the letterstyle.

2. Provide full-size plotted lettering pattern for approval by the County prior to any cutting of metal. Final product will be checked against approved lettering pattern.

D. Screened-Printed Copy: Provide photo-mechanically produced screens rather than hand-cut screens. All copy shall be printed using fine mesh screens and screening inks formulated equal to or exceeding Warnow's Decal Du-Well Enamel.

1. Apply one coat of clear acrylic polyurethane as a protective coat on painted and screen-printed surfaces.

2. Ensure that the surface of all letters will be uniform in color, finish and free of pin holes or other blemishes.

3. Provide colors for sign message and background colors that match, specified and approved color samples in every respect for consistency in chroma, value and coverage.

4. Provide sign colors that maintain proper opacity or translucency and are free of blistering, bleeding or fading. Color registration shall be crisp, sharp and free of imperfection.

5. Provide screen process copy on porcelain enamel signs executed in accordance with petals 105(69).

E. Vinyl Copy Applications: Prepare surfaces for vinyl sheet and copy applications in accordance with manufacturers specifications and recommendations. Surfaces shall be perfectly smooth and free of dust, grease, wax or other foreign matter prior to application. Spacing of all copy shall be done according to approved samples utilizing pre-spacing application tapes.

F. ADA Signs: Provide tactile copy and symbols for ADA room identification signs. Copy shall be raised-in-relief 1/32" above the signs background surface. Copy shall be painted to colors indicated on the drawings. Letter forms shall be crisp and clear and free from imperfection.

G. Printing Digital Directory Map: Provide digitally printed directory plans unless otherwise noted on the drawings. Digitally printed plans shall be produced with 3M Scotch Print Electronic Graphic System providing prints with a 2 year guarantee for exterior use and a 7 year guarantee for interior

use. Contractor shall laminate digital prints with a UV graffiti resistant clear overlay film for extended durability.

PART 3 EXECUTION

3.1 PREPARATION

A. Survey site, structures and existing conditions under which signs shall be installed, and notify the County, in writing, of conditions detrimental to the proper and timely completion of the work. The work shall not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Review location plans and graphics schedule provided to locate and identify sign units. Item numbers found in the graphic schedule correlate to specific sign units found on the sign location plans.

1. Location of signs shown on the location plan drawings are for general information only.

2. Arrange to meet with the County at the site for final location of sign elements.

3. Exterior signs shall be located with numbered stakes tagged with correct sign type item numbers.

B. Install signs at locations shown on drawings. Ensure that signs are installed plumb and true, at mounting heights indicated, and by method shown or specified.

C. Clean and properly align, level and true installed signs flush to surface or freestanding as detailed and noted, free of excess visible adhesive is used. Damaged to sign or surrounding surfaces or other imperfections will not be approved.

D. Provide stainless steel pins and other mechanical fasteners for designed for exterior conditions. Provide fasteners and hardware as specified by engineering .

E. Remove protective coating and identifying stickers, paper, upon completion of the installation.

F. Repair damage of any kind to signs to the satisfaction of the County or item shall be replaced.

G. Connect electrical signs to the stubbed power source.

H. Permanently install signs using concealed vandal proof, fastening methods.

3.3 CLEANING AND PROTECTION

A. Upon completion of installation, clean sign surfaces in accordance with manufacturer's instructions. Protect units from damage until accepted by the County. Repair or replace damaged units as directed by the County.

1. Check items for correct placement.

2. Clean, oil and polish as required by manufacturer's instructions.

3. Remove crating and debris from project site and leave premises in clean condition.

4. Take precaution to protect finishes.

5. Repair and repaint building surfaces damaged during installation.

3.4 INSPECTION

A. Inspect condition of locations and surfaces on which signs will be installed. Do not proceed with installation until defects or errors which would result in poor installation have been corrected.

Organize a job walk after all signs are installed with the Architect to inspect the installation. Correct all items noted by the County as not meeting contract requirements.

B. Reconditioning of Surfaces: Do as required.

1. Unpaved surfaces disturbed during the installation of the signs to be restored to their original elevation and condition. Sod and topsoil to be preserved carefully and replaced after the backfilling is completed. Sod that is damaged is to be replaced by sod of quality equal to that removed. Where the surface is disturbed in a newly seeded area, the restored surface to be reseeded with the same quantity and formula of seed as that used in the original seedings.

2. Paved surfaces to be repaired and restored to their original condition.

C. Locations of Signs: Arrange a meeting with the County at the site for final location of sign elements. All signs are to be located with the use of numbered stakes tagged with correct item numbers.

Following this section is the graphics schedule and design detail pages.

-- End of Section --

SECTION 10800

TOILET ROOM ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. The Work specified in this Section includes providing toilet accessories where indicated on the Contract Drawings, and specified.

1. The Easterday products shall not be substituted because these are the standard County accessories.

1.2 SUBMITTALS

A. Product Data: Promptly after the Contractor has received the Owner's "Notice to Proceed" submit the following:

1. Manufacturer's specifications and other data required to prove compliance with specified requirements.

2. Manufacturer's recommended installation procedures which, when approved by the Owner will become the basis for accepting or rejecting actual installation procedures used on the Work.

3. Complete descriptive data on fasteners proposed for each type of wall or partition construction, recommended mounting locations and mounting instructions.

B. Shop Drawings: Submit for approval for each item specified under this Section. Indicate location of backing required to attach to wall or ceiling-support items.

C. Samples: If requested by the Owner, submit one full size sample of each specified item. After approval samples may be installed if they are identified and their locations are noted.

D. Non-Stock Items: When so specified submit complete Shop Drawings to the Owner for approval.

1.3 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials to the job-site in unopened suitable packaging properly identified with the manufacturer's labels indicating manufacturer's name, product name and model number.

B. Storage: Store materials where directed by the Owner, in a location under cover, safe from weather and damage by construction operations.

C. Protection: Use all reasonable means necessary to protect materials before, during and after installation. In the event of damage, to specified items immediately make necessary repairs and/or replacements to the full approval of the Owner, at no added cost to the Owner.

1.4 REFERENCES

A. ANSI A117- 1986 Specifications for making buildings and facilities accessible to and usable by physically disabled persons.

B. UBC - Chapters 5 and 33 Requirements for the Disabled.

C. Title 24, California Code of Regulation, Parts 2, 3, and 5.

D. ADA, Accessibility Guidelines for Buildings and Facilities, Federal Register Volume 56, Number 144, Rules and Regulations.

PART 2 PRODUCTS

2.1 TOILET ROOM ACCESSORIES

A. Except as otherwise specified, provide products manufactured by Bobrick Washroom Equipment North Hollywood, CA (818) 764-1000, Easterday Janitorial Supply Company or equal.

B. Anchors and Fasteners: Provide anchors and fasteners capable of developing a retaining force commensurate with the strength of the accessory to be mounted or installed and well suited for use with supporting construction. Where exposed fasteners are permitted, provide oval head fasteners (vandalproof type) with finish matching the accessory item.

C. Restroom / Kitchen / Staff Lounge Accessories Schedule

1. Recessed Toilet Seat Cover Dispenser: Bobrick B-3013
2. Sanitary Napkin disposal: Bobrick B-270
3. Double Roll lockable Toilet Tissue dispenser at all restrooms accessible to the public: Bobrick B-3888, satin finished stainless steel.
4. Counter-mounted Soap Dispenser: Bobrick B-8226
5. Wall mounted lavatory soap dispenser: Bobrick B-8221
6. Semi-recessed Mounted Paper Towel Dispenser and Waste Receptacle: Bobrick B3942, with 368-60 Interchangeable 18 gal. receptacle.
7. Surface Mounted Utility Hook: Bobrick B-6707, satin finished stainless steel.
8. Mirror: Bobrick No. B-2908 (with tempered glass) in restrooms. See Drawings for mirror sizes.
9. 36" Grab Bar: Bobrick No. B6806 with 256 anchor plate
10. 42"Grab Bar: Bobrick No. B6806 with 256 anchor plate
11. Mop Rack: Bobrick No. B-223 X 36
12. Baby Changing Station: Bobrick No. KB110-SSWM
13. Coat Hook: Bobrick No. B-6827.
14. Shelf: Bobrick No. B-683 x 24".
15. Recessed Paper Towel Dispenser: Bobrick B-359
16. Double Roll Toilet Tissue dispenser at all staff restrooms: Bobrick B-6867
17. Surface Mounted Toilet Seat Cover Dispenser: Bobrick B-221

D. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to advanced written approval of the Owner.

PART 3 EXECUTION

3.1 INSTALLATION

A. Examine the areas and conditions under which Work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until detrimental conditions have been corrected. All detrimental conditions shall be corrected as directed and approved by the Owner, before proceeding with Work of this Section. Start of

installation operations shall imply Contractor's acceptance of job conditions.

B. Throughout construction of substrate surfaces, use all means necessary to ensure proper and adequate provisions for concealed support devices and for finished openings to receive the Work of this Section.

C. Locate accessories as indicated on the Contract Drawings or as otherwise directed by the Owner.

D. Securely attach accessories to adequate supports with concealed approved vandal - proof fasteners.

E. Install accessory items as per manufacturer's recommendations, mount flush and plumb with adjacent wall surfaces.

F. Installation and locations shall comply with State of California (CAL/ABL) California Architectural Barriers Laws, Title 24 and ADA.

G. Install each item in its proper location, firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.

H. Adjustment: Before final inspection, inspect each accessory item installation for rigid and secure installation. Take necessary adjustment action for rigid and secure installations.

I. Remove all excess materials, equipment, rubbish and debris from the job-site. All areas in the structure used by the Contractor to be left in a clean and safe condition.

-- End of Section --

SECTION 10816

UNDER SINK PLUMBING COVER - FABRIC TYPE

PART 1 GENERAL

1.1 SUMMARY

A. Furnish and install under sink plumbing cover (fabric type) at all exposed hot water piping.

1.2 SUBMITTALS

A. Submit product data that describes the materials of construction, dimensions, profiles, methods of installation, and finishes.

B. Submit one full-size sample of each type of plumbing cover in order to verify that the item meets the specified requirements. Acceptable samples will be returned and may be used in the work.

PART 2 PRODUCTS

2.1 UNDER SINK PLUMBING COVERS

A. Manufacturer: Subject to compliance with requirements, provide "Handy-Shield" fabric type under sink products as manufactured by Plumberex Specialty Products Inc., or equal.

B. Covers shall be ADA compliant, IAPMO and UPC approved, soft and pliant, smooth vinyl coated fabric, coated with closed cell foam not less than 0.25" thick. The closed cell foam shall have been tested under ASTM E84 and passed with a flame spread rating of 10 or less; fuel contributed = 20 or less; and smoke density of not more than 1.0. Exposed surfaces shall be non-absorbent, devoid of sharp points, and coated to deter the growth of microbes. The covers shall be secured to plumbing by means of velcro straps.

C. Covers shall be equipped with weep seams to afford the circulation of air and the drainage of condensation.

1. Stop valve covers shall afford ready access to the valve handle for operation or maintenance.

2. P-trap covers shall fit the contour of the piping in a neat manner.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install the under sink plumbing covers in accordance with the manufacturer's recommendations.

-- End of Section --

SECTION 15010

BASIC REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. This Section supplements all Sections of this Division and applies to all phases of Work specified and indicated on the Contract Drawings. Provide for complete installation of mechanical systems. This section supplements the requirements of Division 1.

B. Other applicable sections: The condition of the contract, general and supplementary and Division 1 apply to work specified in this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Concrete Work, except as elsewhere specified: Division 3-Concrete.

B. Motor starters and disconnect switches, wiring and conduit, except as otherwise specified: Division 16.

C. Painting, except as otherwise specified: Division 9-Painting.

D. Louvers and screens: Division 7 -Flashing and Sheet Metal.

E. Installation of access doors and plaster frames for registers and grilles: Division 9 - Finishes.

1.3 QUALITY ASSURANCE

A. General Requirements: Work shall be installed by craftsmen skilled in the trade involved and by apprentices as required by normal trade practice. Use adequate numbers of workmen and supervision as required for proper performance of the work.

B. Requirements of Regulatory Agencies:

1. Codes and Ordinances: All Work shall meet the requirements of the governing codes as listed in Division 1, GENERAL REQUIREMENTS, and the following: County of Los Angeles Public Library's Building, Mechanical, Plumbing, Fire Protection Codes, and all applicable regulations.

2. Where requirements between governing codes and regulations vary the more restrictive provisions shall apply.

3. Plan and specification requirements shall govern where they exceed code requirements.

4. Material contained in Contract Documents shall not be construed as authority to violate code requirements.

5. Permits and Inspections Charges:

C. Permits and Inspections Charges:

1. Refer to Division 1 - Summary of Work.

2. Obtain and pay for all permits and fees required for execution of work in this division.

3. Verify arrangements and permits secured by other divisions affecting the mechanical work.

4. Obtain certificates of final inspection approval from authorities having jurisdiction and submit to the Architect.

D. Service Connections:

1. Sanitary and Storm Sewer: Make all arrangements with the proper authorities and pay all required charges to connect building sewers to existing street sewers where indicated.

2. Domestic Water: Make all arrangements with the proper authorities and pay all required charges for water meter installation and connections to street main where indicated.

3. Fuel Gas: Make all arrangements with the proper authorities, and pay all required charges for gas meters and regulator installation including any excess line cost by the local gas company. Vent regulator to the outside in an approved location, subject to the approval of the Architect.

4. Fire Main: Make all arrangements with the proper authorities and pay all required charges for the fire water service main. Extend the main through the building as indicated on the drawings. Provide outside indicating valve and connect to existing street water main as indicated.

5. Removal, relocation, capping or replacement of existing utilities is an obligation of Division 2 - Site Work.

E. Substitutions: An Acceptable Manufacturers list is included in each section of this division. The base bid price submitted must be based on those manufacturers listed. Substitution of other manufacturers will be considered based on the following:

1. Prior to submission of shop drawings Contractor shall submit a list of proposed substitutions and their effect on the bid price.

2. Where investigation is required by the Architect/Engineer to determine equivalency of a substituted item, The Architect/Engineer shall submit an invoice for extra services to the Owner for reimbursement on an hourly basis. Contractor shall reimburse the Owner for this invoice. An estimate of the work required will be given to the Contractor prior to review. Reimbursement for investigative efforts shall in no way imply acceptance of the substitution.

3. When requested by the Architect/Engineer the Contractor shall furnish the following information regarding the substituted item:

   a. Manufacturer's catalog cut.

   b. Manufacturer's performance test data and procedures.

   c. Manufacturer's average annual sales volume of that line of equipment.

   d. Manufacturer's current annual financial report.

   e. A description of manufacturing methods used in producing the product.

f. A list of at least 5 recent projects utilizing the product with references that can be contacted.

g. Line by line description for being an equivalent product.

4. When the product specification includes the phrases "similar to" or "or equal" or words of similar intent, the product is specified by type and construction specification only and equivalent products may be submitted for review without following the above procedure.

5. Substitutions shall be all inclusive. No additional costs will be accepted due to changes in other equipment or materials to conform with the performance, size, or any other condition of the substituted item.

6. By submitting a substitute, Contractor waives any rights to claim a delay due to processing this substitution.

7. A substitutions request form is included at the end of this section. All requests for substitution shall be submitted on this form.

1.4 SUBMITTALS

A. Make submittals in accordance with the requirements of Division 1 and the following:

1. Material List: Six (6) copies of a complete list of material and equipment shall be submitted to the Architect within forty-five days after award of Contract. Submission shall include manufacturers name and model number, and other items necessary for identification. Include expected date of submission of shop drawings for approval.

2. First submissions of shop drawings: shall consist of two complete sets indicating the required technical information. One complete set will be returned to the Contractor.

3. Resubmittals: if corrections are required, two revised sets shall be resubmitted.

Architect/Engineer will not accept more than one resubmittal. Should additional resubmittals be required, contractor shall reimburse the Architect/Engineer on an hourly basis.

4. If no further corrections are required: submit four copies for final approval. Three prints will be stamped and returned for distribution to all parties concerned.

5. Nomenclature: shall be the same as used in the bid documents and submittals shall indicate proposed location, usage, and shall be tagged by specifications section, item number used in schedules or other identifying method used in Contract Documents.

6. Coordinate: submittals with other trades before submission.

a. For Division 15 equipment requiring electrical power the submittal shall be signed off by the Division 16 installer.

b. Ductwork and piping layout submittals shall be signed off "reviewed for coordination" by the Prime Contractor.

7. Work installed without written approval: is subject to removal and replacement with approved materials at no additional cost to the owner, or delay of job progress.

B. Refer to individual Mechanical Sections for submittals required.

C. If the equipment submitted under Division 15 requires changes in material or labor from that required in the Contract plans and Specifications, such changes shall be submitted as shop drawings.

1.5 SERVICE MANUALS AND INSTRUCTION

A. Upon completion of the installation, and as a condition of its acceptance, prepare and submit an Operating and Maintenance Manual to the Owner for approval. The Contractor shall compile the manual from information supplied by equipment manufacturers and from test and balance data furnished. Each manual shall contain:

1. Complete instructions on the operation of all mechanical equipment, including all control settings, switch positions, timer operation, set points, and throttling data.

2. Complete instructions regarding the maintenance of all mechanical equipment including periods and frequencies of all inspections, lubrications and filter replacement, etc.; type of lubricants required; and exact description of performance of such maintenance and full description of inspections and corrections to make on a step-by-step basis. Furnish a chart listing each lubricated piece of equipment, the type of oil or grease required, and recommended frequency of lubrication.

3. Copy of all As-Built controls and As-Built wiring diagrams.

4. Complete nomenclature of all replaceable parts, their part numbers, and the name and address of the nearest vendor.

5. Copy of all guarantees and warranties issued for components of the systems, showing all dates of expiration. Such dates shall not be sooner than the expiration of the completed installation guarantee specified herein.

6. Copy of the Test and Balance Report.

7. A complete index at the front furnishing immediate information as to location in the manual of all data regarding the installation. Numbered tab sheets shall be used.

8. Name, address and telephone number of the Contractor and each subcontractor employed for work under this Division.

B. All material shall be neatly typed or shall be printed material. Instructions specified shall be in continuous narrative form, not fragmented sections as prepared by individual equipment manufacturers.

C. Submit four (4) copies of manuals in binders with identification readable from the outside stating "MECHANICAL SYSTEM INSTALLATION, "County of Los Angeles Public Library, California".

1. Submit in separate, multiples of two 3-ring loose leaf binders, 2-inch size, with chrome-plated piano hinges and black hard-coated covers.

2. Small or large literature not easily inserted in binders shall each be put in heavy manila envelopes.

3. Furnish each binder with plastic enclosed tabs on reinforced paper neatly arranged. Type each of the following on a separate tab:

a. Index

b. Operating Instructions

c. Maintenance instructions

d. As-built controls & as-built wiring diagrams

e. Parts

f. Guarantees & warranties

g. Valve chart

h. Test & balance report

i. List of contractors & subcontractors

4. File under correct tabs. Clearly identify each piece of literature and envelope with equipment name and numbers.

1.6 MANUFACTURER'S DIRECTIONS

A. In all cases where manufacturers of articles used in this Contract furnish directions covering points not shown on Drawings or specified, such directions shall be followed.

1.7 DRAWINGS

A. Diagrammatic Drawings: For purposes of clarity and legibility, the Drawings are essentially diagrammatic and sizes and location of equipment are drawn to approximate scale. Contractor shall make use of all data in all of the Contract documents, and it is the Contractors responsibility to verify this information at building site.

B. Routing of Ducts and Piping:

1. Drawings indicate required size and termination of pipes and ducts and suggest proper routes of pipes and ducts to conform to the structure, to avoid obstructions and to preserve clearance.

2. It is not the intent to indicate all necessary offsets and it shall be the responsibility under this section to install ductwork and piping in such a manner as to conform to structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and make all equipment requiring inspection, maintenance and repair, accessible without further instructions or extra cost to the Owner.

C. Coordination:

1. Check with other Sections of the Specifications so that no interferences shall occur and in order that grade lines may be established for the work.

2. Installed work which interferes with the work under other Sections of the Specifications shall be removed and rerouted at the discretion of the Architect, without extra cost to the Owner.

3. Work performed under this Division shall be coordinated with the electrical services provided to verify that the proper service is provided to each piece of equipment furnished under this Division. This coordination shall occur prior to submission of shop drawings and ordering of equipment. Any field changes required to adapt equipment to an incorrect electrical service shall be done at no cost to the owner.

D. All work shall be new unless indicated otherwise.

1.8 SPARE PARTS AND SPECIAL TOOLS

A. Spare parts shall be provided to the Owner as follows and receipts obtained and included with Service Manuals.

1. Complete set of belts for each piece of equipment requiring the same.

2. Spare pilot light lamps of each type used on the project, in quantity of ten percent, but not less than two.

3. One year's supply of all expendable parts.

B. Special Tools: If any part of equipment furnished under these Specifications requires a special tool for assembly, adjustment, setting or maintenance thereof, and such tool is not readily available on the commercial tool market, it shall be furnished with equipment as a standard accessory.

1.9 PRELIMINARY OPERATION AND EMERGENCY REPAIRS

A. The Owner reserves the right to operate portions of the mechanical system on a preliminary basis or make emergency repairs without voiding the guarantee or relieving the Contractor of his responsibilities.

1.10 INSTRUCTIONS IN OPERATION

A. After all the system is in normal operating condition and all tests and adjustments have been made and the service manual has been completed and submitted for approval, furnish one or more full-time qualified personnel as necessary to put the mechanical Work in continuous operation for a period of not less than five days, during which time the designated personnel's only purpose shall be to give complete operating and maintenance instruction to the Owner's operating personnel. Furnish all service necessary for the operation and protection of the mechanical systems. Fuel, power, and other supplies required during this period will be furnished by the Owner.

1.11 JOB CONDITIONS

A. Concealed Items: Prior to covering or otherwise concealing any piping, wiring, or equipment, obtains Architect's approval. Refer to Division 1, GENERAL REQUIREMENTS.

B. Before submitting proposal each bidder shall visit the site and verify working conditions. No allowance shall be made subsequently for additional costs in this regard.

1.12 INSTALLATION OF THE WORK

A. Coordinate with the project construction schedule.

B. Coordinate with other trades to obtain proper arrangement of equipment, piping, ductwork, conduit, etc.

C. Contractor shall notify Architect of points of conflict between his work and the work of other trades, so that conflicts may properly be adjusted.

D. Work installed by this Contractor that interferes with the work of other trades shall be removed and reinstalled at the Contractors expense when so directed by the Architect.

E. Coordinate field details with other trades to avoid construction delays and maintain required clearances.

1. Furnish details and drawings of equipment base pads and anchor bolts.
2. Furnish and install all pipe sleeves and pipe support inserts before concrete is poured.
3. Furnish shop drawings showing exact locations and sizes of openings through walls, floors and roof.
4. Investigate each space through which equipment must move. Where necessary, equipment shall be shipped from manufacturer in crated sections of a size suitable for moving through restricted spaces available.

F. Installation Restrictions:

1. No piping or ductwork shall be installed in electrical rooms or closets, telephone rooms or closets, and elevator machine rooms or hoistways.
2. No piping shall be installed over or within 5 feet of transformers, substations, switchboards, motor control centers, emergency generators, or motors (except branch pipes to equipment). If piping must be run within 5 feet of these devices provide a watertight, 18 gages, stainless steel drip pan, reinforced and supported, below piping. Drain pan to spill over floor drain or sink.

G. Do not remove or damage fireproofing materials. Repair or replace damaged materials, at no extra cost to the Owner.

1.13 RECORD DOCUMENTS

A. At the beginning of construction the Contractor shall obtain and pay for a set of reproducible documents from the Architect. These documents shall be kept on the job site and any deviations from the original contract documents shall be noted on these plans as they occur. A copy of stamped & approved drawings from Building & Safety Division and other Agencies shall be kept at the job site at all times.

B. At the conclusion of the project the Contractor shall transfer the information to a formal set of plans. Reproducible copies of these "As-built" plans shall be turned over to the Owner.

C. At the conclusion of the project and in addition to Paragraph B., the Contractor shall provide "As Built" drawings both on computer disk that are in "AutoCAD" latest edition format and hard copies as part of submittals.

1.14 EQUIPMENT SUPPORTS AND SUPPLEMENTARY FRAMING

A. Furnish and install all necessary steel supports for fans, coils , tanks, receivers, piping, ductwork, and other equipment as required for a complete installation in accordance with applicable codes and as approved by the Architect. Supports shall be painted with one coat of rust-preventative paint after installation.

B. Provide supplementary framing required for attachment of hangers, supports, and anchors. Fasten supplementary framing to the structure in an approved manner. Supplementary framing shall be structural angle iron, channels, and "I" beams properly designed to carry the weight of piping and its contents, equipment, or ductwork, and to withstand any thrust exerted by the expansion and contraction of the piping and its seismic forces.

C. Submit details of all hangers, anchors, and supplementary framing including the proposed method of fastening of supplementary framing to the base building structure and all calculations used in determining the proposed fastening method.

D. All Structural Work for equipment supports and framing shall conform to the requirements of the applicable codes.

1.15 STANDARDS

A. Comply with the requirements of Division 1 - Abbreviations, Symbols and Standards.

B. Definitions:

1. This Division: A portion of the Specifications that includes all the Sections of Division 15 - Mechanical.
2. Individual Mechanical Section: Any one of the sections listed under Division 15 - Mechanical.
3. Other Divisions: The portions of the Specification that do not include Division 15 - Mechanical.
4. Concealed: Hidden from view as in trenches, chases, ceilings, or furred spaces, or exposed to view in tunnels, attics or crawl spaces that are used solely for maintenance or repair.
5. Exposed: Not concealed as defined above.
6. Riser: A vertical pipe or duct having a vertical length greater than one story height.
7. Drop: A vertical pipe or duct that does not penetrate a floor.
8. Up-feed connection: A vertical pipe or duct that penetrates a floor but has a vertical length of less than one story height.
9. Header: A pipe or duct of constant size that serves a battery of closely spaced inlet or outlet connections.
10. Piping: Includes pipe, fittings, valves, hangers, insulation, and all devices that make up the system.
11. Unfinished Space: A room or space that is ordinarily accessible only to building maintenance personnel, or a room that in the Architects Finish Schedule has exposed and unpainted construction and is specifically mentioned as "unfinished".
12. Finished Space: A room or space that is not unfinished as described above. Any space ordinarily visible to the public, including exterior spaces.
13. "Furnish" or "Provide": To supply, install, and connect up complete and ready for safe and regular operation of particular work referred to, unless specifically otherwise noted.
14. "Install": to erect, mount, and connect, complete with related accessories.
15. "Supply": to purchase, procure, acquire and deliver, complete with related accessories.
16. "Work": Labor, materials, equipment, apparatus, controls, accessories, and other items required for proper and complete installation.
17. "Wiring": Raceway, fittings, wire, boxes, and related items.
18. "Indicated", "Shown", or "Noted": As indicated, shown, or noted on the Drawings or Specifications.
19. "Similar", or "Equal": of base bid manufacturer, equal in materials, weight, size, design, and efficiency of the specified product conforming with the base bid manufacturers.
20. "Reviewed", "Satisfactory", "Accepted", or "Directed": As reviewed, accepted or directed by the Architect.

21. "Motor Controllers": Manual or Magnetic starters (with or without switches), individual push-buttons or hand-off-automatic (HOA) switches controlling the operation of motors.

22. "Control" or "Actuating Devices": Automatic sensing and switching devices such as thermostats, pressure, float, or electro pneumatic switches, and electrodes controlling operation of equipment.

C. Abbreviations: references to technical societies, trade organizations and governmental agencies are made in this division in accordance with the following:

1.	AFI	Air Filter Institute
2.	AGA	American Gas Association
3.	AMCA	Air Moving and Conditioning Association
4.	ANSI	American National Standards Institute
5.	ARI	Air Conditioning and Refrigeration Institute
6.	ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
7.	ASME	American Society of Mechanical Engineers
8.	ASPE	American Society of Plumbing Engineers
9.	ASTM	American Society of Testing Materials
10.	AWS	American Welding Society
11.	ANSI	American National Standards Institute
12.	AWWA	American Water Works Association
13.	CAO	California Administrative Code
14.	CDA	Copper Development Association
15.	1CGA	Compressed Gas Association
16.	CISPI	Cast Iron Pipe Institute
17.	EPA	Environmental Protection Agency
18.	FM	Factory Mutual
19.	FIA	Factory Insurance Association
20.	IRI	Industrial Risk Insurers
21.	MSS	Manufacturers Standardization Society
22.	NAFM	National Association of Fan Manufacturers
23.	NCPI	National Clay Pipe Institute
24.	NEC	National Electrical Code
25.	NEMA	National Electrical Manufacturers Association
26.	CFC	California Fire Code
27.	NFPA	National Fire Protection Association
28.	PDI	Plumbing and Drainage Institute
29.	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
30.	UL	Underwriters Laboratories

31. CMC California Mechanical Code (including local agency modifications)
32. CPC California Plumbing Code (including local agency modifications)
33. CBC California Building Code

PART 2 – PRODUCTS

2.1 MATERIALS

A. Electrical:

1. All motor starters, relays or other electrical components and related Work specified in the Mechanical Division shall be in compliance with Division 16, ELECTRICAL.
2. All motors shall be single phase or three-phase as indicated on the Drawings. Motor starters shall be as scheduled on the Drawings and specified. If motors, appliances or apparatus are furnished varying in horsepower and characteristics from those specified, make all required changes at no additional cost to the Owner.

2.2 MATERIALS AND EQUIPMENT

A. Wherever possible, all materials and equipment used in the installation of this work will be of the same brand of manufacture for each class of material or equipment.

B. All materials and equipment shall be new and without defects.

C. All materials and equipment located outdoors shall be suitable for outdoor installation (weatherproof). Paint on outdoor materials and equipment shall be weatherproof type. All electrical and control panels located outdoors shall have NEMA type 3R enclosure. All insulation shall be provided with weatherproof jackets.

PART 3 – EXECUTION

3.1 EXCAVATION AND BACKFILL

A. General:

1. Do all excavation and backfill required to install the work of this Division.
2. Perform all excavation and backfill outside of building perimeter in accordance with requirements specified in Division 2.

B. Excavation: Bury piping outside the building to a depth of not less than 3'-0" below finish grade unless noted otherwise.

C. Backfilling: Do not backfill without final inspection and approval for the piping installation by the Architect. Backfill material shall be as specified under pertinent Sections. Piping laid in backfill shall be supported by grade beams to prevent settlement or distortion of piping unless backfill is compacted to a minimum of 95%.

3.2 SERVICE CONTINUITY

A. All work that involves "shut-down" of existing site or building utilities or portions thereof, shall be done at such times as will cause the least inconvenience to the Owners activities, and shall be done at night, on Saturdays, Sundays, holidays, or at the discretion of the Architect. The exact time and length of "shut-down" shall be arranged for with the Architect at least fourteen (14) days but not more than thirty-five (35) days in advance of the required shut-down.

B. Once a "shut-down" has been done, the Contractor shall work continuously, around the clock, without stop until the work has been completed and the utilities have been returned to normal operation.

C. The Contractor shall include in his proposal the cost of all necessary overtime or premium time for this work. No extra payment will be allowed for overtime or premium time required to meet the "shut-down" schedule or the contract schedule.

D. Draining and refilling of existing piping systems shall be part of this contractor's work. The refill shall have the identical water treatment as in the existing system. Hot taps will only be allowed with the Architect's and Owner's approval.

3.3 PROTECTION, CARE AND CLEARING

A. Protection: Provide adequate means for, and fully protect, all finished parts of the materials and equipment against physical damage from whatever cause during the progress of this work and until completion.

B. Care: During construction, properly cap all lines and equipment nozzles so as to prevent the entrance of sand and dirt. Protect equipment against moisture, plaster, cement, paint or other work or other trades by covering it with polyethylene sheets.

C. Cleaning: After installation has been completed, the Contractor shall clean all systems as follows:

1. Ductwork, Piping and Equipment to be Insulated: Clean exterior thoroughly to remove rust, plaster, cement and dirt before insulation is applied.

2. Ductwork, Piping and Equipment to be Painted: Clean exterior of piping and equipment exposed in completed structure, removing rust, plaster, cement and dirt by wire brushing. Remove grease, oil and similar materials by wiping clean with rags and suitable solvents.

3. Motors, pumps and other items with factory finish: Remove grease and oil, and leave surfaces clean and polished.

4. Cleaning operations shall be supplemented by the additional cleaning requirements specified in other sections.

D. Trash Removal: keep site clear of packing cartons, scrap materials, and other rubbish resulting from operations under this division. Conform to Division 1.

3.4 LUBRICATION

A. Upon completion of the work and before turning over to the Owner, clean and lubricate all bearings except sealed and permanently lubricated bearings.

B. Use only lubricant recommended by the manufacturer and as listed in the Service Manual.

C. Contractor is responsible for maintaining lubrication of all mechanical equipment under his Contract until work is accepted.

3.5 PAINTING

A. Painting is specified in Division 9-"Painting."

3.6 CUTTING AND PATCHING

A. Sleeves and inserts: Provide all sleeves, inserts, and openings necessary for the installation for the Mechanical Work.

B. Openings:

1. Special forming, recesses, chases, and curbs, as necessary for the proper reception and installation of the mechanical equipment, as shown on the Drawings, will be provided in the structure under other Divisions. If additional openings are required the cost shall be an obligation of this DIVISION.

2. The Contractor shall examine all Drawings to ascertain that proper provisions have been made for the work. If such provisions are not made in time, the Contractor shall bear all extra costs incurred in later cutting and patching to accommodate this work.

3.7 CONCRETE WORK

A. General: All concrete required shall be provided under the work of Division 3 - Concrete.

B. Housekeeping Pads and Isolation Bases.

1. Furnish all required dimensional drawings for bases and pads and location thereof.

2. Furnish all embedded anchor bolts and sleeving and verify installation of same.

3.8 OPERATIONAL TESTS

A. General:

1. Before acceptance tests are performed, the Contractor shall demonstrate to the Architect that all systems and components are complete and fully charged with operating fluid and lubricants.

2. Perform operational tests on all machinery and devices to determine compliance with Specifications. Equipment shall function quietly and efficiently. Before acceptance, repair or correct piping and equipment causing noise or vibration.

3. Systems shall be operable and capable of maintaining continuous uninterrupted operational service during the operating and demonstration periods of operation.

4. All control systems shall be completely operable with calibration and setting properly set and adjusted.

5. All rotating equipment shall be in dynamic balance and alignment.

6. Specific Tests required are specified in detail in various Mechanical Sections.

B. Test and Balance:

1. Pressure tests shall be done after systems are in dynamic balance and alignment.

2. General:

a. Contractor shall notify the Architect when any test is ready to be performed. The Architect or his representative is to be present for all tests.

b. Contractor shall provide all equipment required for testing, including fittings for additional openings and all openings required inside and outside the building.

c. After the installation has been tested, or portions thereof, the Contractor shall certify in writing the time, date, name and title of the person witnessing the test. This shall also include the description of the test and the portion of the system that has been tested. The person making the test shall sign the certification.

d. A complete record shall be maintained by the Contractor of all testing that has been performed, and shall be made available at the job site to all authorities concerned.

e. Upon completion of the work, all records and certifications regarding testing requirements shall be submitted to the Architect.

f. Defective work or material shall be replaced or repaired as necessary at no additional cost to owner and the test repeated. Repairs shall be made with new materials. No caulking of screwed joints or holes will be acceptable.

g. No part of any work shall be covered or concealed until after it is inspected and tested.

h. Isolate all equipment subject to damage from test pressure, make no tests against a service valve or meter.

3. Timing of Tests: Two weeks before expected completion date, put all systems and equipment into operation and continue operation of same during each working day, but not less than five 8-hour periods, until all adjusting, balancing and testing demonstrations required have been performed.

4. Functional Tests: Any installed item not meeting the schedule or specified performance shall be removed and replaced with items whose performance is in accordance with the Drawings and Specifications at no additional costs to the Owner.

5. After all systems have been completely installed, connections made and tests completed, Contractor shall make arrangements with the Owner to operate the systems for a period of ten (10) working days during the hours of a normal working day.

6. The Contractor shall notify the Architect in writing when the operational period may start and the time for this period shall be scheduled by mutual agreement.

7. During this operation period, the Contractor shall instruct the Owner's operating personnel in accordance with written instructions of the Service Manual specified.

8. Perform tests as specified and as requested by the Architect to prove installation is in accordance with Contract requirements. Perform tests in presence of

Architect or his representative, and furnish test equipment, facilities, and technical personnel required to perform tests.

9. Additional specific Testing and Balancing requirements are specified in detail in various Mechanical Sections

3.9 SERVICES

A. General: Perform service on all Mechanical Work until the date of acceptance of completion including oiling and greasing, adjustments, cleaning, packing of seals, and other items as recommended by equipment manufacturer in the maintenance manual herein specified.

B. Air Filters:

1. Do not operate air moving equipment having air filters unless temporary filters, of similar rating to specified, are in place to protect the Mechanical Work.

2. Replace these temporary filters with specified filters before final test and balance work is begun as necessary for accurate readings. After completing the testing and balancing work, replace filters with new filter media as specified.

C. Strainers: Remove, clean and reinstall each strainer screen as specified below after systems have been flushed.

1. Clean each strainer screen after all adjustments have been made and system has operated a minimum of 24 hours, but before final test and balancing operation is started.

2. Clean each strainer again, after final test and balancing operation and before completion of the Project.

D. Purge all air from water systems after each servicing.

E. Protect all furnishings and finishes during each servicing operation and repair or replace to original condition. Those damaged as a result of servicing shall replace at the Contractor's expense.

F. Replace insulation removed or damaged after each operation. Use insulation as specified in Section 15250, MECHANICAL INSULATION.

G. Put system in full operating condition.

3.10 OBJECTIONABLE NOISE AND VIBRATION:

A. Mechanical equipment and piping system shall operate without objectionable noise and vibration, as determined by the judgment of the Architect.

B. If such objectionable noise and vibration should be produced, make necessary changes or additions required to produce satisfactory results.

3.11 CLOSING-IN OF UNINSPECTED WORK:

A. Do not allow or cause any work to be covered up or, enclosed until inspected until inspected, tested, and approved.

B. Should any work be enclosed or covered up before such inspection and test, Contractor shall, at his own expense, uncover work.

After the work has been inspected, tested, and approved; make repairs with such materials as necessary to restore his work and that of other Divisions to original and proper condition.

3.12 CLEANING:

A. After installation is complete, clean all systems as indicated below.

B. Ductwork, Piping, and Equipment to be insulated. Clean exterior thoroughly to remove rust, plaster, cement, and dirt before insulation is applied.

C. Ductwork, Piping, and Equipment to be Painted. Clean exterior to be exposed in completed structure. Remove rust, plaster, cement, and dirt by wire brushing. Remove grease, oil, and other foreign materials by wiping with clean rags and substitute solvents.

D. During Progress of Work: Carefully clean up the premises and keep all portions of the building free of debris.

E. Chrome or Nickel Plated Work: Thoroughly polish.

F. Factory Finished Items: Remove grease and oil and leave surfaces clean and polished.

3.13 INDUSTRIAL WASTE:

A. All wastes discharged to sanitary sewers or storm drains, shall comply with the requirements of the State Water Quality Resources Board, Department of Public Works and all local ordinances.

THIS IS SPACE IS INTENTIONALLY LEFT BLANK

SUBSTITUTION REQUEST FORM

TO:

ATTN:

RE:

PROJECT NO.

Gentlemen:

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

Section No.:

Specified Item:

Proposed Substitution:

Attached are complete technical data, including laboratory test reports as applicable, as required by Section 15010 of the specifications. Also included is complete information on changes to the drawings and specifications which the proposed substitution will require for proper installation.

COMPLETE THE FOLLOWING:

Does the substitution affect dimensions shown on drawings? ☐ Yes ☐ No

What affect does the substitution have on other trades?

What are the differences between the specified item and the proposed substitution?

Manufacturers guarantees for the specified and proposed items are (the same /different; see attached explanation).

The undersigned states that the function, appearance and quality of the substitution are equivalent to or superior to the specified item. The undersigned also states that he has complied with all "Bidder/Contractor Responsibilities" required by Division 1 and Section 15010:

Submitted by:

Signature
Firm

Address

Telephone
Date

For use by Architect:

☐ Accepted ☐ Not Accepted
☐ Accepted as note
By
Date
Remarks

SECTION 15047

IDENTIFICATION

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. Principal Work in this Section: Provide and install all equipment and system identification markers as indicated in the plans and as specified.

B. Related Work Elsewhere:

1. Basic Mechanical Materials and Methods.
2. Meters.
3. Mechanical Insulation.
4. Rooftop Packaged Air Conditioner.
5. Split Heat Pump Air Conditioner.
6. Ductwork and Accessories.

1.2 SUBMITTALS

A. Make submittals in accordance with Division 1.

B. Submit the following shop drawing and product data for review.

1. Valve tags.
2. Apparatus identification.
3. Labels

PART 2 – PRODUCTS

2.1 VALVE TAGS

A. Tags for plumbing service valves shall be 2" diameter brass.

B. Tags for heating, ventilation and air conditioning devices shall be 2" square brass.

C. Numbers and lettering identifying valve numbers and service shall be engraved or stamped or a combination.

2.2 APPARATUS IDENTIFICATION

2.3 Apparatus nameplates shall be black Lamacoid plates with white lettering engraved through the black layer securely attached to apparatus.

A. Equipment identification shall be embossed aluminum or engraved plastic plate securely attached to equipment.

2.4 PIPE IDENTIFICATION:

A. Piping marker shall indicate content and direction of flow.

B. Piping markers shall be construed of acrylic plastics with a pressure sensitive adhesive strip on the inside edge of each marker.

C. Markers shall conform to ANSI specifications for size and lettering

D. Similar to Setmark Pipe Marker as manufactured by Seton Name Plate Corp.

2.5 DUCTWORK IDENTIFICATION

A. Ductwork stencils shall be brass with 2" high lettering.

PART 3 – EXECUTION

3.1 GENERAL

A. All valves shall have an identification tag identifying valve number and service.

B. Secure tags to valves with plated No. 18 gauge jack chain.

C. Valves that are equipped with chain operators shall have an additional tag secured to the hook or clip that supports the swagged chain.

3.2 APPARATUS IDENTIFICATION

A. Starters, disconnects and switches provided under the work of Division 15.

B. Panel mounted instrument.

C. Panel mounted controls.

3.3 EQUIPMENT IDENTIFICATION

A. Identification shall be provided for the following types of equipment.

1. Damper motors.
2. Automatic valves.
3. Flow switches
4. Pressure switches.
5. Thermostats.
6. Carbon Monoxide Sensors.
7. Fans.
8. Air handling.
9. Water heaters.
10. Packaged Rooftop Units.
11. Split heat pumps.
12. Fire Dampers.
13. Combination Fire/Smoke Dampers.

14. Piping.

B. Equipment out of view behind access doors in unfinished rooms shall also be identified on the face of the access door.

3.4 DUCTWORK IDENTIFICATION

A. Provide identification for each type of exhaust air, supply air and return air duct by means of stenciled lettering identifying contents and direction of flow.

B. Colors: Black lettering on white background.

C. Locations: Stencil identification in hung ceiling and in equipment areas.

D. Application: Apply to clean surfaces free of dust, grease, oil or any other material which will prevent proper paint adhesion.

3.5 PIPE IDENTIFICATION

A. General:

1. All exposed and above the ceiling piping whether insulated or not shall be identified by content, size of pipe, and direction of flow indicated by means of pipe marker with flow arrows.

2. Pipe markers shall be installed near all valves on each piping system.

B. Furred Spaces: Piping installed in furred spaces will not require identification except at valve access panels where valves and piping shall be identified.

C. Pipe Markers: Piping identification markers shall be located so as to be readily visible from reasonable point of observation. Where two (2) or more pipes run parallel, the printed legend and other markers shall be applied in same relative location. All identification located at eye level, shall be along center line of the pipe; above eye level, on the lower quarter of pipe; below eye level on the upper quarter of pipes.

D. Lettering: All lettering shall comply with ANSI specifications and shall be black except where background is black, in which case white shall be used.

E. Symbols for identification shall be as scheduled on the drawings.

F. Ceiling Marker: In areas where removable tile ceilings occur, install appropriate ceiling tile markers to indicate location of valves and other equipment. Refer to Architectural Drawings and Specifications for type of tile marker and color code for each trade.

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3.6 SCHEDULES

A. Legend:

Content of Pipe	Legend	Color	Background Note
PLUMBING & SANITARY SYSTEMS			
Domestic cold water	CW	Y	#
Domestic hot water supply	HW	Y	#
Domestic hot water return	HWR	Y	#
Soil or waste	SAN	G	#
Sanitary vent	Vent	G	#
Indirect drains	Drain	G	#
Storm drain or downspout	SD	G	#
Natural gas	G	Y	#
FIRE SYSTEMS			
Fire Section	FIRE PROTECTION WATER	R	#
Drains	DRAIN WATER	R	#

Notes on Schedules: Symbol # indicates flow required.

B. Background Colors:

1. Symbol Y indicates yellow background color. (Dangerous materials)
2. Symbol G indicates green background color. (Safe materials)
3. Symbol R indicates red background color. (Fire protection equipment)
4. Symbol B indicates blue background color.

END OF SECTION

SECTION 15050

BASIC MECHANICAL MATERIALS AND METHODS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Principal work in this Section:

1. Construction, installation, materials and equipment described herein are generally common to the various sections of this Division.

2. Requirements of this Section are in addition to any similar or more comprehensive requirements in other sections of this Division.

3. Requirements of this section apply to all sections in this Division, except as may be specifically modified in those sections.

B. Related Sections:

1. All other sections in Division 15.

2. Electrical: Division 16.

1.2 QUALITY ASSURANCE

A. Standards: Comply with applicable national or local codes and standards

B. Qualifications of Manufacturer: Products used in the work of this section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a 5 year history of successful production acceptable to the Architect.

C. Qualifications of Installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section. All contractors shall have California State License as follows: HVAC and process piping installer including chilled water, heating hot water, boiler and accessories (C-4); Plumbing Contractor (C-36); Fire Protection Contractor (C-16); and Welders (C-60). Proof of licenses shall be submitted to the Owner's representative and a copy shall be provided at the jobsite construction office.

1.3 SUBMITTALS

A. Make submittals in accordance with Division 1.

B. Provide Manufacturers Descriptive Data for:

1. Electric motors.

2. Starters and disconnects.

3. Flow switches specified in Division 15.

4. Pressure switches

5. Lists of material manufacturers.

6. Flexible couplings.

7. Belt drives.

8. Coupling guards.
9. Pipe materials.
10. Valves

C. Provide Detailed Shop Drawings for:

1. Pre-wired control panels.
2. Belt guards.

D. Coordinated detail piping systems layouts.

1.4 SPECIFIC ELECTRICAL REQUIREMENTS

A. General: Except where modified by the specific requirements of an individual Section of Division 15, the electrical work required is specified in Division 16.

B. Wiring Diagrams:

1. Contractor shall provide all wiring diagrams and information needed to complete installation of electrical work.
2. Wiring diagrams shall correctly indicate conditions of this specific job and must be free from confusing methods that do not apply.
3. All wiring diagrams shall be submitted for approval.

C. Prewired Control Panels:

1. Where prewired control panels or equipment is furnished internal wiring shall extend neatly to a terminal strip which shall have the same designations for terminals that are shown on the wiring diagram.
2. Prewired panels shall be Underwriters' Laboratories, Inc. (UL) labeled.

D. Power Supply:

1. Power supply for the project is listed as 120 volts, single phase, and 277/208 volts, 3 phases.
2. Contractor shall be responsible for verifying the power requirements before ordering equipment.

PART 2 – PRODUCTS

2.1 PIPING SCHEDULES

A. General.

1. Refer to individual mechanical section for piping schedule required for each particular piping system.

B. Requirements.

1. Requirements of this section are in addition to any similar or more comprehensive requirements in other sections of this Division.
2. Requirements of this section apply to all sections in this Division, except as may be specifically modified in those sections.

3. Standards & Specifications: Conform to the current edition of the following:

Cast iron soil pipe & fittings	CS188.
Steel Pipe:	ASTM A120
Drainage fittings:	ANSI B16.12.
Hard drawn copper tubing:	ASTM B88
150# malleable-iron screwed fittings and couplings:	ANSI B16.3
300# malleable-iron screwed fittings and couplings:	ANSI B16.19
Cast iron screwed fittings:	ANSI B16.4
Cast-iron flanged fittings:	ANSI B16.1
Rubber ring cast-iron fittings:	ANSI A21.10
Wrought copper fittings and couplings:	ANSI B16.22
Hubless cast-iron soil pipe:	CISPI Standard 301-78
Cast-Iron Class 30-A fittings:	ASTM A-48

C. Acceptable Manufacturers:

1. Butterfly Valves: Crane, Lunkenheimer, Keystone, Demco, Centerline, Hammond, Victaulic, Stockham and Milwaukee.
2. Ball Valves: Jenkins, Hammond, Crane, Walworth, Lunkenheimer, and Milwaukee.
3. Gate, Globe, and Check Valves: Crane, Powell, Walworth, Lunkenheimer, Hammond, Victaulic, Stockham and Milwaukee.
4. Noiseless Check Valves: Mission, Mueller, Williams-Hager, Centerline, Victaulic, Stockham and Milwaukee.
5. Strainers: Elliot, McAlear, Mueller, Sarco, Zurn, Bailey, Victaulic.
6. Relief Valves: Bell & Gossett, Taco, Watts Regulator, Cash-Acme.
7. Welded Fittings: Bonney Forge, or equal.
8. Mechanical Couplings and Fittings: Victualic, Guston-Bacon, Stockham.
9. Flange Gaskets: Manville, or equal.
10. Motors: Allis-Chalmers, Century, General-Electric, Westinghouse, Lincoln, Gould.
11. Motors: Allis-Chalmers, Century, General-Electric, Westinghouse, Lincoln, Gould.
12. Motor Controllers: Cutler-Hammer, Square D, Allen-Bradley, Westinghouse, General Electric.
13. Thermometers: Marsh, Moeller, Palmer, Taylor, H.O. Trerice, Weksler, Weiss.
14. Draft Gauges: Dwyer, ITT Barton.
15. Hangers and Supports: Grinnell, Patterson-Kelly, Elcen, Secur Strut.
16. Test Plugs: Peterson Co., Sisco.

D. Valve Service Types:

1. Where the plan symbols indicate a specific valve type it shall be used for that service.
2. Where the plan symbols indicate a "Shut-Off" valve the following valve types may be used at the Contractors option:

a. Pipe Size below 2-1/2": Gate, ball, or butterfly.

b. Pipe Size 2-1/2" and above: Gate or butterfly.

3. Where the plan symbols indicate a "Balancing" valve the following valve types may be used at the Contractors option:

a. Pipe Size below 2-1/2": Globe or Ball.

b. Pipe Size 2-1/2" and above: Globe or butterfly.

2.2 INSTRUMENTS

A. General:

1. Thermometers, duct thermometers, pressure gages and draft gages shall be as scheduled herein.

2. Thermometers and pressure gages for temperature control shall be as specified in Section 15950 "Controls and Instrumentation".

3. Where panel mounted instruments are scheduled they need not be duplicated by pipe mounted instruments.

B. Panel Mounted Instruments:

1. Instruments shall be flush mounted type with chrome ring.

2. Features shall be as specified herein for thermometers and pressure gages.

C. Piping Thermometers:

1. Thermometers shall be Fahrenheit reading type with separate socket and stainless steel wells, installed in a threaded coupling into the pipe being measured. Provide thermally conductive gel in the well for contact with the bulb. Thermometer shall be similar to Marsh Instrument Co. Type 59.

2. Thermometers shall have 4-1/2" dial face, white with black numbers and graduations, steel case with double strength glass and nickel plated ring.

3. Movement shall be of the phosphor bronze seamless Bourdon tube type with recalibrating bushed rotary gear movement and link fitted with a black aluminum pointer.

4. Accuracy shall be + or - 1% of the total dial range. Ranges shall be such that the normal operating point with the system in service shall be in the midrange of the dial.

5. Thermometers mounted 8 ft. and higher shall have multi-angle mounting attachment with positive positioning locking device.

6. Separable sockets shall be stainless steel.

7. Remote reading thermometers shall have flexible capillary tube jacketed with a double sheath of braided copper wire.

D. Pressure Gages:

1. Gages shall be of the Bourdon tube type, similar to Marsh Instrument Co. "Quality Gage".

2. Gages shall have 4-1/2" dial face, white with black numbers and graduations, steel case with double strength glass and nickel plated ring.

3. Movement shall be of the phosphor bronze seamless Bourdon tube type with recalibrating bushed rotary gear movement and link fitted with a black aluminum pointer.

4. Accuracy shall be + or - 1% of total dial range.

5. Ranges shall be such that gage shall operate in midrange during normal operation of the system.

6. Every gage shall be provided with a 1/4" needle type valve and an impulse dampener.

7. Pressure gages for fire protection system: shall be as specified in Section 15330 - "Wet Pipe Sprinkler System".

E. Draft gages:

1. Gages shall be of the diaphragm actuated differential pressure type, similar to Dwyer Series 2000 Magnehelic.

2. Gages shall have 4-1/2" dial face, white with black number graduations and pointer.

3. Gages shall be capable of being calibrated.

4. Range shall be 0 - 2" wg and minor divisions of 0.05" wg.

5. Adjustable signal flags shall be installed on each gage.

6. Standard accessories provided with each gage shall include:

a. 2 static pressure tips with compression fittings.

b. 2 molded plastic valves with compression fittings.

c. Mounting bracket.

d. Required lengths of aluminum tubing for connection.

F. Duct Thermometers:

1. Thermometers shall be Fahrenheit reading type, similar to Marsh Instrument Co. Type 59 GD or GR.

2. Thermometers shall have 4 ½" dial face, white with black numbers and graduations, steel case with double strength glass and nickel plated ring.

3. Movement shall be of the phosphor bronze seamless Bourdon tube type with recalibrating bushed rotary gear movement and link fitted with a black aluminum pointer.

4. Accuracy shall be + or - 1% of the total dial range.

5. Thermometers shall be for bracket mounting, either direct mounting instrument with multi-angle mounting attachment with positive position locking device of remote reading type.

6. Range shall be 0 to 100 degrees F.

7. Remote reading thermometers shall have flexible capillary tube jacketed with a double sheath of braided copper wire.

2.3 INSTRUMENT PANELS

A. Panels shall be fabricated of 14 gage furniture steel over a structural frame. Framing may be omitted for panels less than 33 inches square. Nameplates identifying panel and

instruments shall be as specified in Section 15047 - "Identifications".

B. Panels shall have hinged and latched doors where access is required.

C. Finish shall be grey hammertone lacquer.

D. Panels provided as specified in Section 15950 - " Environmental Control and Energy Management Systems" shall conform to the above standards.

2.4 PIPE MOUNTED THERMOMETER SCHEDULE

Location	Range Degrees F
Hot Water Heater: inlet and outlet connection.	0 to 200

2.5 PRESSURE GAGE SCHEDULE

Location	Pressure Range
Hot water: Between suction and discharge.	0 to 160 psig
Domestic water	0 to 150 psig

2.6 TEST PLUGS

A. 1/4" or ½" NPT solid brass fitting.

B. Capable of receiving either a temperature or pressure probe of 1/8" OD.

C. With dual neoprene seal core, rated at 0 leakages, vacuum to 1000 PSIG.

D. Minimum 2" extension for insulated pipes.

E. Peterson Co. "Pete's Plugs", or equal

2.7 HANGERS AND SUPPORTS

A. General:

1. Hangers and supports shall be factory fabricated items with published load limits.
2. Hangers and supports for fire protection installation shall be in accordance with NFPA Standard No. 13.Horizontal piping: Hangers shall be of the following types:
3. For piping 4" and smaller adjustable malleable iron split ring type, similar to Grinnell Fig No. 104.
4. For piping larger than 4" adjustable steel clevis type, similar to Grinnell Fig. No. 260.
5. Rod lengths shall be adjustable.
6. Trapeze hangers may be used for parallel piping arrangements. Submit detail drawings for review.
7. Support hanger rods for both single and trapeze hangers from suitable clips, beam clamps, or joist "U" brackets.

B. Vertical piping: Clamps shall be similar to Grinnell Fig. No. 261.

C. Rods: Minimum size shall be as required by SMACNA guidelines, vibration isolators or as a minimum:

2" and smaller	3/8" Dia. rod
2-1/2" to 3-1/2" pipe	½" Dia. rod

4" to 5" pipe	5/8" Dia. rod
6" pipe	3/4" Dia. rod
8" to 12" pipe	7/8" Dia. rod

D. Sway bracing of non-resillently supported pipes: Restraints shall be malleable iron bracket and pipe end assembly, similar to Grinnell Fig. No. 296.

E. Trapeze or framing:

1. For four or less 2" pipes shall be Unistrut, F & S Control, Elcen, Kindorff Superstrut or equal. Select to support five times the weight or thrust.
2. Submit details of other types of trapeze or framing for approval.

F. Protection shield and insert sections:

1. Shields shall be 16 gage galvanized steel for all piping and shall be performed to specified radius.
2. Insert sections shall be as specified in Section 15250 "Mechanical Insulation".

G. Install metal back felt isolators under hangers of all uninsulated water piping, Trisolator S-100, Prisolator or equal.

H. Piping Support Schedule:

1. Steel Pipe

Nominal Pipe Size Inches	½	3/4	1	1 ½	2	2 ½	3	4
Maximum Span Between Single Pipe Supports Fee	5	6	7	9	10	11	12	14
Minimum Rod Size Inches	<----3/8---------->				½-->	5/8--->		

2. Copper Tubing

Nominal Pipe Size Inches	½	3/4	1	1 ¼	1 ½	2	2 ½	3	4
Maximum Span Between Single Pipe Supports Feet	5	6	7	7	8	10	11	11	12
Minimum Rod Size Inches	<----3/8---------->			½---------->			5/8--->		

2.8 SLEEVES, CORE DRILLING AND ESCUTCHEONS

A. General:

1. Sleeves shall be permanently installed type where waterproofing is required and cast-in-place or dry packed in core drilled hole where waterproofing is not required.

2. Escutcheons shall be prime coated steel or brass type as specified, except for escutcheons specified in Section 15440 - "Plumbing Fixtures".

B. Sleeves:

1. Exterior walls and floor slabs below grade: Link Seals or concrete pipe dry packed in place with annular space sealed watertight.

2. Roof slab: Cast iron sleeve with integral flashing clamp, Smith No. 1722, Josam, Zurn or equal.

3. Floor slab with waterproof membrane: Cast iron sleeve with integral flashing clamp, Smith No. 1722, Josam, Zurn or equal.

C. Escutcheons shall be as follows:

1. 6" and smaller: Prime coated steel with set screw, Beacor No. 13, F & S Manufacturing Co., or equal.

2. Larger than 6": Prime coated brass with set screw, Beacor No. 3, F & S Manufacturing Co., or equal.

3. Raised sleeves in floor slabs: Deep drawn prime coated steel or brass, F & S Manufacturing Co. Fig. 605, Beacor or equal.

D. Caulking:

1. Watertight: Products Research Co. "Rubber Caulk" No. 150 heavy type, DAP, Dow Corning, General Electric or equal.

2. Fireproofing and Sound Attenuating: Caulk with a compressible polyurethane foam strip saturated with polybutylene, Poly-tite or Compriband or equal.

2.9 FLASHING

A. Flashing shall be 4 lb. seamless lead flashing assembly with 10" skirt, steel reinforcing boot and caulk type counter-flashing sleeve.

B. Manufacturer: Flashing assembly shall be Stoneman S 1310-4, United Sheet Metal, or equal.

2.10 ACCESS PANELS

A. General: As required for complete access, minimum size 12".

B. Doors:

1. No. 13 USSG steel door and trim.

2. No 16 USSG steel frame.

3. Metal wings for keying into construction.

4. Concealed hinges, screwdriver operated stainless steel cam lock.

5. In plaster ceilings, Karp DSC-211 FRT, Milcor Steel Co., Higgens Mfg. or equal.

6. In wallboard, Karp DSC-214M, Milcor Steel Co., or equal.

C. Access tile identification: Buttons; tabs and markers to identify location of concealed work. Submit for review.

2.11 VALVE OPERATORS

2.12 PIPE WRAPPING FOR BURIED PIPING

A. Underground copper or steel piping buried directly in the soil shall be coated with asphalt

wrapped with asphalt saturated felt finished with a coat of asphalt and wrapped with an overwrap of 50 lb. Kraft paper.

B. Pipe may be wrapped with two layers half-lapped of 10 mil polyvinyl chloride tape to a total thickness of 40 mils.

2.13 FLOW CONTROL VALVES

2.14 ELECTRIC MOTORS

2.15 COUPLINGS

A. Couplings for direct drive equipment shall be flexible, self-aligning, non-lubricating type, rate at least 125% of rated motor horsepower.

B. Coupling halves shall be keyed and locked on shafts.

C. Manufacturer: Couplings shall be Fasts Standard, John E. Lisee Pump Incorporated or equal.

2.16 BELT DRIVES

A. General:

1. Belt drives shall be V-belt type with appropriate sheaves.
2. Minimum of two belts per drive.
3. Motors 7 1/2HP and smaller shall be provided with variable pitch sheaves and installed on motor slide rails.
4. Motors 10HP and larger shall have nonadjustable drive sheaves and be installed on motor slide rails.
5. Manufacturer: Sheaves and belts shall be Browning, Dodge, Gates or equal.

B. Sheaves:

1. Sheaves shall be cast iron machined and balanced.
2. Variable pitch sheaves shall be selected for midpoint of equipment operating capacity.
3. Sheaves shall be keyed and located on shafts with Allen head setscrews. On fractional horsepower motors NEMA frame size 48 smaller sheaves may be secured to shafts with setscrews only.

C. Ratings:

1. Belt drives for one and two cylinder reciprocating compressors: Minimum horsepower rating at design speed of 1.4 times the motor nameplate horsepower rating.
2. All other belt drives: On each 2 belt drive each belt shall be rated for the motor nameplate horsepower rating. On three belt or greater drives drive shall be rated for 150% of the motor nameplate horsepower rating.

2.17 GUARDS

A. General: All rotating elements on equipment shall have protective devices in accordance with the California Administrative Code Title 8, Division of Industrial Safety Orders and OSHA requirements.

B. Coupling guards shall completely enclose the rotating coupling and shall be constructed of heavy gage steel in accordance with OSHA requirements.

C. Belt Guards:

1. Guards shall totally enclose the belts and sheaves. Guards shall be fabricated of galvanized expanded metal sides, solid galvanized steel band and adequately sized galvanized angle frame.
2. Adequate room for belt adjustments shall be provided.
3. Tachometer holes with covers shall be provided for both sheaves.

PART 3 – EXECUTION

3.1 GENERAL

A. Rough-in work: Proceed as rapidly as the building construction will allow; completed, tested and approved before enclosing.

B. Conceal all piping within finished rooms unless otherwise noted on the Plans.

C. Cleaning: Thoroughly clean piping before installation. Cap all pipe openings to exclude dirt until fixtures are installed and final connections made.

D. Cut pipe accurately to measurements made on the site; bring work into place without springing or forcing and clear all windows, doors and other openings. Cutting or other weakening of the building structure to facilitate installation will not be permitted.

E. Pipe damage: Show no tool marks or threads on exposed plated, polished or enameled connections from fixtures. Tape finished surfaces to prevent damage during plastering.

F. Make all changes in direction with fittings and changes in main sizes through eccentric reducing fittings. Unless otherwise noted, install water supply piping with the straight side of eccentric fittings at the top of the pipe.

G. Pitch piping as required for proper drainage and flow and elimination of air as follows:

1. Waste.

a. 3" and smaller: 1/4 inch per foot downward towards main.

b. 4" and larger: 1/4 inch per foot downward towards main, unless it is impractical due to the depth of the main sewer to structural conditions or to the arrangement of any building or structure to obtain a scope of 1/4 inch per foot, then slope at 1/8 inch per foot per CPC code.

2. Vents: 1/3 inch per foot upwards away from fixture trap.

3. Condensate: maintain minimum horizontal slope in the direction of discharge of not less than 1/8 inch per foot.

H. Provide air vents as required for proper venting of piping systems and as minimum at all high points. Where exposed to view provide manual air vents, in concealed locations provide automatic air vents.

I. Provide swing joints, ball joints, expansion loops, Victaulic grooved end products and other devices necessary for a flexible piping system.

J. Support piping independently at pumps, coils, tanks and the like so that its weight will not be supported by the equipment.

K. Pipe all drains from pump glands, drip pans, relief valves, air vents, etc. to spill over an open sight drain, floor drain or other discharge point as approved and terminate in a plain end unthreaded pipe 1" above the drain or overflow of the receptacle.

L. Securely fasten in place to building structure all equipment, isolators, hangers, etc.

M. Provide clamps or concrete thrust blocks on all dead ends, angles, or at other points where separation may occur from hub and spigot or no-hub piping.

N. Provide unions and shut off valves located to facilitate removal of all equipment or apparatus.

O. Equipment by others: For rough-ins and final connections to equipment furnished by others, as certain exact sizes, services and locations before starting work. Verify

accuracy of work shown on drawings before starting work. The Contractor is responsible for providing proper installation.

P. Dissimilar metals: provide waterways, cast iron fittings, or flanges between all ferrous and non-ferrous materials.

Q. All piping connections to equipment shall be made with screwed or flanged unions to permit dismantling. Unions shall also be installed in the piping system to permit disassembly consistent with good piping practices and as required for the removal of connected equipment from the place of installation.

R. Sleeves, frames and wall pipes shall be furnished and installed for all pipes and ducts passing through concrete walls and floors. Special sleeves through walls and floors shall be installed in accordance with the manufacturers printed instructions and as detailed.

1. All pipe sleeves and frames for pipes through exterior floors and walls shall be black iron pipe unless otherwise noted. Sleeves and frames shall be of a size to accommodate the pipe or duct with insulation. Sleeves and frames shall be grouted in place with installation left smooth and finished to match the surrounding surface.

2. Pipes passing through exterior floors and walls below ground, 3" and larger, shall utilize ductile iron pipe unless otherwise noted or shown on the Plans. The wall pipe shall be used to conduct the liquid or gas through the wall or slab without the use of sleeves. Wall pipes shall be furnished complete with end connections and adaptors required to connect to the piping material. Size of wall pipe shall equal or exceed the maximum pipe size connected thereto. Wall pipes shall be integrally cast into the floor or wall construction and shall provide the best possible seal at the exterior exposure. Wall pipes shall be as manufactured by Clow, American Cast Iron Pipe Co., or equal.

3. Pipes penetrating fire rated walls, partitions or floors shall have the opening between the pipe and the rated construction material, or between the pipe and the sleeve, sealed with an intumescent fire barrier material as manufactured by 3M, Dow Chemical, or equal. These penetrations shall be protected by a UL Listed System approved by the Fire Marshal. Thickness of the fire barrier shall be appropriate for the fire rating of the building component.

4. Pipes passing through exterior floors and walls below grade, 2 ½" and smaller, shall utilize black iron pipe sleeves as specified for above ground in conjunction with a modular mechanical seal as follows:

   a. Seal shall consist of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall sleeve. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. Tightening of the bolts shall cause the rubber sealing elements to expand, forming a watertight seal between the pipe and the wall sleeve.

   b. The required inside diameter of the sleeve and the installation of the seal shall provide a watertight joint. Seals shall be "Link-Seal" manufactured by the

   c. Thunderline Corp. or equal (no known equal). A seal consisting of a sleeve and a pressure clamping system as manufactured by OZ Manufacturing, or equal (no known equal), is an acceptable substitute.

5. Cutting of openings and installation of sleeves and frames shall be done in a neat and workmanlike manner. Openings shall be only as large as required for installation.

6. Sleeves and frames in concealed locations and unfinished spaces such as mechanical rooms, etc., shall extend 1" from the finished surface. All other sleeves at floors shall extend 1/4" from the finished floor surface but shall allow placement of escutcheons. All other sleeves at walls shall be installed flush with finished surfaces.

7. Escutcheons shall be provided for exposed pipe through floors and walls where exposed to view and shall be chromium plated except where special escutcheons are required under plumbing fixtures. Escutcheons shall be sized to conceal the floor or wall opening and sleeve.

S. Interference: Wherever piping runs above or below ceilings, arrange the run of pipes in such a manner that it does not interfere with grilles, light outlets or lighting fixtures.

T. Valves: Valves shall be provided on all water piping wherever indicated or specified using adaptors where required. All removable or replaceable equipment shall be valved. All valves shall be securely fastened with a stamped brass metal plate, each bearing a different number as identified in the maintenance manual.

U. Openings in pipes: All openings in pipes shall be kept closed during the progress of the work.

V. Lubrication: Provide all lubrication for the operation of all equipment until completion. Run all bearings and after run in, drain and flush bearings and refill with a new oil change. Refer to maintenance manual specification for lubrication chart. Bearings that require greasing shall be greased in accordance with the maintenance manual procedure.

3.2 PIPE JOINTS

A. Copper Piping:

1. Cut square, remove burrs and clean inside of female fitting to a bright finish with steel wool, wire brush, sandpaper or emery cloth. Apply solder flux with brush to tubing. Remove internal parts of solder end valves prior to soldering.

2. Provide cast iron fittings or dielectric unions at points of connection between copper and ferrous materials.

3. All soldered or brazed joints shall be acceptable only if 100% full joint penetration of the soldering or brazing alloy is achieved.

4. All soldered or brazed joints shall comply with Section IX of ASME Boiler and Pressure Vessel Code.

B. Screwed Piping:

1. Cut with machine cutter, hand pipe cutter or Carborundum pipe wheel. Deburr with file or scraper or pipe reamer. Do not ream to exceed ID of pipe and thread to ANSI B2.1 requirements.

2. Use teflon tape on male thread prior to joining other services. No more than two full threads shall remain exposed after joining.

3. Use litharge and glycerine on joints prior to joining for air piping.

C. Brass Screwed Piping:

1. Cut threads, remove burrs and apply red lead or approved pipe dope as specified for steel piping.
2. Make up pipe with surface of chrome plated pipe and fittings.
3. Do not mark surface of chrome plated pipe and fittings.

D. Welding:

1. Before proceeding, submit for approval:
   a. Proposed procedures conforming to:
      1) ANSI B31.1, Code for Pressure Piping, Chapter V.
      2) ANSI A49.0, Safety in Welding and Cutting.
2. Field Procedures:
   a. Pipe cleaned free from rust, scale and oxide:
   b. Pipe beveled at each end: Per approved procedures.
   c. Backing rings: Hot water over 100 psi.

E. Cast Iron Piping:

1. Hubless, service weight, with stainless steel banded, hubless, coupling. F S WW-P-401, conforming to CISPI 310-85 and LAPMO 1S 6-75.
2. Plain end piping: Neoprene sleeve ASTM C-564 and stainless steel clamp

F. Grooved End Mechanical Joint Pipe: In strict accordance with manufacturers published recommendations. Mechanical joints in circulating systems may only be used where exposed in equipment rooms and similar unfinished spaces where joints are accessible.

G. Leaky Joints:

1. Remake leaky joints with new material.
2. Remove leaking section and fittings as requested by Architect and replace at the Contractors expense.
3. Do not use thread cement or caulking to make the joint tight.

3.3 ACCESS TO EQUIPMENT

A. General:

1. All piping, equipment and accessories shall be installed to permit access for maintenance.
2. Any relocation of piping, equipment or accessories required to provide maintenance access shall be accomplished by the Contractor at no additional cost to the owner.

B. Access:

1. Supply access doors where any valves, dampers, motors and equipment require access for servicing, repairs or maintenance through walls, chases, ceilings or in ductwork.
2. Contractor shall arrange for the necessary openings in the building to allow for the admittance of all apparatus

3.4 INSTRUMENTS

A. Installation of thermometers:

1. Provide extension necks for thermometers on insulated piping.
2. Locate for ease of reading and removal.
3. Install with separable sockets.
4. Where thermometers cannot be installed readily visible to view provide remote reading instruments.

B. Installation of Pressure Gages:

1. Provide extension necks for gages on insulated piping.
2. Locate for ease of reading and removal.
3. Install with shut off cocks.
4. Install one gage between the suction and discharge lines of pumps with shut off cock on each side and interconnecting piping made up with flexibility.

C. Installation of Draft Gages:

1. Provide draft gages to read differential pressure across filter banks.
2. Install static pressure tip on the upstream side in an unobstructed area to allow removal of the filters. Sensor on downstream side shall be a perforated tube traversing the filter face.

D. Installation of Duct Thermometers:

1. At a minimum provide duct thermometers at the following locations:
   a. Before and after each cooling and heating coil, handling more than 2500 CFM.
   b. In each outside air duct or plenum.
   c. In each return air and mixed air plenum.
2. Locate in a position to give the most accurate reading without obstructing filter removal.
3. Install on the exterior of air handling unit casings.

3.5 SLEEVES, CORE DRILLING AND ESCUTCHEONS

A. Sleeves:

1. Provide sleeves for all pipes that penetrate walls and floors.
2. Cast Iron sleeves: Secure waterproofing membrane under flashing clamp. Caulk annular space watertight.
3. Sleeves in floors shall extend above finished floor with annular space caulked watertight.

B. Core Drilling:

1. Core drilled holes shall be sized to allow for dry packing sleeves in place, to allow for extension of insulation through hole, and to allow for fireproofing caulking around pipes to prevent direct contact between pipes and structure.
2. Locations of core drilled holes shall be approved by the Architect prior to drilling.

C. Escutcheons: Provide escutcheons on all piping that penetrates floors, walls or ceilings where exposed to view.

3.6 UNIONS

A. Required on inlet and outlet of apparatus or equipment having screwed and soldered connections 2 inches and smaller (Union shall match piping material).

3.7 FLANGES AND GASKETS

A. Required on inlet and outlet of apparatus or equipment having screwed, welded or soldered connections 2-1/2 inches and larger. Flanges shall match piping material.

3.8 VALVES

A. General:

1. All valves shall be first quality of approved manufacture, shall allow the necessary clearances and shall be tight at the specified test pressure.
2. Each valve shall have the makers name or brand, the figure or list number, and the guaranteed working pressure cast on the body and cast or stamped on the bonnet, or shall be provided with other means of easy identification.
3. Valves shall be of the same minimum working pressure and materials as fittings specified for service except as modified herein.
4. All gate and globe valves shall be repackable under pressure. Regardless of service, valves shall not be designed for less than 125 psi steam working pressure.

B. Arrangement: Valves shall be installed in the systems so located, arranged and operated as to give complete regulation of all apparatus, equipment and fixtures.

C. Installation:

1. At a minimum provide valves in the following locations:
   a. All branches and headers of water pipe serving a group of fixtures.
   b. On both sides of all apparatus and equipment for isolation.
   c. Shutoff valves on each branch off from each risers.
   d. Shutoff valves for each main branch take off.
   e. For flushing and cleaning system.
   f. Where indicated on plans.
2. Valves shall be installed for accessibility and easy maintenance.

3.9 STRAINERS

A. General:

1. Bronze bodied strainers shall be installed in copper piping systems.
2. Blow out connections shall be provided with a valve the same size as the blowout connection.

B. Valves: blowout valves shall be gate or ball type.

3.10 FLASHING

A. Piping: Provide flashing assembly with counter flashing on each pipe passing through roof.

B. Ducts: Provide necessary counter flashing.

3.11 EQUIPMENT SUPPORTS

A. General:

1. Provide all necessary steel framing supports for piping and equipment for a complete and satisfactory installation.

2. Coat all concealed or inaccessible supports as specified in Section Division 9.

B. Approval: Submit drawings of miscellaneous supports for approval.

3.12 INSTALLATION OF ELECTRIC MOTORS

A. Electric motors which are not part of packaged assemblies shall be delivered to the location of assembly.

B. Mounting and hook-up: Refer to Division 16.

3.13 INSTALLATION OF PREWIRED CONTROL PANELS

A. General:

1. Prewired electrical control panels shall be delivered to the location of installation.

2. Installation and hook-up: Refer to Division 16.

3.14 FAN DRIVES

A. Static pressures indicated, show estimated conditions which may vary under actual conditions.

B. Necessary fan speed adjustments and drive changes to obtain specified air volume shall be made by the Contractor at no additional cost to the owner.

C. Coupling guards shall completely enclose the rotating coupling and shall be constructed of heavy gage steel in accordance with OSHA requirements.

D. Belt Guards:

1. Guards shall be supported from equipment bases or equipment with galvanized steel brackets.

2. Guards must be held rigidly in place without excessive vibration.

3.15 LUBRICATION

A. Provide means of lubricating all rotating pieces of equipment.

B. Extend all inaccessible oil and grease fittings to a readily accessible location.

C. All rotating pieces of equipment shall be lubricated prior to start-up and final acceptance.

D. A record of all equipment regarding lubrication shall be submitted to the owner.

3.16 PLUMBING PIPE TEST:

A. Perform tests to demonstrate integrity of the completed installation to the approval of the Architect and all Authorities having jurisdiction. Comply with applicable codes, specifications and standards having jurisdiction.

B. Pipe that fails as a result of the pressure tests shall be replaced at no additional cost to the Owner and the entire system shall be retested until no failure is recorded.

3.17 CHLORINATION OF SYSTEM:

A. Standard Disinfection Procedure, Domestic Water Systems: The testing procedure shall

comply with the requirements of the American Water Works Association Standard for Disinfecting Water Mains, Standard No. AWWA C651 - 86.

1. Supervision and Testing: The services of an state approved independent certified water testing lab shall supervise the disinfecting procedure, take water samples for bacteriological analysis, and when acceptable disinfection results are obtained, will issue written approval for the Architect and the Owner.

2. Contractor shall furnish labor, equipment, materials and transportation, except as specified in Paragraph 1 above, to disinfect domestic hot water, cold water systems, and fire lines directly connected thereto in conformity with procedures and standards described herein.

3. Disinfecting Agents. Only the following may be used:

   a. Chlorine gas, approved for water system disinfection when used with an approved chlorine injection system.

   b. Other types of disinfecting agents may be used only with the approval of the local Building & Safety Department and the local County Environmental Health Department.

4. Preliminary Preparation:

   a. Service Cock: Provide and install a 3/4 inch service cock or valve within three feet of the supply line for introducing the disinfecting agent into the lines.

   b. Furnishing: After final pressure tests, each fixture or outlet shall be left wide open until flow shows only clear water.

5. Procedure:

   a. All water outlets of the system being disinfected shall have signs posted on them reading "Water System Being Chlorinated - Do Not Drink" or a similar warning.

   b. With system full of water and under "main" pressure open all faucets to permit simultaneous trickle flow.

   c. Inject the disinfectant through the service cock by means of pump or other pressure device at a slow, even, continuous rate until a test of the water at each outlet shows a free chlorine residual concentration which does not exceed 100 parts per million (PPM).

   d. Close all outlets and valves, including service outlets after main, and injection cock to retain chlorinated water. Maintain this condition for 24 hours.

   e. Tests made of water at the water outlets after 24 hours, shall indicate a chlorine residual concentration of not less the 50 ppm. The disinfection procedure shall be repeated at the Contractor's expense until this standard is attained.

f. After satisfactory completion of the above tests, flush out system until orthotolidine tests at the water outlets reveal that the free chlorine residual is less the 0.5 ppm or equal to the ambient chlorine level in the water supplied by the water utility company.

6. Preliminary Approval: After completion of disinfection procedure, the testing lab may issue a temporary approval for immediate use of the piping system pending bacteriological analysis of water samples.

7. Bacteriological Standards:

a. Water samples will be collected by the certified testing lab for bacteriological tests.

b. After final flushing (Paragraph 5.f) water samples shall test negative for coliform organisms.

8. Final Approval: Upon satisfactory completion of analysis (Paragraph 7) written approval of water system disinfection results will be given to the Architect and the Owner. If the analysis results do not meet the standards, the disinfection procedure shall be repeated until the specified standards are met, at no additional cost to the County of Los Angeles Public Library.

END OF SECTION

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SECTION 15240

VIBRATION ISOLATION AND SEISMIC CONTROLS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Intent

1. All mechanical equipment, piping and ductwork as noted on the equipment schedules or in the specifications shall be mounted on vibration isolators to prevent the transmission of vibration and mechanically transmitted sound to the building structure. Vibration isolators shall be selected in accordance with the weight distribution so as to produce reasonably uniform deflections.
2. All isolators and isolation materials shall be of the same manufacturer and shall be certified by the manufacturer.
3. It is the intent of the seismic portion of this specification to keep all mechanical and electrical building system components in place during a seismic event.
4. All such systems must be installed in strict accordance with seismic codes, component manufacturer's and building construction standards. Whenever a conflict occurs between the manufacturer's or construction standards, the most stringent shall apply.
5. This specification is considered to be minimum requirements for seismic consideration and is not intended as a substitute for legislated, more stringent, national, state or local construction requirements (i.e. California Title 24, California OSHPD, Building Codes, or other requirements).
6. Any variance or non-compliance with these specification requirements shall be corrected by the contractor in an approved manner.
7. Seismic restraints shall be designed in accordance with seismic force levels as detailed in section 1.0.6.

B. The work in this section includes, but is not limited to the following:

1. Vibration isolation for piping, ductwork and equipment.
2. Equipment isolation bases.
3. Flexible piping connections.
4. Seismic restraints for isolated equipment.
5. Seismic restraints for non-isolated equipment.
6. Certification of seismic restraint designs and installation supervision.
7. Certification of seismic attachment of housekeeping pads.
8. All mechanical systems. Equipment buried underground is excluded but entry of services through the foundation wall is included. Equipment referred to below is typical. (Equipment not listed is still included in this specification).

Rooftop Units	Split Heat Pumps
Fans	Tanks
Water Heaters	Pumps

Ductwork	Starters
Conduits	Control Panels
Diffusers & Grilles	Piping
	Air compressors

C. Definitions

1. Life Safety Systems:

   a. All systems involved with fire protection including sprinkler piping, service water supply piping, water tanks, fire dampers and exhaust systems.

   b. All systems involved with and/or connected to emergency power supply including all transfer switches, transformers and all flow paths to fire protection and/or emergency lighting systems.

   c. Fresh air relief systems air handlers, conduit, duct, dampers, etc.

2. Positive Attachment:

   a. A positive attachment is defined as a cast-in anchor, a drill-in wedge anchor, a double sided beam clamp loaded perpendicular to a beam, or a welded or bolted connection to structure. Single sided "C" type beam clamps for support rods of overhead piping, ductwork, fire protection, electrical conduit, bus duct, or cable trays, or any other equipment are not acceptable on this project as seismic anchor points.

3. Transverse Bracing:

   a. Restraint(s) applied to limit motion perpendicular to the centerline of the pipe, duct or conduit.

4. Longitudinal Bracing:

   a. Restraint(s) applied to limit motion parallel to the centerline of the pipe, duct or conduit.

1.2 SUBMITTAL DATA REQUIREMENTS

A. The manufacturer of vibration isolation and seismic restraints shall provide submittals for products as follows:

1. Descriptive Data:

   a. Catalog cuts or data sheets on vibration isolators and specific restraints detailing compliance with the specification.

   b. Detailed schedules of flexible and rigidly mounted equipment, showing vibration isolators and seismic restraints by referencing numbered descriptive drawings.

2. Shop Drawings.

   a. Submit fabrication details for equipment bases including dimensions, structural member sizes and support point locations.

   b. Provide all details of suspension and support for ceiling hung equipment.

c. Where walls, floors, slabs or supplementary steel work are used for seismic restraint locations, details of acceptable attachment methods for ducts, conduit and pipe must be included and approved before the condition is accepted for installation. Restraint manufacturers' submittals must include spacing, static loads and seismic loads at all attachment and support points.

d. Provide specific details of seismic restraints and anchors; include number, size and locations for each piece of equipment.

3. Seismic Certification and Analysis

a. Seismic restraint calculations must be provided for all connections of equipment to the structure. Calculations must be stamped by a registered professional engineer with at least five years of seismic design experience, licensed in the state of the job location.

b. All restraining devices shall have a pre-approval number from recognized government agency showing maximum restraint ratings. Pre-approvals based on independent testing are preferred to pre-approvals based on calculations. Where pre-approved devices are not available, submittals based on independent testing are preferred. Calculations (including the combining of tensile and shear loadings) to support seismic restraint designs must be stamped by a registered professional engineer with at least five years of seismic design experience and licensed in the state of California. Testing and calculations must include shear and tensile loads as well as one test or analysis at 45° to the weakest mode.

c. Analysis must indicate calculated dead loads, static seismic loads and capacity of materials utilized for connections to equipment and structure. Analysis must detail anchoring methods, bolt diameter, embedment and/or welded length. All seismic restraint devices shall be designed to accept, without failure, the forces detailed in section 1.06 acting through the equipment center of gravity. Overturning moments may exceed forces at ground level.

d. Seismic restraint requirements including:

1. Seismic restraints.

2. Seismic restraint calculations.

3. Number and location of seismic restraints for each piece of equipment.

4. Specific details for restraints including anchor bolts for mounting and maximum loading at each location.

5. Provide signature of a licensed engineer for all calculations on the seismic snubbers.

e. Final inspection and report.

4. Coordination.

   a. The contractor shall coordinate his work with other trades to avoid rigid contact with the building. He shall inform other trades following his work, such as plastering or electrical, to avoid any contact which would reduce the vibration isolation.

5. Conflicts and Discrepancies.

   a. The contractor shall bring to the architect's attention prior to installation any conflicts with other trades which will result in unavoidable contact to the equipment, piping, etc., described herein, due to inadequate space, etc. Corrective work necessitated by conflicts after installation shall be at the responsible contractor's expense.

   b. The contractor shall bring to the architect's attention any discrepancies between the specifications and field conditions, changes required due to specific equipment selection, etc., prior to installation. Corrective work necessitated by discrepancies after installation shall be at the contractor's expense.

6. Inspection and Instruction.

   a. The contractor shall obtain inspection and approval from the architect of any installation to be covered or enclosed prior to such closure.

   b. The contractor shall notify the architect prior to the general installation of vibration isolation devices so that the vibration isolator manufacturer can instruct and demonstrate the technique of proper installation with the contractor's foremen.

   c. The contractor shall obtain written and/or oral instructions from the vibration isolation manufacturer as to the proper installation and adjustment of vibration isolation devices and seismic restraints.

1.3 CODE AND STANDARDS REQUIREMENTS

A. Typical Applicable codes and Standards:

1. California Building Code.

2. To the specifying engineer: Please see section 1.3 Code and Standards Requirements in the Instruction Manual for applicable codes. See section 15010.

1.4 MANUFACTURER'S RESPONSIBILITY

A. Manufacturer of vibration isolation and seismic control equipment shall have the following responsibilities:

1. Determine vibration isolation and seismic restraint sizes and locations.

2. Provide vibration isolation and seismic restraints as scheduled or specified.

3. Provide calculations and materials if required for restraint of unisolated equipment.

4. Provide installation instructions, drawings and trained field supervision to insure proper installation and performance.

5. Provide calculations by a Structural Engineer licensed in the state of California or a certified test substantiating seismic restraint capability to safely accept specified external forces without failure and to maintain equipment in captive position. Snubber shall be capable of withstanding twice the design load without any obvious deformation.

6. Provide approved resilient restraining devices as required to limit equipment and piping motion in excess of 3/8 inch.

7. For all calculations on the seismic snubbers, provide the signature of a Structural Engineer who is licensed in the state in which the work is to take place.

8. Provide final inspection report in accordance with submittal requirements of seismic restraints and vibration isolation. The report shall be signed by the engineer who signed the calculations.

1.5 RELATED WORK

A. Housekeeping Pads

1. Housekeeping pad reinforcement and monolithic pad attachment to the structure details and design shall be prepared by the restraint vendor if not already indicated on the drawings.

2. Housekeeping pads shall be coordinated with restraint vendor and sized to provide a minimum edge distance of ten (10) bolt diameters all around the outermost anchor bolt to allow development of full drill-in wedge anchor ratings. If cast-in anchors are to be used, the housekeeping pads shall be sized to accommodate the ACI requirements for bolt coverage and embedment.

B. Supplementary Support Steel

1. Contractor shall supply supplementary support steel for all equipment, piping, ductwork, etc. including roof mounted equipment, as required or specified.

C. Attachments

1. Contractor shall supply restraint attachment plates cast into housekeeping pads, concrete inserts, double-sided beam clamps, etc. in accordance with the requirements of the vibration vendor's calculations.

1.6 SEISMIC FORCE LEVELS

A. The following force levels will be used on this project. Table 1.06-1

	Building Code	"G" Forces for All Pipe, Duct & Conduit	"G" Forces for Rigidly Mounted Equipment	"G" Forces for Flexibly Mounted Equipment	"G" Forces for Life Safety Equipment either Rigidly or Flexibly Mounted
Zone	CBC	Horiz.	Vert.	Horiz.	Vert.
	BOCA	1	1	1	1
	SBCCI				

PART 2 – PRODUCTS

2.1 INTENT

A. All vibration isolators and seismic restraints described in this section shall be the product of Micro-METL, Mason Industry's or M.W. Sausse are the basis of these specifications; products of other manufacturers are not acceptable. Submittals and certification sheets shall be in accordance with section 1.2.

B. For the purposes of this project, failure is defined as the discontinuance of any attachment point between equipment or structure, vertical permanent deformation greater than 1/8 inch and/or horizontal permanent deformation greater that 1/4 inch.

2.2 VIBRATION ISOLATORS

A. General Properties

1. All vibration isolators shall have either known undeflected heights or other markings so that, after adjustment, when carrying their load, the deflection under load can be verified, thus determining that the load is within the proper range of the device and that the correct degree of vibration isolation is being provided according to the design.

2. All isolators shall operate in the linear portion of their load versus deflection curve. Load versus deflection curves shall be furnished by the manufacturer and must be linear over a deflection range 50% above the design deflection.

3. The ratio of lateral to vertical stiffness shall not be less than 0.5 or greater than 1.0.

4. The vertical natural frequency for each support point, based upon the load per isolator and isolator stiffness, shall not differ by more than + or - 10%.

5. Wave motion through the isolator shall be reduced to the following extent: Isolation above the resonant frequency shall follow the theoretical prediction based upon an undamped single degree of freedom system, with a minimum isolation of 50 decibels above 150 cycles per second.

6. All neoprene mountings shall have a shore hardness of 50 to 60 after minimum aging of 20 days or corresponding oven aging.

7. All vibration isolation equipment including but not limited to isolators, mountings, brackets, frames etc. that are exposed to moisture or an outdoor environment shall be coated as follows:

   a. All steel parts to be hot-dipped galvanized.

   b. All bolts to be cadmium plated.

   c. All springs to be cadmium plated and neoprene coated.

8. Design deflections for vibration isolators shall be as listed in the Vibration Isolation Schedule, except in the event of unacceptable levels of vibration when the equipment is in operation, due to any of the resonances of the isolated systems coupling, by coincidence, with any of the resonances of the building structure. In this event, the contractor shall bear the cost of changing the isolators to alter the natural frequencies of the isolated systems so that the amplitude of structural vibrations is reduced to acceptable levels.

B. Type and Description

1. Type MN is a molded neoprene in shear element equipped with attachment bolts and a baseplate with bolt holes to permit attachment to the building structure where required. All metal surfaces shall be neoprene covered to avoid corrosion and have friction pads both top and bottom.

2. Type HN is a suspension hanger with a steel box frame and a molded neoprene in shear element. A neoprene grommet shall be provided at the location where the hanger rod passes through the hanger box so that no metal-to-metal contact occurs.

3. Type MS is a bare, steel spring isolator, free standing and laterally stable without any housing and complete with a molded neoprene cup or 1/4 inch neoprene acoustical friction pad between the baseplate and the support. All mountings shall have leveling bolts that must be rigidly bolted to the equipment. Spring diameters shall be no less than 0.8 of the compressed height of the spring at rated load. Springs shall have a minimum additional travel to solid equal to 50% of the rated deflection. Bolt holes shall be provided in the baseplate to permit attachment to the building structure where required.

4. Type CMS is an integral structural steel bases. Rectangular bases are preferred for all equipment. Rooftop equipment and pump bases may be T or L shaped where space is a problem. Pump bases for split case pump shall include supports for suction and discharge elbows. All perimeter members shall be steel beams with a minimum depth equal to 1/10 of the longest dimension of the base. Base depth need not exceed 14" provided that the deflection and misalignment is kept within acceptable limits as determined by the manufacturer. Height saving brackets shall be employed in all mounting locations to provide a base clearance of 1". Bases shall be type WF as manufactured by Mason Industries, Inc. or M.W. Sausse type RMSPR – EQ.

5. Type HMN is a neoprene isolator incorporating a steel housing capable of resisting a seismic load of 1.0 G in all directions. The mount shall consist of a captive steel insert embedded into a neoprene element which is enclosed by a steel housing which also includes floor mounting holes. The isolator shall have a rated deflection of 0.20 inches compression, 0.175 inches in tension and 0.125 inches in shear.

MANUFACTURER'S COMPARISON

Isolator Type	Isolator Description	Mason Industries	MW Sausse
MND	Neoprene Mount Double Deflection		
HN	Neoprene Hanger	HD	HSS, HSSJ
MS	Spring Mount	SLFH	RMS
CMS	Roof Top Structural Steel Base	WF	RMSPR-EQ
HMN	Housed Neoprene Mount	BR	FUP-EQ

NOTES:

6. Availability - contact manufacturer

7. Notwithstanding this table, the manufacturer's isolator must meet all the requirements of this specification.

2.3 EQUIPMENT FRAMES

A. General

1. Mounting frames and/or brackets shall be provided to carry the load of the equipment without causing mechanical distortion or stress to the equipment.

B. Frame Types

1. Type B frame is a channel structural steel base with rectangular in shape for all equipment other than pump bases which may be "T" or "L" shaped. Pump bases for split case pumps shall include supports for suction and discharge base elbows. Pump bases for end suction pumps shall include supports for suction elbow or suction diffusers.

2. All perimeter members shall be beams with a minimum depth equal to 1/10th of the longest dimension of the base. The maximum allowable deflection of any point on the loaded frame relative to the unloaded frame shall be 0.05 inch. Height saving brackets shall be provided in all mounting locations to provide a base operating clearance of one inch.

3. Type C frame is a steel bracket or gusset welded or bolted directly to the machine frame in order to accommodate the isolator.

2.4 SEISMIC RESTRAINTS

A. Type I, Equipment Not Vibration Isolated:

1. Attach to the structure with attachments capable of resisting the forces resulting from the loading specified in Paragraph 1.04 above.

B. Type II, Vibration Isolated Equipment:

1. Mount all vibration isolated equipment on rigid steel frames as described in the vibration control specifications unless the equipment manufacturer certifies direct attachment capability.

2. Each vibration isolated frame shall have a minimum of four all directional seismic snubbers that are double acting and located as close to the vibration isolators as possible to facilitate attachment to the base and the structure.

3. The snubber shall consist of interlocking steel members restrained by snubbing material made of bridge bearing neoprene.

4. The snubbers shall contain an elastomeric one-piece bushing that is replaceable and a minimum of 1/4 inch thick. Snubbers shall be manufactured with an air gap between hard and resilient material of not less than 1/8 inch or more than 1/4 inch. Shim snubbers as required to maintain clearances.

5. The snubber end cap shall be removable for inspection of snubber internal clearances.

6. The neoprene bushing shall be capable of rotation to verify that no short circuiting of the vibration isolator exists.

C. Type III, Seismic Restraint of Vibration Isolated Suspended Piping:

1. Use a slack cable system of a minimum diameter of 1/8 inch of steel at a minimum of 40 feet on center.

2. The cable size and attachment to the pipe and structure shall be designed and signed by a structural engineer licensed in the state in which the work is to take place.

3. Provide restraints for all trapeze mounted piping where the total supported weight is greater than or equal to a 2-1/2 inch pipe, except in equipment rooms where all trapeze mounted piping weight is greater or equal to 1-1/4 inch pipe.

4. Submittal drawing shall indicate proposed method of vertical restraint.

5. Cable shall be installed with sufficient slack to avoid short circuiting the vibration isolation.

D. Type IV, Piping and Ductwork - Rigidly Supported:

1. Support all piping and ductwork systems per SMACNA "Guidelines for Seismic Restraints of Mechanical Systems and Plumbing Piping Systems".

2. Provide restraints for all trapeze mounted piping where the total supported weight is greater than or equal to a 2-1/2 inch pipe, except in equipment rooms where all trapeze mounted piping weight is greater or equal to 1-1/4 inch pipe.

3. Provide restraints for all piping 1-1/4 inch and larger located in boiler rooms, mechanical equipment rooms and refrigeration machinery rooms.

2.5 AUXILIARY STEEL

A. General: Provide auxiliary structural steel member for supports, anchors, guides, seismic restraints and vibration isolators for piping systems, where required for structural support.

B. All structural steel systems to be designed in accordance with AISC Steel Handbook.

C. All systems to be secured to building structure in a method acceptable to and approved by the project Structural Engineer.

D. Steel Work: Fabricate neatly. Grind off excess burrs and welding spatter. Paint with rust inhibitive primer.

PART 3 – EXECUTION

3.1 INSTALLATION OF VIBRATION ISOLATION DEVICES

A. General

1. Transmission of perceptible vibration or structure borne noise to occupied area by equipment installed under this Contract will not be permitted.

2. All vibration isolation devices, including auxiliary steel bases and pouring forms, shall be designed and furnished by a single manufacturer, or supplier, who will be responsible for adequate coordination of all phases of this work.

3. The vibration isolation manufacturer, or his representative, shall be responsible for providing such supervision as may be necessary to assure correct installation and adjustment of the isolators. Upon completion of the installation and after the system is put into operation, the manufacturer, or his representative, shall make a final inspection and submit his report to the Architect in writing, certifying the correctness of installation and compliance with approved submittal data.

4. The contractor shall not install any equipment or pipe which makes rigid contact with the "building" unless it is approved in this specification or by the architect. "Building" includes slabs, beams, studs, walls, lathe, etc.

5. The contractor shall provide access doors for all vibration isolators and snubbers if located above inaccessible ceilings or in shafts.

B. Equipment Isolator Installation

1. The equipment to be isolated shall be supported by a structural steel frame or by brackets attached directly to the machine where no frame is required.

2. Brackets shall be provided to accommodate the isolator and provide a mechanical stop as shown on the drawings. The vertical position and size of the bracket shall be specified by the isolator manufacturer.

3. The minimum operating clearance between the frame and the pad or floor shall be I inch.

4. The frame shall be placed in position and supported temporarily by 1 inch shims prior to the installation of the machine or isolators.

5. After the entire system installation is completed and under full operational load, the isolator shall be adjusted so that the load is transferred from the shims to the isolator. When all isolators are properly adjusted, the shims will be barely free and shall be removed. Thereafter, the shims shall be used as a gauge to check that the 1 inch clearance is maintained so that the system will remain free of stress.

C. Piping Isolator Installation-Horizontally Supported Piping

1. The objective and installation procedure is similar to the Equipment Isolator Installation procedures above.

a. The isolators shall be installed with the isolator hanger box as close as possible to the structure.

b. The isolators shall be suspended from massive beams, never from slab diaphragms between beams unless specifically approved.

c. Hanger rods shall be aligned to clear the hanger box and be plumb.

d. Load transfer isolators, when utilized, shall temporarily maintain the piping in a rigid position until installation is complete and fully loaded.

D. Piping Isolator Installation - Vertical Risers

1. Vertical pipe risers shall be fully isolated, guided by telescoping acoustical pipe guides and anchored by all directional acoustical pipe anchors. Auxiliary steel beams shall be provided as required.

2. Maximum load change on any support shall be limited to 25% of the initial load.

3. Guides and anchors shall be selected to provide restraint of horizontal pipe motion and be capable of supporting the full weight of the pipe and its water.

3.2 INSTALLATION OF SEISMIC RESTRAINTS

A. General.

1. All seismic restraints must be installed and adjusted so that the equipment and piping vibration isolation is not degraded by utilization of the restraints.

B. Equipment

1. All seismic restraints shall be anchored in place with equipment in operation for proper operating clearances.

C. Piping

1. Seismic restraint spacing shall be in accordance with hanger spacing.

2. Provide seismic restraint for all piping in equipment rooms, in shafts, and in ceilings of occupied spaces.
3. Comply with SMACNA, NFPA Pamphlet 13 and State Building Code Guidelines.
4. Compensate for thermal movement in the piping systems.

END OF SECTION

SECTION 15250

MECHANICAL INSULATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. Provide all labor, and provide and install materials and accessories for the complete installation of mechanical insulation as indicated on the Drawings and as specified.

B. Related Work Specified Elsewhere:

1. Piping
2. Ductwork

1.2 QUALITY ASSURANCE

A. Acceptable Manufacturers

1. Manville
2. Owens-Corning
3. Certain-Teed
4. Knauf

B. All insulation shall have composite (insulation, jacket or facing, and adhesive used to adhere the facing or jacket to the insulation) fire and smoke hazard ratings as tested in accordance with American Society for Testing and Materials (ASTM) E 84, National fire Protection Association (NFPA) 255, and Underwriters Laboratories (UL) 723 not exceeding:

1. Flamespread, 25
2. Smoke Developed, 50

C. Accessories such as adhesives, mastics, cements, tapes and fiberglass cloth for fitting shall have the same component rating as listed above.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery of Materials: Material shall be furnished to the Job bearing the manufacturer's label.

1.4 SUBMITTALS

A. Shop Drawings and Product Data:

1. Submittals shall conform to Division 1 of the Specification.
2. Provide Shop Drawings and Manufacturers Data for the following:
   a. All insulation materials.
   b. Acoustical duct liner.

c. Description of installation methods.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Tape: Wherever tape is used for sealing purposes, it shall be of the type and applied as recommended by the nonconductive covering manufacturer. Where recommendation is lacking, the tape used shall be sealed with Minnesota Mining and Manufacturing Company adhesive EC-1329, or equal.

B. Insulating Cement: Insulating cement shall be Owens-Corning 110 mineral wool, or equal, all-purpose cement. Where insulating cement is applied to pipe fittings in concealed locations, it shall be "one-coat" cement.

C. Pipe Insulation: Pipe insulation shall be multi-service-type suitable for all lines operating from -20 to 500 degrees F. Insulation shall be one-piece consisting of glass fibers bonded with phenolic resin and molded into a hollow cylinder covered with a factory applied vapor barrier jacket. Thermal conductivity (Btu/hr square foot degrees F./IN) shall not exceed:

At 75 degrees F. mean temperature 0.22
At 100 degrees F. mean temperature 0.23
At 200 degree F. mean temperature 0.25

D. Vapor barrier jacket shall be heavy duty all service jacket (ASJ) consisting of laminated aluminum foil, glass reinforcing and white building paper. Perm rating shall be 0.01. Vapor barrier shall form a vapor tight system.

E. Duct Blanket Insulation: Duct blanket insulation shall be glass fiber blanket with a foil facing. Thermal conductivity (Btu/hr square foot degrees F./IN) shall not exceed 0.125 at 75 degrees F. Density shall be .75 lbs. cubic foot. Facing shall be heavy duty all service jacket (ASJ) consisting of laminated aluminum foil, glass reinforcing and white building paper. Perm rating shall be 0.01.

F. Acoustical Duct Liner: Acoustical duct liner shall be flexible type using long glass fiber with smooth firmly bonded fire-resistant surface to prevent erosion of the insulation. Thermal conductivity shall not exceed .24 Btu/hr/square foot/degrees F./IN at 50 degrees F. mean temperature. Noise reduction coefficient (NRC) shall not be less than .70 based on acoustical materials test, mounting No. 6. Lining shall meet the National Fire Codes for internal duct application and shall have a minimum density of 1-1/2 pounds per cubic foot. All duct liner shall be marked with density located so as to be visible on the exposed surface of the liner. Air friction correction factor shall not exceed 1.05 at 2000 fpm and 1.2 at 4000 fpm.

G. Glass Fiber Semi-Rigid Board Insulation:

1. Glass fiber semi-rigid board insulation shall be 3 pounds per cubic foot semi-rigid board material of long glass fiber with resin binder. Thermal conductivity shall not exceed 0.24 Btu/hr square foot degrees F./IN at 75 degrees F. mean temperature.

H. Exterior Pipe Insulation Jackets:

1. Aluminum: Aluminum jacket shall be 0.016 inches thick. The Aluminum Association Type 3003 or 5005 alloys, with 3/16 inch longitudinal or circumferential corrugations.

Jacket shall have a factory-applied vapor barrier on the inside and shall be applied using aluminum straps over transverse joints. Corrugations shall match from one section of cover to the other. On vertical runs the upper cover shall lap over the lower cover and the seams shall be toward walls, horizontal seams shall be on the bottom of the run. Fitting and valve jackets shall be factory fabricated and of the same materials as the pipe jacket. Seal jacket joints and seams watertight.

2. Plastic: Provide plastic jacketing and fitting covers by Ceel-Co., 12990 West Cedar Drive, Lakewood, Colorado 80228, Manville Zeston 2000 or equal. Jacket thickness shall be 0.028 inches and shall be suitable for temperatures from minus 40 to 180 degrees F. Jacketing shall be provided with a minimum 1 inch overlap. All longitudinal and circumferential seams shall be welded together as recommended by the manufacturer. Provide Ceel-Co. Series 330 UVR (Ultraviolet Ray Resistant) or equal, PVC plastic jacketing.

I. Equipment Exteriors Requiring Vapor Barrier:

1. Glass fiber semi-rigid board insulation used where required in Schedule 15250-D,, use 3 pounds per cubic foot material of long fiberglass with resin binder. Thermal conductivity shall not exceed 4 Btu/hr/square foot/degrees F./IN at 100 degrees F. mean temperature. Impale grooved and shaped boards on pins spaced 12 inches on center and securely fasten with self-locking metal caps swabbed with vapor barrier mastic, Owens-Corning, Childers, Products or equal.

2. All insulation edges and butt joints shall be sealed with Owens-Corning, Childers Products, or equal pressure sealing tape. Insulation shall be faced with a vapor barrier jacket consisting of laminate of 0.001-inch aluminum foil and pre-sized glass cloth.

J. Premolded Pipe Fitting Covers:

1. Covers shall be factory-premolded one-piece polyvinyl chloride (PVC). Covers shall have a snow-white finish and shall withstand surface operating temperatures from 35 to 150 degrees F. continuous usage. All covers shall conform to Federal Specification L-P-535, Composition A, Type II, and shall Ceel-Co. Series 100, Certain-Teed "snap form," Zeston, or equal.

PART 3 – EXECUTION

3.1 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION

A. The insulation and materials shall be applied only by mechanics skilled at such Work. The appearance of the finished Work shall be of equal importance with its mechanical correctness and efficiency.

Insulation for heating surfaces and piping shall not be applied until such times as those surfaced have been heated to dry out the insulation. Insulation shall not be applied until the system is tested as required.

B. Installation:

1. Wherever vapor barriers are specified, all portions of the covering at joints and fittings shall be vapor sealed.
2. Insulation shall be continuous through all walls and ceilings unless otherwise specified, or shown.
3. Where insulation is to be painted, all surfaces shall be prepared to receive paint. Refer to Division 9.
4. Insulate unions, flanges, and valve bodies but not operating hand wheels or levers.
5. Insulation in crawl spaces having dirt floors shall have a vapor barrier jacket.
6. Application of all materials shall be in accordance with the manufacturer's printed instructions.
7. The insulation shall be handled in a manner that will not adversely affect its structural or insulating properties.
8. Support shall be provided for the insulation on vertical lines to prevent the insulation from slipping downward.
9. Do not place insulation over vent and drain inlets and outlets.
10. Self sealing laps shall have an additional field applied coat of adhesive applied to the opposite mating surface. Both hot and cold pipe self sealing jacket laps on longitudinal and butt joints shall be stapled at 6 inches maximum spacing for both exposed and concealed applications. On cold pipe insulation, the staples and the longitudinal and butt edges shall be sealed with mastic as indicated in the jacket manufacturer's printed recommendation.
11. Where pipe hanger rods penetrate vapor barrier, vapor barrier shall be carried up and sealed around a rod for a distance of 12 inches away from the outside of the pipe insulation.
12. Fittings and Valves:

    a. Hot pipelines (above 60 degrees F): Flanges, couplings, valves, anchors, and fittings shall be insulated with factory premolded, prefabricated or field fabricated sections of insulation of the same material and thickness as the adjoining pipe insulation.

        1) Where fiberglass insulation is specified flexible blanket insulation may be wrapped around the elbow or segments of rigid insulation may be used. When segments of rigid insulation are used, elbows shall be provided with not less than three segments. When nesting size sections of insulation are used, all voids shall be filled with insulating cement or mineral fiber. Sections of insulation shall be secured in place with wire or by joining the sections with adhesive. Insulation shall be wrapped in a PVC cover.

        2) Adhesive shall be applied over the insulation in two coats with glass cloth or tape embedded between coats. Cloth or tape shall overlap itself 1 inch and adjoining insulation jacket 2 inches.

In lieu of above finish, factory-premolded one-piece polyvinyl chloride fittings covers shall be secured by stapling, tack fastening, banding, or taping. When polyvinyl chloride fittings covers are used, factory precut blanket inserts provided by the fitting cover manufacturer may be used. Inserts shall be installed in accordance with the fitting manufacturer's printed recommendations. Insulated flanges, couplings, valves, anchors, and fittings shall be covered with preformed or field-fabricated sections of aluminum jacket secured with bands in lieu of finishes specified above.

3) When pipe insulation with factory-applied aluminum jacket is provided, flanges, valves and Fittings may be insulated with factory-or-field-fabricated sections of the same material and thickness as adjoining pipe insulation and jacket. Sections shall be secured with bands. Unless otherwise shown, unions will not be insulated and pipe insulation and jacket shall terminate neatly at the ends of unions.

4) All termination points shall be finished with a brush coat of adhesive.

13. Pipe Insulation: Pipe insulation shall be in accordance with Table LAD 15250-A attached at the end of this section. Glass fiber pipe insulation shall be used unless noted otherwise. Where piping is exposed to the weather provide an aluminum jacket. Pipe insulation shall be installed as follows: Valves and fitting jackets:

a. Valves and fitting jacket shall be in accordance with Table LAD 15250-B attached at the end of this section.

14. Duct Insulation: duct insulation shall be in accordance with Table LAD 15250-C attached at the end of this section. Glass fiber duct insulation shall be used unless otherwise noted. Where exposed to the weather provide an aluminum jacket or Childers CP-10 with Chil-Glass #10 glass cloth.

a. Fiberglass blanket insulation:

1) Flexible blanket insulation shall be wrapped around the duct with all joints lapped at least two inches, and secured with 16 gauge galvanized wire on 12 inch centers.

2) Insulation shall cover all surfaces including standing seams. Insulation shall be installed to allow maximum fullness and avoid compression.

3) The underside of rectangular duct greater than 24 inches in width shall have the insulation secured with mechanical fasteners spaced 18 inches on center.

4) Where the ductwork is noted to be vapor sealed, seal all fasteners, joints, and other breaks in the insulation with three inch wide strips of the same facing material adhered with approved vapor barrier adhesive.

b. Rigid Board Insulation:

1) Apply insulation with all ends tightly butted. Secure with mechanical fasteners spaced 18 inches or center. Where spare does not allow mechanical fasteners use adhesive.

2) Where ductwork is noted to be vapor sealed seal all fasteners, joints, and other breaks in the insulation with three inch wide strips of the same facing material adhered with vapor barrier adhesive.

MINIMUM PIPING INSULATION THICKNESS

Fluid Piping System Type	Temp. Range	Insulation Thickness for Nominal Pipe Sizes				
		1"and Less	1-1/4" to 2"	2-1/2" to 4"	6" and larger	Jacket
All Hot Water	120-200	1.0	1.5	1.5	2	All Service (ASJ)
Condensate Drain	Any	½" minimum insulation thickness				All Service (ASJ)

*18 INCHES AND ABOVE SHALL BE 1-1/2 INCHES THICK

LAD 15250 – A

VALVE AND FITTING JACKET SCHEDULE

System	Location	Jacket
Hot Water Domestic	All Concealed	Glass Cloth and Adhesive or Premolded
Hot Water Domestic	All Exposed	Premolded Cover
Rooftop Unit Condensate Drain Piping	All	Premolded Cover

LAD 15250-B

DUCT INSULATION SCHEDULE

System	Location	Insulation	Jacket
Supply Air Heating and Cooling	Concealed	Glass Fiber Blanket Insulation, 2 inch	All Srv (ASJ)
	Where indicated	Acoustical Duct Liner, 1 inch	None
	Exposed in Unconditioned Space	Rigid Glass Fiber Board Insulation, 1-1/2 inch	All Srv (ASJ)
	Exposed in Space Served	None	None
Return Air	Concealed in Uncooled or Unheated Space	Glass Fiber Blanket Insulation, 2 in.	All Srv (ASJ)
	Where indicated	Acoustical Duct Liner, 1 inch	None
	Exposed in Cooled and Heated Space	None	None
	Exposed in Uncooled or Unheated Space or Mechanical Rooms	Rigid Glass Fiber Board Insulation , 1-1/2 inch	None
	Where indicated	Acoustical Duct Liner, 1 inch	None
Supply Air Heating, Cooling and Return	Exposed Outdoors	Rigid Glass Fiber Board Insulation	Aluminum Jacket

Where acoustical duct liner is used, the duct size indicated on the Drawings shall be net inside dimensions.

LAD 15250 – C

EQUIPMENT INSULATION SCHEDULE

Heated Equipment	Insulation	Finish Cover
Domestic Hot Water.Storage Tanks	Semi-Rigid Board Insulation, 2in.	Glass Cloth
Air Conditioning Equipment Housings, Interior	Glass Fiber-Coated Semi-Rigid Board Insulation, 1 Inch	Glass Cloth with Vapor Barrier

LAD 15250 - D

END OF SECTION

SECTION 15410

PLUMBING PIPING SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Domestic cold water system.
2. Domestic hot water system.
3. Sanitary waste and vent system.
4. Roof drainage system.
5. Gas piping system.
6. Connections to fixtures and equipment.
7. Piping identification.
8. Piping testing.
9. Termination of piping systems at a point 5'-0" outside building unless otherwise indicated.

1.2 RELATED ITEMS

A. Division 02.

B. Division 05.

C. Division 15.

1.3 REFERENCES

A. ASME, "American Society of Mechanical Engineers".

B. ASPE, "American Society of Plumbing Engineers".

C. CEC, "California Energy Commission". UL, "Building Materials Directory".

D. ANSI B31.1, "Piping and Piping Systems".

E. ANSI B36.10M, "Pipe, Steel".

F. ANSI/MSS SP58, "Pipe Hangers and Supports - Materials, Design, and Support."

G. ANSI Z21.70, "Shutoff Systems, Earthquake Actuated Automatic Gas".

H. AGA, "American Gas Association".

I. ASME, "Boiler Construction Code".

J. ASTM B88, "Spec for Seamless Copper Water Tube".

K. ASTM D1527, "Spec for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80".

L. ASTM D1785, "Spec for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120".

M. ASTM D2235, "Spec for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings".

N. ASTM D2321, "Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe".

O. ASTM D2564, "Spec for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings".

P. ASTM D2661, "Spec for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Drain, Waste, and Vent Pipe and Fittings".

Q. ASTM D2665, "Spec for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings".

R. IAMPO IS 9, "Standard For the Installation of PVC Building Drain, Waste and Vent Pipe and Fittings".

S. NCPWB, "National Certified Pipe Welding Bureau".

1.4 QUALITY ASSURANCE

A. Welding Qualifications:

1. Welding of piping joints shall conform to ANSI B31.1.

2. Welders shall be certified by NCPWB or other reputable and recognized agency, using welding procedures set forth in ASME Boiler Construction Code, Section IX, and "Welding Qualifications".

B. Quality Marking: Manufacturer's name or mark shall be attached to each length of pipe, fitting, fixture, and device installed in piping systems.

C. Piping System Tests:

1. Perform tests of piping systems as specified in individual sections. Test piping before concealing.

2. Acceptance of tests performed shall not relieve Contractor from responsibility for property damage to building resulting from leaking or ruptured piping during the guarantee period. Property damage shall be promptly and properly repaired, including refinishing or replacing of damaged components or areas upon notification from Owner. This requirement shall pertain only to piping, joints, connections, equipment and workmanship represented by the systems as finally accepted, and not to those extensions or revisions that may be made by Owner during the guarantee period.

1.5 WARRANTY

A. Water Heaters: Provide seven (7) years written guarantee against leakage of tank, covering material and labor.

PART 2 – PRODUCTS

2.1 EXTERIOR UTILITIES

A. Exterior utilities will be installed under a separate contract to a point five feet outside building, unless otherwise indicated on Drawings.

B. Verify location, material and invert elevation before proceeding with work and provide fittings, offsets, and adapters necessary to make final connection to exterior utilities. Pipe materials specified in this section apply to connections to exterior utilities.

2.2 SANITARY WASTE PIPING

A. Typical service: soil, waste, vent and storm water piping.

1. Interior below grade (to 5 feet outside the building) to approximately 6-inches above grade size two inch and larger.

a. Piping: Cast iron soil – Hubless, service weight, with stainless steel banded, hubless, coupling (PF-1). F S WW-P-401, conforming to CISPI 310-85 and LAPMO 1S 6-75.

b. Fittings and traps:

1) Cast iron, soil or waste, no-hub coupling with neoprene gaskets, stainless steel corrugated shields and stainless steel clamps. F S WW-P-401, ASTM C564 and CISPI 310.

c. Piping shall have a smooth interior.

2. Six inches and more above grade.

a. Piping: 2" and larger:

1) Standard weight No-Hub cast iron soil pipe conforming to CISPI

2) Specification 301 latest revision

b. Fittings:

1) Standard weight cast iron hub conforming to ASTM A-74 with compression gaskets conforming to ASTM C-564.

2) Standard weight No-Hub cast iron soil pipe fittings conforming to CISPI Specification 301 latest revision. No-Hub couplings with neoprene gasket conforming to ASTM C-564 and a series 300 stainless steel clamp.

2.3 DOMESTIC WATER PIPING

A. Service: Potable hot and cold water. No pipe, pipe fittings, or any other fitting or fixture intended to convey or dispense water for human consumption by drinking or cooking is allowed in the domestic plumbing system, if they do not meet the low lead definition of AB 1953. Weighted average lead content of the wetted surface area of pipes, fittings and fixtures may not exceed 0.25%.

B. Pipe.

1. Above ground. Seamless Type "L", hard drawn, copper tubing, ASTM B-88.

2. I.P.S. red brass nipples for rigid connections.

3. Underground (Size 3" and smaller): Seamless Type "K", hard drawn copper tubing, ASTM B-88. Refer to 15410.

C. Fittings.

1. Wrought copper solder sweat type, ANSI B-16.22

2. Cast bronze solder sweat type, ANSI B-16, 18, shall be used only where wrought copper fittings are not available. Solder shall have no lead content, comply with AB1953.

3. Manufactured braze-to-sweat type reinforced "tap-in" fittings.

D. Unions.

1. Tubing 2" and smaller, 150 lb. cast bronze or copper, ground joint, non-ferrous seat with sweat ends.

a. Recommended Manufacturers: (or approved equal)

Nibco, Mueller, Flag-Flo.

2. Pipe: 2" and smaller, 150 lb. cast brass ground joint, brass to brass seat threaded ends.

E. Flanges: 150 lb. cast brass, flat faced, solder sweat type, ASA B-16.4, on piping 2-1/2" and larger.

F. Gaskets: 1/16" thick rubber, Manville 107, Garlock 22, or Crane 555, full faced.

G. Service valves.

1. Gate valves 2" and smaller: Class 125 SWP/200, WOG, Non-rising stem, threaded bonnet, stem material shall be ASTM B-62, bronze body malleable iron hand wheel. Valves shall meet or exceed MSS-SP 80.

a. Recommended Manufacturers: (or approved equal)

Hammond	IB 645 Threaded
	IB 647 Solder
Milwaukee	105 Threaded
	115 Solder
Stockham	B-103 Threaded
	B-104 Solder

2. Ball valves 2" and smaller. Class 150 SWP/600 WOG, two piece construction, reinforced Teflon seats, separate adjustable packing gland, blow out proof stem, chrome plated bronze ball, full port, extended cup solder end valves. Valves shall meet or exceed Federal Specification, WW-V-35, Type II, Class A, Style A, Style 3 or MSS-SP 110.

a. Recommended Manufacturers: (or approved equal)

Apollo	77-100 Full Port-Threaded
	77-200 Full Port-Solder
Hammond	8301 Full Port-Threaded
	8311 Full Port-Solder
Milwaukee	BA-125 Full Port-Threaded
	BA-155 Full Port-Solder
Watts	B-6080 Full Port-Threaded

B-6081 Full Port-Solder2-1/2" and larger:

b. A flanged ball valve shall consist of a two piece housing containing one resilient seated Teflon coated ball and one blowout proof 300 series stainless steel stem. The body shall be made of ASTM 126 class B cast iron with a cold working pressure not less than 200 psi, and capable of 125 psi working pressure at 350F. The body shall conform to ANSI B16.10 dimensions for iron and steel gate valves. The port size shall be full port on sizes ½" through 6" sizes and standard port on 8" and 10" sizes. The ball shall be made of ASTM 126 cast iron and have a Teflon coating diffused into the metal lattice and then coated on the exterior of the ball. The ball shall be seated by two reinforced Teflon seats. The stem packing shall consist of solid Teflon.

c. Flanged cast iron ball valves shall be American Valve Model 4000 or approved equal.

H. Check valves

1. Swing checks.

a. 2" and smaller: Class 125 SWP/200 WOG, swing-pattern, threaded bonnet, replaceable Teflon disc. Valves shall meet or exceed MSS-SP 80.

b. Recommended Manufacturers: (or approved equal)

Hammond	IB 940 Threaded
	IB 912 Solder
Milwaukee	509 T Threaded
	1509 Solder
Stockham	B-320 T Threaded
	B-309 Solder

I. Strainers.

1. 2" and smaller. 250 lb. Y-pattern bronze, screwed, with machined and gasketed strainer screen retainer cap.

2. Recommended Manufacturers: (or approved equal)

Bailey	100A
Mueller	H-9330

J. Mechanical shock absorbers: Bronze or stainless steel metal bellows type. Sized per Plumbing and Drainage Standard P.D.I. WH201.

2.4 GAS PIPING

A. Typical Service: Natural Gas

B. Pipe:

1. Schedule 40, black steel, ASTM A120.

C. Fittings:

1. 2" and smaller: Threaded malleable iron.

2. 2-1/2" and larger: Welded

D. Unions: Malleable iron railroad type – 250 psi brass to iron seat, ground joint.

E. Flange and Gasket:

1. Flange: 150 psi forged steel welded type.

2. Gasket: Ring type 1/16" thick of compressed fiber and special compound suitable for service intended; factory cut for 250 flange size; Durable Co. "Durable", Garlock Packing Co. "Garlock 951", or equal.

F. Gas Cocks:

1. 2" and smaller, Powell No. 2202

2. 2-1/2" and larger. Powell No. 2203 or 2207

G. Earthquake Valve:

1. The seismic sensor gas shut off that shall be provided with 3.00 inch standard flanged openings (Gaskets and eight stainless steel 5/8 inch bolts and nuts). The valve shall be fitted with one valves body built from bar stock aluminum (type 6061) to a T6 condition milled on a CNC machine. No die casting shall be used in the valve body design. The valve design will not become more sensitive if the valve becomes off centered.

2. No springs or levers will be allowed. There will be provided three O-rings made of Buna/n compound and four silicone gaskets.

3. The valve must be warranted for no less than thirty years. The valve will also be provided with one reset key composed of one steel stud milled to .3125 inches/ # 18 thread and two black plastic knobs with one ball brass insert.

4. The valves must be installed by a state licensed certified contractor for earthquake valve installation.

5. The valve shall be painted with gray enamel with an etched primer baked at 200 degrees F for two hours. The valve shall be provided with four .25 inch FNPT openings to accommodate either a .25 inch plug or two male/female .25 inch all brass gas cocks.

6. One of the gas cocks will accommodate the provided pressure when valve needs to be reset.

7. The valve shall carry the State of California Architect Certification, International Association of Plumbing Mechanical Officials Listing, Factory Mutual Approval, and Underwriter Laboratory Listing. The maximum allowable working pressure will be 60 psi and tested to five times pressure rating.

8. Valves shall be similar to Quake Master #30 C Seismic valve, KOSO or approved equal.

H. Gas Pressure Regulator:

1. Provide gas pressure regulator where indicated on drawings to reduce pressure from 1 psig to 7" water column.

a. Acceptable manufacturer: Maxitrol.

2.5 MISCELLANEOUS PIPING

A. Condensate Drain Piping:

1. Type "L" hard drawn copper.

2. PVC or ABS will be allowed within the building and/or where accepted by local codes.

2.6 UNIONS

A. Malleable Iron Unions: Malleable iron with ground joint brass to iron seat, ANSI B16.14, black or galvanized; Grinnell 463, Stockham 694.

B. Dielectric Unions:

1. Lines 1-½" and smaller: Universal insulating unions type 2000 series, style No. 3 and 4.

2. Lines 2" and larger: Insulating flanges having one brass component and one steel component as manufactured by Service Engineers, Inc., Fort Worth, Texas.

2.7 VALVES

A. General:

1. Acceptable manufacturers:

a. Apollo.

b. Crane.

c. Hammond.

d. James Bury.

e. Jenkins.

f. Lunkenheimer.

g. Nibco.

h. Phelps Dodge.

i. Powell.

j. Stockham.

k. Williams Hager.

l. Milwaukee Valve.

m. Jomar International.

n. Other manufacturers as shown on Drawings.

2. Manufacturer's name and model, figure or drawing number specified are for identification of type, quality and construction.

3. Select valves for not less than 150 lb. water working pressure at 200°F, and for compatibility with working pressure of pipe and with fittings attached. Select valves designed for installed service.

4. Valves 2" and smaller shall have screw or solder end connections. Valves 2-½" and larger shall have flange end construction.

5. Provide numbered brass valve tags on valves.

B. Valve Service Schedule:

1. Shut off valve for:

a. Cold & hot water: Ball valve 2" & smaller

b. Cold & hot water: Gate valve 2-½" & larger

C. Valves - Water :

1. Ball valve: Bronze body, two-piece type chromium plated bronze ball, lever handle, screwed or solder, Teflon seats and seal, full port, 400 lb. WOG minimum at 175°F.

ACCEPTABLE MANUFACTURER	MODEL
APOLLO	70 ORIGINAL
PHELPS DODGE	POLARIS
NIBCO	T580/T585
HAMMOND	BV711T/ BV712T
JAMES BURY	STYLE A
MILWAUKEE	BA-125/155

2. Gate valves - 2" and smaller: 125 lb bronze, solder end, solid disc, rising stem; Stockham Fig.B-109.
3. Gate valves - 2-½" and larger: 125 lb bronze, flanged end, solid disc, rising stem; Stockham Fig. B-125.
4. Check valve: Bronze body, screwed, swing regrinding seat, renewable disc, 200 lb.

ACCEPTABLE MANUFACTURER	MODEL
CRANE	36
HAMMOND	IB949
WALWORTH	3420
JENKINS	762A
LUNKENHEIMER	554Y
STOCKHAM	B345
MILWAUKEE	508
MUELLER	351M

D. Valves - Gas Service :

1. All sizes: Nordstrom lubricated plug cock with handle.
2. 3" and smaller: Consolidated "Apollo" ball valves with Teflon seat and seals, if approved by local authority.

2.8 PIPING SPECIALTIES

A. Strainers:

1. Acceptable manufacturers:
   a. Mueller
   b. C.M. Bailey
   c. Armstrong
2. Y-pattern type, cast iron or semi-steel (bronze when installed on copper or brass pipe), pressure rated for intended service.
3. Provide standard brass screen, gasketed machined flanged cap with threaded blowdown opening, valved with hose connection.
4. Provide screwed strainers for sizes 2" and smaller and flanged for 2-½" and larger. Select for minimum effective straining ratio four to one.

B. Pressure Gauge :

1. Acceptable manufacturers:
   a. Trerice.
   b. Ashcroft.
   c. U.S. Gauge.
   d. Crosby.
   e. Marsh.
   f. Weiss.
2. Bourbon-spring pressure type with non-corrosive movements, set in cast aluminum case, flared type construction.
3. Gauges shall have 4-½" dials with white background, black lines and figures, calibrated for two times working pressure.

C. Thermometers: Red reading mercury filled lens tube type with separate socket, adjustable angle style with 7" cast aluminum case; 30°F to 300°F range with 5°F maximum scale division.

D. Welding Accessories: Bonney Weldolets and Threadolets.

E. Pipe Sleeves:

1. Schedule 40 steel pipe, black or galvanized; Schedule 40 PVC; or galvanized iron sheet metal riveted to form rigid cylinder.
2. Fabricate sleeves of new material, cut square and reamed.

F. Escutcheons: Chrome plated, with raised edges to accommodate extended sleeves.

2.9 PIPING INSULATION

A. Refer to Division 15 for insulating materials for systems specified in this Section.

2.10 PIPING IDENTIFICATION

A. Refer to Division 15 for piping identification for systems specified in this Section.

2.11 DOMESTIC COLD WATER SYSTEM

A. General: Refer to Division 15 for hangers, sleeves, and other materials required.

B. Shock Absorbers: Provide shock absorbers (water hammer arrestors) at all solenoid, remote operated or quick closing valves and as shown on Drawings.

1. Acceptable Manufacturers:
   a. Smith.
   b. Josam.
   c. Zurn.
   d. Sioux Chief.
2. Provide Josam Series: No. 75000.

C. Vacuum Breakers/Backflow Preventers: Provide valves/vacuum breakers suitable for intended use and as required by governing code to prevent contamination of drinking

water supply system. See Division 15 for Fire Protection backflow prevention.

1. Acceptable Manufacturers:
   a. Ames.
   b. Apollo.
   c. Hersey.
   d. Watts.
   e. Zurn.

D. Trap Primers: (TP-1) Provide trap primers as required by governing codes to maintain trap seal at all floor drains and/or floor sinks.

1. Acceptable Manufacturers:
   a. Smith.
   b. Josam.
   c. Sloan.
   d. Zurn.

2. Provide Josam Model No. 88250 Trap Seal Primer Valve with integral vacuum breaker and gasketed access cover. Install primer valve upright according to manufacturer's recommendations.

2.12 DOMESTIC WATER HEATERS (TANK TYPE)

A. Acceptable Manufacturers (Natural Gas) :
   1. Lochinvar.
   2. Rheem.
   3. AO Smith.
   4. Bradford White Corporation.

B. General:
   1. Refer to Division 15 for hangers, sleeves, and other materials required.
   2. Size and capacity of water heaters as scheduled on Drawings and specified herein.
   3. Provide glass lined water heaters complete with fiberglass or foam insulation with steel jacket, ASME and FM approved temperature and pressure relief valve (150 psig rating with hand test lever) and safety and operating controls as required by governing codes.

2.13 DOMESTIC WATER EXPANSION TANK

A. Acceptable Manufacturers:
   1. Amtrol.

B. Provide pre-charged hydro-pneumatic steel expansion tank constructed in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code, with all welds conforming to ASME Section IX. The tank shall be stamped with a maximum working pressure of 150 psi. All internal wetted parts must comply with FDA regulations and approvals and be suitable for potable water systems. An internal diaphragm shall be used to isolate air charge from water.

C. Model number and size as indicated on plans.

D. For tanks, suspend tank from structure as recommended by manufacturer.

1. Coordinate with General Contractor.

2.14 SOIL AND WASTE SYSTEM FIXTURES

A. Floor Drains and Floor Sinks (FD-1/FS-1):

1. Acceptable Manufacturers:

a. Mifab.

b. JR Smith.

c. Wade.

d. Watts Drainage Products.

e. Zurn.

2. Provide heavy cast iron drains as scheduled on drawings.

B. Cleanouts:

1. Provide cleanouts with access covers.

a. Approved Josam models:

1) Finished floor - Series 56000 Nickaloy top.

2) Wall - Series 58600-2 chrome plated.

3) Unfinished floor and under carpet - Series 56040-2 bronze.

4) Tiled floor - Series 56020 square Nickoloy top.

2. Provide carpet markers at floor cleanouts where carpet will be installed.

3. Unfinished Areas: Provide cleanout tee and plug of same material as piping.

C. General: Refer to Division 15 for hangers, sleeves, and other materials required.

D. Traps: Provide "P" traps as required in fixture drains, floor drains without integral traps, and other points indicated on Drawings or as required by local codes. Provide traps of same material as lines in which they are installed.

2.15 RAINWATER CONDUCTORS

A. Below Grade: Provide one of the following in accordance with local codes.

1. Centrifugally cast service weight cast iron with lead oakum joints, neoprene compression joints, or M.G. coupling with stainless steel bolts.

2. Schedule 40 PVC piping with a minimum stiffness of 25 (PS25), with solvent welded joints.

B. Above Grade: Provide one of the following in accordance with local codes.

1. Cast iron soil pipe with lead and oakum or neoprene compression joint.

2. Schedule 40 galvanized steel with cast iron drainage fittings.

3. No-hub type cast iron pipe and jointing system.

4. Schedule 40 PVC piping with a minimum stiffness of 25 (PS25), with solvent welded joints.

PART 3 – EXECUTION

3.1 DOMESTIC COLD WATER SERVICE INSTALLATION

A. Cold Water Service:

Provide underground water main extensions from Site water main as shown on Drawings, to inside building. Install with a depth of cover as recommended by local practice and governed by codes. Depth of cover (measured from top of pipe) shall not be less than 3'-6". Coordinate connection, exact location, and elevation of Site water main, and make connection to water main termination point.

B. Distribution:

1. Provide water distribution system inside building including connection to plumbing fixtures, and equipment as indicated.
2. Connect cold water to Owner-supplied equipment in locations indicated. Provide shut-off valves at equipment connections.
3. Provide an isolation valve at the inlet and a union at the outlet of pressure reducing valves.

3.2 DOMESTIC HOT WATER SERVICE INSTALLATION

A. Provide a complete domestic hot water system including water heaters and connection to plumbing fixtures and equipment as indicated on the Drawings.

B. Pipe temperature/relief valves on water heaters to nearest floor drain.

C. Connect hot water to Owner-supplied equipment in locations indicated. Provide shut-off valves at equipment connections.

D. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points within the upper one-third and lower one-third of its vertical dimension. At lower point, a minimum distance of four inches shall be maintained above the controls with the strapping.

3.3 PIPING INSTALLATIONS

A. Provide pipe anchors and guides where needed to prevent excessive movement of piping and excessive strain on piping and equipment connections. Provide expansion loops and offsets in piping as required to prevent excessive strain or pipe displacement between anchors, at piping take-off, and at equipment connections.

B. Connect piping to apparatus and equipment with flanges, unions, and similar devices to permit easy removal. Provide unions on inlets and outlets of apparatus and equipment having screwed or soldered connections, 2" and smaller.

C. Isolate dissimilar metal piping materials using dielectric unions, except where valves are used. Isolate copper piping from ferrous building elements with plastic tape.

D. Install valves where required and as indicated on Drawings for the control, operation and maintenance of mechanical equipment and systems. Install valves ahead of control valves and as service valves for mechanical apparatus and fixtures to permit maintenance of the same without shutting down the service of the piping systems in the building. Valve each domestic water branch at the main, except at plumbing fixtures having integral stops. Coordinate location of access panels to service valves and equipment in concealed locations with appropriate trades.

E. Install manual drain valves at every low point of water systems. Drain valves with threaded hose connection shall be ¾" size. Verify exact location of drain valves and receive approval from OSR prior to installation.

F. Install piping specialties where indicated on Drawings. Mount thermometers on water heater outlet at convenient height for reading.

G. Install pressure gauge connected to its respective pipeline, and located where shown on Drawings by means of suitable brass pipe and fittings containing a brass cock. Install shutoff valve ahead of each gauge.

H. Where welded pipe connections are allowed, Bonney "Weldolets" or "Threadolets" may be used in place of welding tees.

I. Ream piping up to 2" inclusive after cutting.

J. Blow out piping sections with compressed air or otherwise clean internally immediately prior to installation into pipe line.

K. Cap or cover open piping during erection to prevent entry of foreign material.

L. Install water shock absorbers where indicated on Drawings and where necessary to prevent water hammer.

3.4 SOIL AND WASTE SYSTEM INSTALLATION

A. Provide a complete continuous waste and vent plumbing system as shown on the Drawings.

B. Work includes, but is not limited to the following:

1. Building sanitary sewer, extended to point indicated outside building, to join site sanitary sewer line shown on site utility plan. Verify connection point, invert elevation and pipe material before proceeding and make necessary adjustments to accomplish connection.

2. Install continuous waste and vent system.

3. Connect waste and vent piping to plumbing fixtures, appliances, Owner-supplied equipment in Food Service, and other locations indicated.

4. Provide soil, waste, and drain pipe cleanouts at foot of stacks, at every change in direction, where indicated on Drawings, and as required by governing codes.

C. Floor Drains, Funnel Drains and Floor Sinks:

1. Set floor drains with strainer top level with finished floor surface. Verify floor finishes and elevations with Architectural Drawings and Specifications before commencing work.

D. Vents:

1. Provide 4" diameter vent pipe from a point 12" below roof where 4" roof penetrations are required. Provide single counter flashing over flashing sleeve and pipe with adjustable clamp to provide tight closure over sleeve.

2. Locate vents, cut holes in roof deck and furnish flashing sleeve to roofing trade before roofing work is started.

3.5 ROOF DRAINAGE SYSTEM INSTALLATION

A. Provide a complete roof drainage system as shown on the Drawings. Work includes, but is not limited to, the following:

1. Install roof drains as detailed on Architectural Drawings. Flash with 4 lb. lead or 0.040" chloraloy membrane flashing.

2. Install cleanouts for horizontal and vertical conductors as required by governing code.

3.6 GAS PIPING SYSTEM INSTALLATION

A. Provide a complete gas piping system as shown on Drawings. Work includes, but is not limited to, the following:

1. Pressure gas service from gas meter to gas fired appliances as shown. Installation of low pressure gas service line from roof to gas fired equipment inside building.
2. Provide steel sleeves as specified in Division 15 for installation of gas service line where indicated and as required by governing code.
3. Gas piping arrangements shall allow for movement in seismic zones.
4. Electrically isolate the building distribution system from underground ferrous gas piping with a U.L. listed dielectric fitting installed a minimum of 6" above grade.
5. An appropriate joint compound (pipe dope) shall be applied sparingly and only to the male threads of metallic joints. Compounds shall be resistant to the action of liquefied petroleum gas.
6. Install automatic shutoff valve on the building exterior after the meter in accordance with manufacturer's instructions.

3.7 CONDENSATE DRAINS - FROM AIR CONDITIONING UNITS

A. Connect drain piping from drain pan of air conditioning unit to condensate disposal location indicated. When coil or unit housing is shock or vibration isolated, connection shall be furnished through a flexible connector not less than 10 inches long. Drain line shall pitch to flow out at not less than one inch in 8 feet. Drain line size shall be per UPC (3/4 inch up to 3 ton only). Drain line shall not be reduced smaller than unit outlet connection.

B. Condensate drain piping installed within building whether in air conditioned space or not shall be insulated. Refer to section 15080: mechanical insulation, for type of material required.

3.8 FIELD QUALITY CONTROL

A. General:

i. Contractor shall test piping systems after erection and before concealing or covering. Test as required by code and as specified herein. Materials or workmanship found faulty shall be immediately replaced or repaired and sections or systems re-tested.

ii. Perform tests in the presence of governing authorities and OSR;

iii. Submit certificates to OSR that tests have been satisfactorily completed.

B. Plumbing Tests:

i. Plumbing tests shall be not less than the following:

ii. Test water pipes at a pressure at least 50 psig higher than normal working pressure, but in no case at a pressure less than 125 psig, for a period of 2 hours.

iii. Sanitary, storm and vent pipes, air pressure of 5 psig for a period of 15 minutes.

iv. Perform final air test when plumbing work is finished, according to governing code requirements.

v. No plumbing system, or part thereof, shall be covered or concealed until such work receives approval of OSR and governing authorities requiring tests.

C. Gas Piping: Provide an air test at 100 psig for eight hours.

D. Water Piping Sterilization: Upon completion of the cold and hot water systems, sterilize systems with chlorine before placing in operation. Provide a chlorine dosage of not less than 50 parts per million. Following a contact period of not less than 24 hours, flush chlorinated water from the system with clean water until residual chlorine content is not greater than 0.02 parts per million. Valves in water lines being sterilized shall be opened and closed several times during the sterilization period. Comply with governing code requirements.

END OF SECTION

SECTION 15440

PLUMBING FIXTURES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plumbing fixtures and trim for the following items:

a. Water closets.

b. Lavatories.

c. Sinks.

d. Service Sinks.

e. Hose bibs and Wall Hydrants.

1.2 RELATED ITEMS

A. Division 07.

B. Division 15.

C. Division 16.

D. Owner-supplied food service equipment and other fixtures are indicated on Drawings.

1.3 REFERENCES

A. ANSI A112.6.1M, "Supports for Off-the-Floor Plumbing Fixtures for Public Use".

B. ANSI A112.19.1M, "Finished and Rough Brass Plumbing Fixture Fittings".

C. ANSI A112.19.2M, "Vitreous China Plumbing Fixtures".

1.4 QUALITY ASSURANCE

A. Provide products of same manufacturer for each product type specified throughout.

B. Provide vitreous ware fixtures of best quality, close grained and free from pores. Warped or imperfect fixtures will not be accepted. Surfaces coming into contact with walls, floors, or surface of other fixtures shall be ground true.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Fixtures:

1. American Standard.
2. Church.
3. Crane.
4. Eljer.
5. Elkay.
6. Fiat.
7. Just.
8. Kohler.

B. Fixture Trim:

1. Chicago Faucet.
2. Delta Faucet Co.
3. Elkay (Fixture F-4 only).
4. Grohe.
5. Moen.
6. Sloan.
7. Sperzel.
8. T & S Brass.
9. Zurn.
10. Symmons

C. Fixture Carriers:

1. Josam.
2. Smith.
3. Wade.
4. Watts (Ancon)
5. Zurn.

D. Hose Bibs and Wall Hydrants:

1. Chicago Faucet.
2. Woodford.
3. Acorn

2.2 FIXTURE SCHEDULE

A. WATER CLOSET (FIXTURE WC-1)

1. Zurn Z5344, wall mounted vitreous china elongated bowl, 1.28 GPF capacity, top-spud.

2. Flush Valve: Zurn ZS6000AV-HET, manual flush valve.

3. Toilet Seat: Olsonite 95SSC, extra elongated open front seat with check hinge, less cover with anti-microbial agent.

4. Install per accessibility requirement

B. LAVATORY (FIXTURE L-1)

1. Zurn #Z5114, countertop, vitreous china, with overflow, ADA compliant, adjustable p-trap with tubing outlet.

2. Faucet: Zurn #Z86100-XL-CP4-25M, manual metered faucet, 0.35GPM.

C. LAVATORY (FIXTURE L-2)

1. Zurn Z5344, wall-hung vitreous china, with overflow, ADA compliant, adjustable p-trap.

2. Faucet: Zurn #, Z86100-XL-CP4-25M, manual metered faucet, 0.35GPM.

D. SINK (FIXTURE S-1)

1. Single Bowl Sink: 18-gauge type 304 stainless steel cantilered countertop with marine edge, seamless trash opening, bar size seamless sink, slope drain board to sink, ADA compliant.

2. Faucet: Zurn Z871B4-XL-3F.

E. SINK (FIXTURE S-2)

1. Double Bowl Sink: 18-gauge type 304 stainless steel cantilered countertop with marine edge, seamless trash opening, bar size seamless sink, slope drain board to sink, ADA compliant.

2. Faucet: Zurn Z871G4-XL-3F.

3. Garbage Disposer: In-Sink-Erator evolution, ¾ Hp

F. WALL HYDRANT (FIXTURE HB-1)

1. Acorn model 8151-SSLF with vacuum breaker with ¾" hose end, chrome plated.

G. WALL HYDRANT (FIXTURE HB-2)

1. Acorn model 8104-SSLF with vacuum breaker with ¾" hose end, chrome plated. Recessed Wall box. Verify length with architectural wall thicknesses.

2.3 CARRIERS

A. Water Closets: Josam 11000 or 12000 series, cast iron with adjustable closet connection and all fittings and extensions required to fit plumbing chases as shown on drawings. Provide for high rough-in for handicapped water closet as indicated.

B. Lavatories: Josam 17100 series, floor mounted single lavatory with concealed arms.

2.4 JOINT SEALANTS

A. SLNT-4 as specified in Division 07.

PART 3 – EXECUTION

3.1 FIXTURE INSTALLATION

A. Set fixture in place, and properly connect to waste, vent and water pipes. Install rigid, plumb, level and true. At heights indicated on architectural elevations.

B. Install carriers for all fixtures according to manufacturer's recommendations.

C. Fixture Bolts: Hang wall fixtures with 5/16" brass bolts of sufficient length to securely fasten fixture to backing. Provide chrome plated exposed heads.

D. Provide correctly faced inlets for fixtures. Extend branches of soil, waste, and vent pipe as close to fixture as possible. Grade branches of vent pipes to trap. Support and anchor as specified in Division 15.

E. Connect fixture wastes, other than water closets and trap standard fixtures, to waste lines with iron ferrule and threaded pipe. Make connections to water closets and trap standard fixtures with approved inlet fittings, correctly located according to the size and type of fixture to be connected.

F. Anchor flush valves for water closets and urinals completely shake-proof in walls. Where copper straps are used to anchor piping to steel wall studs, isolate strap with plastic tape.

G. Provide chrome plated angle supplies with female nominal pipe thread (FNPT) inlets and angle supplies with loose key stops in water supplies to water closets, lavatories, and sinks with exposed supplies. Where water supplies are concealed in accessible cabinet work, the piping may be copper and the stops shall be wheel handle type.

H. Adjust hot water limit stops on lavatory faucets to a maximum hot water discharge temperature to 105°F.

I. Insulate exposed waste, hot, and cold water connections at all handicapped lavatory fixtures.

J. Refer to Division 15 for insulation type, thickness, and method of installation.

3.2 CAULKING

A. Caulk around plumbing fixtures with white colored SLNT-4 joint sealant.

END OF SECTION

SECTION 15850

AIR HANDLING

PART 1 – GENERAL

1.1 DESCRIPTION

A. Principal Work in this Section: Provide and install fans and air handling units as shown on the drawings and as specified.

B. Related Work Specified Elsewhere:

1. Motors and Drives.
2. Ductwork.

1.2 QUALITY ASSURANCE

A. Acceptable Manufacturers:

1. In-line cabinet Fans:
   a. Greenheck
   b. Penn
   c. Cook

B. All fans shall be tested and rated in accordance with Air Movement and Control Association (AMCA) Standard 210. Fans shall bear the AMCA label.

1.3 SUBMITTALS

A. Make submittals in accordance with Section 01340 of the Specifications.

B. Submit Shop Drawings and Manufacturers Data for the following:

1. Centrifugal cabinet type, fans.
   a. Submit complete fan performance curves marked to indicate selection points for proposed fans. Data submitted shall also include sound power levels in all octave bands.

PART 2 – PRODUCTS

2.1 CEILING EXHAUST AND INLINE CABINET FANS

A. Ceiling exhaust fan and cabinet shall be constructed of galvanized steel, fully lined with ½ inch fiberglass insulation, adjustable mounting brackets for ceiling installation, discharge horizontal or vertical, with outlet back draft damper and ceiling grille.

B. Inline cabinet fan shall be constructed of galvanized steel fully lined with ½ inch fiberglass insulation, inlet suitable for duct connection, adjustable discharge horizontal or vertical, and supports.

C. Fan shall be forward curved with 120 volt motor fully pre-wired. Unit shall be UL listed and AMCA certified.

D. Ceiling exhaust fan shall be similar to Greenheck Model SP or approved equal. Inline cabinet fan shall be similar to Greenheck Model CSP or approved equal.

2.2 ROOF MOUNTED POWER EXHAUST VENTILATORS

A. RMEV-1

1. Manufacturer: Fan shall be model ACEB as manufactured by Loren Cook Company, Greenheck GB Series, Carnes VEBK Series, or equal.

2. Spun aluminum, roof mounted, belt driven, downblast centrifugal exhaust ventilator, with components as indicated and specified. Sizes, performances, and accessories shall be as indicated on equipment schedules on Drawings. Provide required accessories for proper operation and balancing of fans in accordance with design intent and sequence of operation.

3. Certification: Fan shall be listed by Underwriters Laboratories Inc (UL 705) and ETL listed for Canada. Fan shall bear AMCA Certified Ratings Seals for Fan Sound and Air Performance.

4. Housing: The fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. The spun aluminum structural components shall be constructed of minimum 16 gage marine alloy aluminum, bolted to a rigid aluminum support structure. The aluminum base shall have continuously welded curb cap corners for maximum leak protection. The discharge baffle shall have a rolled bead for added strength. A two piece top cap shall have stainless steel quick release latches to provide access into motor compartment without use of tools. An integral conduit chase shall be provided through curb cap and into motor compartment to facilitate wiring connections. The motor, bearings and drives shall be mounted on a minimum 14 gage steel power assembly, isolated from unit structure with rubber vibration isolators. These components shall be enclosed in a weather-tight compartment, separated from exhaust airstream. Lifting lugs shall be provided to help prevent damage from improper lifting. Unit shall bear an engraved aluminum nameplate and shall be shipped in ISTA Transit Tested Certified packaging.

5. Wheel: Wheel shall be centrifugal backward inclined, constructed of 100 percent aluminum, including a precision machined cast aluminum hub. Wheel inlet shall overlap an aerodynamic aluminum inlet cone to provide maximum performance and efficiency. Wheel shall be balanced in accordance with AMCA Standard 204, Balance Quality and Vibration Levels for Fans.

6. Motor: Motor shall be heavy-duty type with permanently lubricated sealed ball bearings and furnished at specified voltage, phase, and enclosure.

7. Bearing: Bearings shall be designed and individually tested specifically for use in air handling applications. Construction shall be heavy duty regreasable ball type in a cast iron pillow block housing selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed.

8. Belts and Drives: Belts shall be oil and heat resistant, non-static type. Drives shall be precision-machined cast iron type, keyed and securely attached to wheel and motor shafts. Drives shall be sized for 150 percent of installed motor horsepower. The variable pitch motor drive must be factory set to specified fan RPM.

PART 3 – EXECUTION

3.1 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION

A. Install fans and accessories in accordance with manufacturers printed instructions and recommendations.

B. Connect propeller fans to discharge louver frame.

C. Extend fan lubrication fittings to an accessible location for re-lubrication.

D. Air handling equipment shall be balanced to the air capacities as indicated on documents.

3.2 SEQUENCE OF OPERATION

A. See plans for sequence of operation.

END OF SECTION

SECTION 15890

DUCTWORK

PART 1 – GENERAL

1.1 DESCRIPTION

A. Principal Work in this Section: Provide and install ductwork as indicated on the Drawings and as specified to include the following:

1. All sheet metal for the complete heating, air conditioning, exhaust, and ventilating systems.
2. All flexible ductwork.

B. Related Work Specified Elsewhere:

1. Vibration and Seismic Control
2. Mechanical Insulation
3. Ductwork Accessories

1.2 QUALITY ASSURANCE

A. Material Testing: Tests and adjustments shall be made by an independent contractor in accordance with the AABC manual. Tests shall be as specified in Part 3 - Execution. Repair the system at no cost to the owner, as required to achieve the specified conditions.

B. Reference Standards:

1. National Fire Protection Association (NFPA): NFPA No. 90-A, "Air-conditioning and Ventilating Systems."
2. Sheet Metal and Air Conditioning Contractor's National Association, Inc. (SMACNA), 8224 Old Court House Rd., Vienna Virginia 22180.
   a. "Duct Construction Standards": in this specification shall mean the California Mechanical Code of the "HVAC Duct Construction Standards."
   b. "Balancing and Adjustment Manual" in this Specification shall mean the first edition of the "Manual for the Balancing and Adjustment of Air Distribution System."
3. California Administrative Code (CAC) Title 24 PT4, Basic Mechanical Regulations.
4. California State Fire Marshal.
5. Factory Mutual Standard.
6. NFPA 91.
7. National Bureau of standards (NBS) Voluntary Product Standard 15-69.
8. All duct construction shall comply with the City of Pico Rivera, County of Los Angeles Mechanical Code requirements.

1.3 SUBMITTALS

A. Make submittals in accordance with Division 1 of the Specifications.

B. Provide Shop Drawings and product data for the following:

1. A test report shall be submitted for the flame spread of the resins.

2. A test report shall be submitted for air leakage tests.

3. Detail ductwork layouts showing exact routing, elevations, volume dampers, smoke/fire dampers, fire dampers, diffuser and register locations with capacities, terminal air units, all mechanical piping, sections and details. These drawings shall be coordinated with plumbing, electrical, walls, ceilings, air balancing, controls, and general contractor. Each of the above subcontractors and the general contractor shall sign these drawings stating that all work indicated is coordinated. Drawings shall be produce on AutoCAD, latest edition.

4. Detailed Drawings of built-up plenums with all accessories.

5. Hangers and support systems.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Low Pressure ductwork:

1. Duct gage, bracing and reinforcing shall conform to "Duct Construction Standards" for 1-inch WG (unless noted otherwise on the plans), Table 1.4. Table 3.2 for round ducts with spiral seam construction. Ducts shall be constructed of galvanized steel unless otherwise specified or indicated on the Drawings.

a. All uninsulated ducts over 18 inches shall be cross broken or beaded.

b. Ducts shall be braced and reinforced with galvanized steel angles.

2. Sealing: Seal Class C in accordance with SMACNA. Delete sealing at breakaway connections to fire and smoke dampers.

B. Flexible Ducts:

1. General: Factory fabricated, complying with NFPA 90A. Maximum length 7 feet. Supply air flexible ducts shall have acoustical insulation.

2. Flexible ducts shall be UL listed complying with UL 181. Ducts shall be Class 1.

3. Insulated Flexible Air Duct: Factory made including mineral fiber insulation with a maximum C factor of 0.25 at 75 degrees F. mean temperature, encased with a low permeability moisture barrier outer jacket having a puncture resistance of not less than 50 Beach Units. Acoustic Insertion loss shall not be less than 3 db per foot of straight duct, at 500 Hz based on 6 inch duct at 2500 FPM.

4. Application Criteria:

a. Temperature range: 0 to 250 degrees F. Internal.

b. Maximum working velocity: 2400 fpm for low pressure, 5000 fpm for medium and high pressure.

c. Minimum working pressure: low pressure=2" positive, 1-1/2" negative; medium pressure=6" positive; high pressure=10" positive.

5. Duct Clamps: 100% nylon strap, 175 pounds minimum loop tensile strength manufactured for this purpose or stainless steel strap with cadmium plated worm wear tightening device. Apply clamps with sealant and as approved for UL 181, Class 1 installation.

C. Medium/High Pressure Ductwork:

1. Gages, joints seams, reinforcement, fittings, sealing, supports and other details for rectangular, round and flat oval duct shall be in accordance with SMACNA Duct Construction Standards. Round or flat oval duct, with size converted on the basis of equal pressure drop, may be furnished in lieu of rectangular ducts shown on the drawings where space conditions permit.

2. Sealing: Class A in accordance with SMACNA HVAC Duct Construction Standards. Refer to Part 3 for required field pressure tests. Delete sealing at breakaway connections for fire and smoke dampers.

3. Rectangular Plenums and Casings: Refer to HVAC Duct Construction Standards, Section VI. Submit details of proposed joint/sealing system. Unless shown otherwise supply plenums and casings in VAV systems shall be medium pressure class, 4 inches wg static pressure. Provide bolted construction and tie rod reinforcement where required.

4. Round and Flat Oval Ducts: Furnish duct and fittings of the same manufacture to ensure good fitting of slip joints. 3 to 8 inch diameter elbows shall be two sections die stamped; all others shall be gored construction with all seams continuously welded. Coat galvanized areas of fittings damaged by welding with corrosion resistant aluminum paint or galvanized repair compound. All other fittings shall be low loss fittings as shown in SMACNA standards. Provide flat side reinforcement of oval ducts as recommended by the manufacturer and SMACNA, Chapter 3. Do not use internal tie rod reinforcement.

D. Wire Mesh Screens: fabricate with ½ inch mesh, galvanized steel or aluminum hardware cloth in a spot welded galvanized steel frame with approximately 1-1/2 inch margin.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Fabricate and install ductwork in accordance with the referenced SMACNA Standards.

B. Fabricate ductwork based on field measurements of space available. Duct sizes shown on the plans are clear inside dimensions, which shall be altered by the Contractor, when approved by the Architect, to other dimensions to produce the same air handling characteristics where necessary to avoid interferences and clearance difficulties.

C. Weld sheet metal in accordance with SMACNA, Guidelines for Welding Sheet Metal. Repair damaged areas with a galvanizing repair compound.

D. Install duct hangers and supports in accordance with SMACNA HVAC Duct Construction Standards, Section IV and the requirements of the "Guidelines for Seismic Restraints of Mechanical and Plumbing Piping Systems" published by SMACNA.

E. All return, exhaust and supply ductwork shall be constructed to SMACNA 1" pressure class, except for supply ducts from fans to VAV boxes in variable volume systems which shall be constructed to 4" pressure class.

F. Seal openings around duct penetrations of floors and fire rated partitions with a fire stop material as required by NFPA 90A.

G. Flexible ducts shall be installed in continuous, single pieces, as straight and short as possible, adequately supported. Centerline radius of bends shall not be less than 2 duct diameters. Make connections with screws and adhesive as recommended by the manufacturer. Flexible ducts shall not penetrate floors or partitions.

H. All ductwork on the roof connecting to plastic exhaust fans shall be of plastic duct construction. Ductwork below the roof line for these exhaust fans shall be constructed from stainless steel.

3.2 PROTECTION AND CLEANING

A. Adequately protect equipment and materials against physical damage. Protect equipment and ducts during construction against entry of foreign matter and clean both inside and outside before operation and painting.

3.3 DUCT LEAKAGE TESTS AND REPAIR

A. Low Pressure Ducts (below 2 in. WG): Seal visible openings and seal air leaks audible at operating condition.

END OF SECTION

SECTION 15895

DUCTWORK ACCESSORIES

PART 1 – GENERAL

1.1 DESCRIPTION

A. Principal Work in this Section: Provide and install ductwork accessories complete for the air distribution system, as indicated on the Drawings and as specified.

B. Related Work Specified Elsewhere:

1. Ductwork
2. Mechanical Insulation
3. Vibration and Seismic Control

1.2 QUALITY ASSURANCE

A. Acceptable Manufacturer:

1. Grilles, Registers and Diffusers:
   a. Titus
   b. Anemostat
   c. Krueger
   d. Price
   e. Effective HVAC

1.3 SUBMITTALS

A. Make submittals in accordance with Division 1 of the Specifications.

B. Submit Shop Drawings and Manufacturers Data for the following:

1. Roof curbs
2. Flexible connections.
3. Volume Dampers.
4. Fire dampers.
5. Smoke/fire damper
6. Draft dampers.
7. Grilles, registers, diffusers.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Flexible Connections: flexible connections shall be installed between all rigid ductwork or casing and all air handling equipment. Connections shall be or fireproof material and manufactured for temperatures and pressures involved. At least 1 inch slack shall be

allowed in these connections to insure that no vibration is transmitted from fan to ductwork. The fabric shall either be folded in with the metal or attached with metal collar frames at each end to prevent air leakage. Material shall be "vent glass" by Ventfabrics Inc., Vibration Mounting and Controls, Inc. or equal.

B. Turning Vanes: Turning vanes shall be installed in all mitered duct elbows and where shown on the Drawings. All turning vanes shall be double thickness.

C. Volume Dampers, Low Pressure:

1. Volume Damper shall be provided at each branch duct:
   a. low pressure supply air duct systems
   b. return air duct systems
   c. exhaust air duct systems
2. Comply with SMACNA Fig. 2-14B, 2-14D, "Side Elevation Fig. 2-11B" and text on "Volume Dampers" for all details except as specified herein on single blade and two blade damper for 2" W.G. Class duct. Each damper shall be provided with a closed end bearing.
3. Use 3/8" continuous square rod and 18 gauges galvanized stiffened blade for damper blade sizes (1) 18" wide by 18" high and smaller or (2) 12" diameter and smaller.
4. Use ½" continuous square rod and 16 gauge galvanized stiffened blade for damper blade sizes 19" to 48" wide by 10" high. Maximum blade sizes 48" by 10" high. Maximum Diameter is 16".
5. Maximum of two blades without a frame: Over two blades, use a manufactured 16 gauge galvanized, stiffened, opposed blade damper in a 14 gauge galvanized steel frame. All hardware shall be galvanized except use brass trunnions and bronze oilite bearing; Pacific Air Products, Series 200, Pottorff Series 400; or equal.
6. Quadrant shall be Durodyne Model 3/8" K-4/1/2" K-5 Quadline; Ventlox Model 555 Ventline; or equal.
7. Provide Closed end bearing, Durodyne SB-338 (3/8")/SB-312 (½"); Ventlox Model 609, or equal.
8. Cut slot in end of damper rod (Quadrant End) to indicate blade position.
9. Provide galvanized sheet metal "hat section" on ducts with exterior insulation so that quadrant will be exposed.
10. Each square rod shall be installed vertical or horizontal so that quadrant will be accessible for adjusting.
11. Provide 24" x 24" access door in wall or ceiling for each volume damper that is not accessible.

D. Fire and Smoke Dampers:

1. Fire and/or smoke dampers shall be provided in all duct openings through all respective fire-rated partitions, floors and roofs where required by local codes. Dampers shall be installed in conformance with National Fire Protection Association (NFPA) Standard 90A and shall be California Fire Marshall listed. Airtight, hinged access doors with catches shall be installed adjacent to all dampers and shall be sized for easy inspection or maintenance of the dampers. The Contractor shall not obstruct access doors with piping, etc. Provide required ceiling access doors in areas with other than removable type ceiling. All fire and

smoke dampers shall be Underwriters' Laboratories (UL) listed and California State Fire Marshal Approved.

a. Dampers shall be factory manufactured items, and performance tested prior to shipment to the jobsite.

b. Each damper shall be placed into a steel sleeve which in turn shall be placed into the partition, floor or roof. Each sleeve shall extend through the partition, floor or roof far enough on either side for a proper breakaway duct connection in accordance with SMACNA recommendations. No sheet metal duct shall pass through a fire-rated enclosure. dampers shall be type B or C. No sealant shall be applied to breakaway connections.

c. Fire dampers shall be so arranged that the fusible link/clip assembly or firestat controller shall be accessible.

d. Each damper shall have a free area equal to the duct to which they are installed. Provide applicable transitions.

e. Dampers shall be suitable for vertical or horizontal installation as indicated on the Drawings. Fire dampers shall employ gravity or spring and latch closure principle.

f. Smoke/fire damper shall be pivoting blade type with silicone rubber seals on each blade for smoke and provide with fusible link and electric motor to operate the damper.

g. Fire dampers shall use fusible links having an activation temperature of 165 degrees F. unless noted otherwise. All links shall be Underwriter's Laboratories Inc (UL) listed. All firestats shall be UL classified.

h. All fire dampers shall comply with UL Test Standard 555. All smoke dampers shall comply with UL Test Standard 555S.

i. All fire and smoke dampers used for protection of openings in fire rated assemblies shall carry a minimum 1-1/2 hour UL rating.

2. Fire dampers shall be interlocking blade, curtain type shall be similar to Pottorff Company Inc., Series VFD, or approved equal, for installation in fire rated walls. Smoke/fire dampers shall be similar to Pottroff Company Inc., Series 5000, or approved equal, for installation in smoke/fire rated walls.

3. Fire dampers shall be spring loaded butterfly style similar to Pottorff Company Inc., Series CFD-15, or approved equal, for installation in fire rated ceilings. Smoke/fire dampers shall be similar to Pottorff Company Inc., Series FSD-70, or approved equal for installation in smoke/fire rated ceilings.

E. Diffuser, Register and Grilles:

1. General: Provide all diffusers, registers and grilles to match the performance and size requirements as scheduled on the Drawings. They shall be located as indicated on the reflected ceiling plan Drawings and be suitable for installation in the suspended ceiling systems or surface mounted in plaster or special ceilings as required. Units shall have been tested in accordance with the Air Diffusion Council (ADC) Code and American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 36-72, with ratings certified by the ADC. The perforated face, on units so specified, shall be hinged for easy access to pattern control and duct accessories. Units shall be manufactured from heavy gage steel or aluminum and have a factory applied finish. Final color shall be as specified and approved by the Architect.

2. Ceiling Square Diffusers: Provide square-perforated face, square neck diffusers with opposed blade dampers and modular adjustable core. The damper shall be capable of adjustment from the face of the diffuser. Diffuser shall be similar to Titus PMC Series.

3. Sidewall Registers: Provide surface mounted registers with opposed dampers. Adjustment of damper shall be accessible from the face the register. Louvers shall be adjustable and run parallel with the horizontal or longest face. Supply registers shall be double deflection type with rear adjustable vertical louvers. Diffuser shall be similar to Titus 300FD Series supply registers.

4. Return and Exhaust Sidewall Registers shall be single deflection type. Register shall be similar to Titus 355FL Series.

5. Ceiling Grilles: Provide grilles of similar specification to diffusers and registers, but omit air volume dampers.

6. Ceiling Exhaust Register: Register shall be of steel and aluminum construction, with opposed blade damper in neck. Register shall be similar to Titus PAR1-AA Series.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install ductwork accessories in accordance with the manufacturers printed instructions.

B. Fire and Smoke Dampers shall be installed in accordance with the conditions of their approval. Required fire-resistance rating shall conform to the fire wall or partition rating as per NFPA-90A.

C. Provide ceiling or wall mounted red pin light for each smoke damper which shall light when the damper is the closed position. Coordinate location of duct smoke detector for smoke damper activation. Ceiling smoke/fire in exit corridors shall be activated from area smoke detectors in corridors, not duct detectors.

D. The exact location of diffusers, register and grille shall be as indicated on architectural drawings.

E. All diffuser and register plenums shall be coordinated with structural and other services above the ceilings and in walls.

F. Diffuser plenums shall be insulated with 1 ½ inch thick insulation or 1 inch of duct liner. See Section 15250.

END OF SECTION

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SECTION 15990

TESTING, ADJUSTING, AND BALANCING

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. The testing, adjusting and balancing of environmental and other systems shall be performed by a certified testing and balancing company, herein after called "company", specializing in the testing, adjusting and balancing of such systems.

B. Test, adjust and balance all systems as specified herein to provide a total system balance as set forth by the Associated Air Balance Council, AABC, latest national standards manual.

C. Perform all work under the supervision of AABC certified test and balance engineer and under direct supervision of AABC test and balance technician.

D. This company shall possess the required basic instruments set forth by AABC. These instruments shall include differential pressure gauges, anemometers, tachometers, pitot tubes, electric meters, psychrometers, flow hood, smoke set, sound pressure meters, thermometers, manometers and air differential pressure gauges.

E. Instruments shall have been calibrated within a period of six months prior to starting the balance procedure. Instruments shall be re-calibrated upon completion of work, when required, to prove reliability. Accuracy of instruments shall as follows:

1. Thermometers - plus and minus one scale division.
2. Bimetallic thermometers to be verified with glass thermometers.
3. Digital thermometers - plus and minus one-tenth degree.
4. Bourdon tube gauge - one-half percent of the scale.
5. Portable volt-ammeter and power factor meters, plus and minus two percent, clamp-on type shall be three percent.
6. Chronometric tachometer, one-fourth percent of scale, digital tachometer plus and minus one digit.
7. Sound testing meter, plus and minus two decibels.

F. Techniques of measurement shall be as outlined in the AABC Manual. Measurements in the field shall be sufficiently free of error to match the task. Sufficient quantities of readings shall be taken for averaging five percent error.

G. Company shall review the project documents prior to construction to identify potential problems from the viewpoint of total system balance. A written report which lists recommended changes and how they should be made during progress of the project as required to assure balancing devices are installed as required. Actual work of installing dampers, changing sheaves and correcting ductwork, etc., is the mechanical contractor's responsibility and not that of the balance company.

H. Company shall cooperate with contractors on the construction site, especially the temperature control contractor. Verify control system operation as specified and report on any installation problems.

I. Company shall submit a minimum of six reports of the total system balance to the architect. The report is considered accepted after certification of acceptance is performed by the architect's design professional. Reports shall be made on the report forms provided by AABC in the National Standard Manual.

J. Report shall be verified by field verification procedure as outlined in AABC Manual. Architect's design professional shall visit the site and witness the balance work and review the report. Ten percent of the report, selected at random, for verification shall be re-tested in the professional's presence. For all readings with deviation of more than ten percent between verification reading and the reported data shall be considered as failing. For sound pressure level, a deviation of three decibels is failing. A failure of more than ten percent of selected items shall result in failure of the entire field verification procedure.

K. For a project that fails the field verification procedure, company shall perform the following work at no additional cost:

1. Any system failing shall be re-balanced.
2. A new total system balance shall be provided.
3. A new field verification procedure shall be performed.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 AIR SYSTEMS TESTING, ADJUSTING AND BALANCING

A. Test and adjust blower RPM to design requirements:

1. Test and adjust blower RPM to design requirements.
2. Test and record motor full load amperages.
3. Make pitot-tube traverse of main supply, return and outside air ducts and obtain design CFM at the air handlers, return air and exhaust air fans.
4. Test and record system static pressure, suction and discharge.
5. Test and adjust system for design CFM.
6. Test and adjust system for design CFM outside air.
7. Test and record entering air temperature (dry bulb heating and cooling coils).
8. Test and record leaving air temperatures (wet bulb, cooling coil).
9. Test and record leaving air temperatures (dry bulb heating and cooling coils).
10. Test and record leaving air temperatures (wet bulb, cooling coils).
11. Adjust all main supply and return air ducts to proper design CFM.
12. Adjust all zones to proper design CFM, supply, return and exhaust.
13. Test and adjust each terminal air unit, diffuser, grille and register to within five percent of design requirements.

14. Adjust all diffusers, grilles and registers to minimize drafts in all areas.

15. Readings and test records of diffusers, grilles and registers, shall include required FPM velocity and test resultant velocity, required CFM after adjustments.

16. Identify and list the size, type, and manufacture of diffusers, grilles, registers and all tested equipment. Use manufacturer's ratings on all equipment to make required calculations.

B. Any changes in pulleys, belts and dampers or the addition of dampers, etc., required to correct the air balance shall be presented to the architect. The mechanical contractor shall make all such changes to the system.

END OF SECTION

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SECTION 15995

PROJECT COMPLETION

PART 1 – GENERAL

1.1 DESCRIPTION

A. Contractor shall coordinate requirements of all sections pertaining to HVAC system installation and insure that final installation is in accordance with specifications. Prior to requesting substantial completion inspection, Contractor shall furnish a letter stating that the requirements of this section have been met. Letter shall contain an itemized list indicating that each item has been personally checked by the Project Superintendent and that it is complete. In addition to this document, provide final test and balance reports, maintenance manuals, "as-built" documents, and other items required by the specifications, shall be submitted. Contractor to obtain written acceptance letter from County of Los Angeles Public Library.

B. This section is intended as a checklist for the Contractor to insure that items specified are properly installed and to ensure that a premature final punch list is not requested.

PART 2 – PRODUCTS

2.1 PERFORMANCE

A. Check air distribution systems and insure that systems are properly tested and balanced. Cooperate with testing and balancing agency and County of Los Angeles Public Library to achieve specified air balance.

B. Provide clean final filters and replacement filters as specified.

C. Provide lubrication for all lubricated devices. Include schedule of required lubricants and lubricating periods in Operations and Maintenance manual, see Section 15010.

D. Verify installation of instrumentation. Verify that air filter gauges, instrument wells, thermometers, pressure gauges, flow measuring stations, etc., are installed in all locations required by the plans and specifications. Verify accuracy and readability at installed location, and correct items installed in unreadable locations, as required.

E. Check all refrigerant systems. Verify that systems contain proper charge of refrigerant for specified operating temperatures and load. Check to insure that system is not contaminated with moisture. Replace refrigerant if necessary.

F. Verify that all equipment is installed in accordance with manufacturers' recommendations. At the time of start up insure that control, power wiring and interlocks are complete. Check alignment of motors and drives and verify proper rotation.

G. Verify that system identification specified in Section 15047 is properly executed.

H. Verify proper operation of all safety controls, relief, valves, etc.

I. Thoroughly clean installation. Remove temporary covers and labels, clean paint and/or coating spatters, and vacuum inside of air handling unit and control cabinets.

J. Provide touch up painting of factory finished equipment to cover minor dents and scratches. Surface shall be prepared by light sanding or de-rusting with chemical compounds, then coated with a compatible primer and matching top coat.

K. Provide Operations and Maintenance Manuals as specified in Section 15010.

L. Provide verification that Owners Operating Instruction periods specified in Section 15010 have been completed.

M. Provide verification that initial water treatment specified has been completed.

N. HVAC start-up forms are included with this section to assist in checking project completion. They shall be completed and submitted prior to requesting final inspection.

O. As-built documents shall be clearly marked by the contractors to indicate the installed mechanical and plumbing systems.

END OF SECTION

Bid Tabulation
Placentia Library District Renovation
2:00 p.m.

Contractor Name: Cal-City Construction
Base Bid Price: $1,469,100
Addendum Acknowledged: ✓
Bid Form Complete/Signed: ✓
Bid Bond Provided: ✓
Subcontractor Listing: ✓

Rep. Steve Choe

Contractor Name: __________
Base Bid Price: __________
Addendum Acknowledged: __________
Bid Form Complete/Signed: __________
Bid Bond Provided: __________
Subcontractor Listing: __________

Contractor Name: __________
Base Bid Price: __________
Addendum Acknowledged: __________
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Bid Bond Provided: __________
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Addendum Acknowledged: __________
Bid Form Complete/Signed: __________
Bid Bond Provided: __________
Subcontractor Listing: __________

Contractor Name: __________
Base Bid Price: __________
Addendum Acknowledged: __________
Bid Form Complete/Signed: __________
Bid Bond Provided: __________
Subcontractor Listing: __________

BIDDER'S BID
PLACENTIA LIBRARY DISTRICT
LIBRARY INTERIOR IMPROVEMENT PROJECT

DISTRICT PROJECT NO. PLD-2018-003

Date December 12, 2018

To the Board of Directors of the Placentia Library District:

The Undersigned hereby declares:

(a) That the only persons or parties interested in this bid as principals are the following:

Cal-City Construction, Inc.

Woo S. Lim, President

(If the bidder is a corporation, give the name of the corporation and the name of its president, secretary, treasurer, and manager. If a co-partnership, give the name, under which the co-partnership does business, and the names and addresses of all co-partners. If an individual, state the name under which the contract is to be drawn.)

(b) That this bid is made without collusion with any person, firm or corporation.

(c) That he has carefully examined the location of the proposed work and has familiarized himself with all of the physical and climatic conditions, and makes this bid solely upon his own knowledge.

(d) That by submitting this Bidder's Bid, he acknowledges receipt and knowledge of the contents of those communications sent by the Placentia Library District to him at the address furnished by him to the Placentia Library District when this bid form was obtained.

(e) That he has carefully examined the specifications, both general and detail, and the drawings attached hereto, and communications sent to him as aforesaid, and makes this bid in accordance therewith.

(f) That, if this bid is accepted he will enter into a written contract for the performance of the proposed work with the Placentia Library District.

(g) That he proposes to enter into such contract and to accept in full payment for the work actually done thereunder the prices shown in the attached schedule. It is understood and agreed that the quantities set forth are estimates and that the unit prices will apply to the actual quantities whatever they may be.

Accompanying this bid is a certified or cashier's check or bidder's bond, payable to the order of the Placentia Library District in the sum of TEN PERCENT OF AMOUNT BID DOLLARS ($ 10 % OF AMOUNT BID).

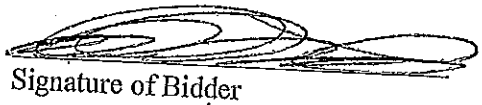
Said bidder's bond has been duly executed by the undersigned bidder and by a financially sound surety company authorized to transact business in this state.

It is understood and agreed that should the bidder fail within ten (10) days after award of contract to enter into the contract and furnish acceptable surety bonds, then the proceeds of said check, or bidder's bond, shall become the property of the Placentia Library District; but if the contract is entered into and said bonds are furnished, or if the bid is not accepted then said check shall be returned to the undersigned, or the bidder will be released from the bidder's bond.

16605 Norwalk Blvd.
Address of Bidder

Cerritos, CA 90703
City Zip Code

(562)404-4820
Telephone of Bidder


Signature of Bidder

BID SCHEDULE

PLACENTIA LIBRARY DISTRICT
CONTRACT DOCUMENTS AND SPECIFICATIONS
LIBRARY INTERIOR IMPROVEMENT PROJECT

DISTRICT PROJECT NO. PLD-2018-003

ITEM NO.	ESTIMATED QUANTITY	UNIT	DESCRIPTION WRITTEN IN WORDS	UNIT PRICE	AMOUNT	
1	1	LS	DIVISION 1 GENERAL REQUIREMENTS		220,500	
2	1	LS	DIVISION 2 SITE WORK		50,100	
3	1	LS	DIVISION 3 CONCRETE		59,400	WSL
4	1	LS	DIVISION 5 METALS		14,500	
5	1	LS	DIVISION 6 WOODS AND PLASTIC		30,000	WSL
6	1	LS	DIVISION 7 THERMAL MOISTURE AND PROTECTION		10,000	
7	1	LS	DIVISION 8 DOORS AND WINDOWS		61,000	WSL
8	1	LS	DIVISION 9 FINISHES		321,700	
9	1	LS	DIVISION 10 SPECIALTIES		79,000	
10	1	LS	DIVISION 15 MECHANICAL		169,000	
11	1	LS	DIVISION 16 ELECTRICAL		157,300	
12	1	LS	OVERHEAD AND PROFIT			209,300 WSL
13	1	LS	INSURANCE AND BOND		17,300	
14	1	LS	ALLOWANCE NO.1 & NO.2		70,000	

MANDATORY BID SCHEDULE ITEMS:
TOTAL AMOUNT BID (IN FIGURES)→ 1,469,100

TOTAL AMOUNT BID, SCHEDULE (WRITTEN IN WORDS): One million four hundred sixty nine thousand one hundred.

Bid Schedule Note: Bid Price indicated refers to all items illustrated on the plans and details, and delineated within the specifications installed and completely in place with all applicable portions of the construction documents and include all costs connected with such items including, but to necessarily limited to, materials, transportation, taxes, insurance, labor, overhead, and profit, for Contractor and Subcontractors.

All work called for on the Contract Documents and Specifications are to provide a completed Project with all systems operating properly and ready for use.

Accompanying this bid is A BIDDERS BOND
(Insert "$ 10 % OF AMOUNT BID cash", "cashier's check", "certified check", or "bidder's bond" as the case may be) in the amount equal to at least ten percent (10%) of the total bid.

The undersigned further agrees that in case of default in executing the required contract, with necessary bond, within ten (10) days, not including Sundays and legal holidays, after having received notice that the contract has been awarded and ready for signature, the proceeds of the security accompanying his bid shall become the property of the Placentia Library District, and this bid and the acceptance thereof may be considered null and void.

Cal-City Construction, Inc. — 12/12/2018
NAME OF BIDDER (PRINT) — SIGNATURE — DATE

16605 Norwalk Blvd.
ADDRESS

Cerritos , CA — 90703 — (562)404-4820
CITY — ZIP CODE — TELEPHONE

Lic # 539265 Classification A, B, C-8, C36 and HAZ
STATE CONTRACTOR LICENSE NO. AND CLASSIFICATION

I declare under penalty of perjury of the laws of the State of California that the representations made herein are true and correct in accordance with the requirements of California Business and Professional Code Section 7028.15.

CONTRACTOR SIGNATURE OR AUTHORIZED OFFICER

LIST OF SUBCONTRACTORS *

BID OPENING DATE December 6, 2018

PROJECT: LIBRARY INTERIOR IMPROVEMENT PROJECT NO.: PLD-2018-003

LOCATION: 411 East Chapman Avenue, Placentia, CA 92870

CLIENT: PLACENTIA LIBRARY DISTRICT

CONTRACTOR Cal-City Construction, Inc.

Name Under Which Subcontractor is Licensed	License No.	Address of Office, Mail, Or Shop	Percent of Total Contract	Specific Description of Subcontract
HORIZONS CONSTRUCTION COMPANY INTERNATIONAL INC	825022	432 W MEATS AVE ORANGE, CA 92865	7.33%	Concrete, Masonry, Metals Demolition
D 2 S CONTRACTOR INC	932353	13825 ARTESIA BLVD CERRITOS, CA 90703	12.77%	Drywall, Framing, Ceiling Insulation, Casework, Flooring, windows
United Painting & Maintenance	748254	1732 W. 22nd Street Los Angeles, CA 90007	2.71%	Painting, Sealing
J N J TILE CO INC	665139	9713 ORANGE TERR PICO RIVERA, CA 90660	2.19%	Tiling
BRAILLE SIGNS INC	682485	16782 VON KARMAN AVENUE #30 IRVINE, CA 92606	2.01% WSL	Signage
				WSL

*In compliance with the provisions of Public Contract Code Section 4104, the undersigned bidder herewith sets forth the name, location of the place of business, and California contractor license of each subcontractor – who will perform work or labor or render service to the Prime Contractor, specially fabricates and installs a portion of the work or improvement necessary to complete construction contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total base bid amount or ten thousand ($10,000.00), whichever is greater, and the portion of the work which will be done by each subcontractor.

LIST OF SUBCONTRACTORS *

BID OPENING DATE December 6, 2018

PROJECT: LIBRARY INTERIOR IMPROVEMENT PROJECT NO.: PLD-2018-003

LOCATION: 411 East Chapman Avenue, Placentia, CA 92870

CLIENT: PLACENTIA LIBRARY DISTRICT

CONTRACTOR Cal-City Construction, Inc.

Name Under Which Subcontractor is Licensed	License No.	Address of Office, Mail, Or Shop	Percent of Total Contract	Specific Description of Subcontract
				WSL
PENNER PARTITIONS INC	924223	3501 EAST LA PALMA AVENUE ANAHEIM, CA 92806	1.55%	Toilet Partition, Toilet Accessories
The Best Merit	464309	7525 E. Rosecrans Ave #210 Paramount, CA 90723	0.60%	WSL HVAC
S K PACIFIC ELECON INC	693417	18911 ALEXANDER AVENUE CERRITOS, CA 90703	6.79%	Electrical; WSL
R. C. Schen	990140	11923 Del Mar Ave. Chino, CA 91710	8.03%	Plumbing
			WSL	

*In compliance with the provisions of Public Contract Code Section 4104, the undersigned bidder herewith sets forth the name, location of the place of business, and California contractor license of each subcontractor -- who will perform work or labor or render service to the Prime Contractor, specially fabricates and installs a portion of the work or improvement necessary to complete construction contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total base bid amount or ten thousand ($10,000.00), whichever is greater, and the portion of the work which will be done by each subcontractor.

LIST OF SUBCONTRACTORS *

BID OPENING DATE December 6, 2018

PROJECT: LIBRARY INTERIOR IMPROVEMENT   PROJECT NO.: PLD-2018-003

LOCATION: 411 East Chapman Avenue, Placentia, CA 92870

CLIENT: PLACENTIA LIBRARY DISTRICT

CONTRACTOR Cal-City Construction, Inc.

Name Under Which Subcontractor is Licensed	License No.	Address of Office, Mail, Or Shop	Percent of Total Contract	Specific Description of Subcontract
ABC RESOURCES INC	538680	1527 WEST STATE STREET ONTARIO, CA 91762		Striping

*In compliance with the provisions of Public Contract Code Section 4104, the undersigned bidder herewith sets forth the name, location of the place of business, and California contractor license of each subcontractor – who will perform work or labor or render service to the Prime Contractor, specially fabricates and installs a portion of the work or improvement necessary to complete construction contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total base bid amount or ten thousand ($10,000.00), whichever is greater, and the portion of the work which will be done by each subcontractor.

LIST OF SUBCONTRACTORS *

BID OPENING DATE December 6, 2018

PROJECT: LIBRARY INTERIOR IMPROVEMENT PROJECT NO.: PLD-2018-003

LOCATION: 411 East Chapman Avenue, Placentia, CA 92870

CLIENT: PLACENTIA LIBRARY DISTRICT

CONTRACTOR Cal-City Construction, Inc.

Name Under Which Subcontractor is Licensed	License No.	Address of Office, Mail, Or Shop	Percent of Total Contract	Specific Description of Subcontract

*In compliance with the provisions of Public Contract Code Section 4104, the undersigned bidder herewith sets forth the name, location of the place of business, and California contractor license of each subcontractor – who will perform work or labor or render service to the Prime Contractor, specially fabricates and installs a portion of the work or improvement necessary to complete construction contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total base bid amount or ten thousand ($10,000.00), whichever is greater, and the portion of the work which will be done by each subcontractor.

DECLARATION OF ELIGIBILITY TO CONTRACT

Labor Code Section 1777.1; Public Contract Code Section 6109

The undersigned, a duly authorized representative of the Contractor, certifies and declares that:

1. The Contractor is aware of Sections 1777.1 and 1777.7 of the California Labor Code, which prohibit a contractor or subcontractor who has been found by the Labor Commissioner or the Director of Industrial Relations to be in violation of certain provisions of the Labor Code, from bidding on, being awarded, or performing work as a subcontractor on a public works project for specified periods of time.

2. The Contractor is not ineligible to bid on, be awarded or perform work as a subcontractor on a public works project by virtue of the foregoing provisions of Sections 1777.1 or 1777.7 of the California Labor Code or another provision of law.

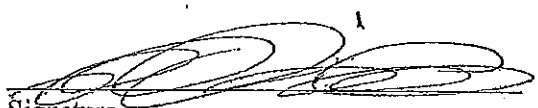
3. The Contractor is aware of California Public Contract Code Section 6109, which states:

   (a) A public entity, as defined in Section 1100 of the [Public Contract Code], may not permit a contractor or subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on, a public works project. Every public works project shall contain a provision prohibiting a contractor from performing work on a public works project with a subcontractor who is ineligible to perform work on the public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

   (b) Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract, and any public money that may have been paid to a debarred subcontractor by a contractor on the project shall be returned to the awarding body. The contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.

4. The Contractor has investigated the eligibility of each and every subcontractor the Contractor intends to use on this public works project, and determined that none of them is ineligible to perform work as a subcontractor on a public works project by virtue of the foregoing provisions of the Public Contract Code Sections 1777.1 or 1777.7 of the Labor Code, or any other provision of law.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this day of December 12, 2018, at Cerritos, CA (place of execution).



Signature
Name: Woo S. Lim
Title: President
Name of Contractor:
Cal-City Construction, Inc.

BIDDER'S VIOLATION OF LAW/SAFETY QUESTIONNAIRE

In accordance with Government Code Section 14310.5 and in conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

QUESTIONNAIRE

Has the Bidder, any officer, principal or employee of the Bidder who has a proprietary interest in the business of the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on or completing a federal, state or local government project because of violation of law or a safety regulation?

YES: _____ NO: X

If the answer is yes, explain the circumstances in the following space:

STATEMENT

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

NOTE: **The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.**

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

CONTRACTOR'S INDUSTRIAL SAFETY RECORD

Project Identification PLD-2018-003

Bid Date December 12, 2018

This information must include all construction work undertaken in the State of California by the bidder and any partnership, joint venture or corporation that any principal of the bidder participated in as a principal or owner for the last five calendar years and the current calendar year prior to the date of bid submittal. Separate information shall be submitted for each particular partnership, joint venture, corporation or individual bidder. The bidder may attach any additional information or explanation of data, which he would like, taken into consideration in evaluating the safety record. An explanation must be attached of the circumstances surrounding any and all fatalities.

ITEM	5 CALENDAR YEARS PRIOR TO CURRENT YEAR						CURRENT YEAR
	2011	2012	2013	2014	2015	TOTAL	
No. of Contracts	10	11	15	19	10	75	14
Total dollar amount of contracts (in 1,000's)	11 M	21 M.	14 M.	18 M.	16 M.	80 M	20 M.
No. of lost workday cases	0	0	0	0	0	0	0
No. of lost work day cases involving permanent transfer to another job or termination of employment	0	0	0	0	0	0	0
No. of lost workdays	0	0	0	0	0	0	0

*The information required for this item is the same as required for columns 3 to 6, Code 10, Occupational Injuries, Summary - Occupational Injuries and Illnesses, OSHA No. 102.

The above information was compiled from the records that are available to me at this time and I declare under penalty of perjury that the information is true and accurate within the limitations of these records.

Cal-City Construction, Inc.
Name of Bidder (Print


Signature

16605 Norwalk Blvd.
Address

Lic # 539265 A,B,C-8,C36 and HAZ
State Contractor's Lic. No. & Class

Cerritos, CA 90703
City Zip Code

(562)404-4820
Telephone

AFFIDAVIT FOR CO-PARTNERSHIP FIRM

None Applicable

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

_____, being first duly sworn, deposes and says:

That he is a member of the co-partnership firm designated as

_____

which is the party making the foregoing bid or bid; that such bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder or person to put in a sham bid or that such other person shall refrain from bidding; and has not in any manner sought by collusion to secure any advantage against the Placentia Library District or any person interested in the proposed contract, for himself or for any other person.

That he has been and is duly vested with authority to make and sign instruments for the co-partnership by

_____

_____

who constitute the other members of the co-partnership.

_____
Signature

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20__, by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

_____
Signature of Officer Administering Oath

(seal)

AFFIDAVIT FOR CORPORATE BIDDER

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Woo S. Lim, being first duly sworn, deposes and says:

That he is President

of, Cal-City Construction, Inc.

a corporation which is the party making the foregoing bid; that such bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder or person to put in a sham bid or that such other person shall refrain from bidding; and has not in any manner sought by collusion to secure any advantage against the Placentia Library District or any person interested in the proposed contract, for himself or for any other person.

Signature

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Subscribed and sworn to (or affirmed) before me on this 12th day of December, 2018 by Woo S. Lim, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

ELIZABETH FRANCO
Commission # 2129233
Notary Public - California
Los Angeles County
My Comm. Expires Oct 5, 2019

Signature of Officer Administering Oath

(seal)

AFFIDAVIT FOR INDIVIDUAL BIDDER

None Applicable

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

_____, being first duly sworn, deposes and says:

That he is the party making the foregoing bid; that such bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder or person to put in a sham bid or that such other person shall refrain from bidding; and has not in any manner sought by collusion to secure any advantage against the Placentia Library District or any person interested in the proposed contract, for himself or for any other person.

_____
Signature

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20__, by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

_____
Signature of Officer Administering Oath

(seal)

AFFIDAVIT FOR JOINT VENTURE

None Applicable

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

_____, being first duly sworn, deposes and says:

That he _____

of, _____

one of the parties submitting the foregoing bid as a joint venture and that he has been and is duly vested with the authority to make and sign instruments for and on behalf of the parties making said bid who are:

_____

_____

_____;

that such bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder or person to put in a sham bid or that such other person shall refrain from bidding; and has not in any manner sought by collusion to secure any advantage against the Placentia Library District or any person interested in the proposed contract, for himself or for any other person.

_____
Signature

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20__, by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

_____
Signature of Officer Administering Oath

(seal)

BOND No._____

IT WILL BE PROVIDED AFTER BID

FAITHFUL PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS that, WHEREAS the Placentia Library District ("District"), has awarded to _____

_____

(Name and address of Contractor)

("Principal"), a contract (the "Contract") for the work described as follows: Library Interior Improvement Project, Project No.: PLD-2018-003.

WHEREAS, Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, we, the undersigned Principal, and _____

_____

_____

(Name and address of Surety)

("Surety") a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto District in the

penal sum of _____

_____

Dollars ($_____), this amount being not less than the total contract price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal, his, her, or its, heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and covenants, conditions and agreements in the Contract and any alteration thereof made as therein provided, on the Principal's part to be kept and performed, all within the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and hold harmless District, its officers, agents, and others as therein provided, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

In case suit is brought upon this bond, Surety further agrees to pay all court costs and reasonable attorneys' fees in an amount fixed by the court.

FURTHER, the Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, addition or modification to the terms of the Contract, or of the work to be performed thereunder, or the specifications for the same, shall in any way affect its obligations under this bond, and it does hereby waive notice of any such change, extension of time, alteration, addition, or modification to the terms of the Contract or to the work or to the specifications thereunder. Surety hereby waives the provisions of California Civil Code §§ 2845 and 2849. The District is the principal beneficiary of this bond and has rights of a party hereto.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated:_____

"Principal"	"Surety"
_____	_____
_____	_____
By:_____	By:_____
Its _____	Its _____
By:_____	By:_____
Its _____	Its _____

Note: This bond must be dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.

APPROVED AS TO SURETY AND
PRINCIPAL AMOUNT

By:_____
Insurance Administrator

BOND No._____

IT WILL BE PROVIDED AFTER BID

PAYMENT BOND
(LABOR AND MATERIAL)

KNOW ALL PERSONS BY THESE PRESENTS that, WHEREAS the Placentia Library District Bar ("District"), has awarded to_____

_____

(Name and address of Contractor)

("Principal"), a contract (the "Contract") for the work described as follows: Library Interior Improvement Project, Project No.: PLD-2018-003.

WHEREAS, Principal is required under the terms of the Contract and the California Civil Code to secure the payment of claims of laborers, mechanics, materialmen, and other persons as provided by law.

NOW, THEREFORE, we, the undersigned Principal, and_____

_____

_____

(Name and address of Surety)

("Surety") a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto District in the penal sum of_____

_____ Dollars($_____), this amount being not less than one hundred (100%) of the total contract price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal, his, her or its heirs, executors, administrators, successors, or assigns, or subcontractors shall fail to pay any of the persons named in Section 3181 of the California Civil Code, or any amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to work or labor performed under the Contract, the Surety will pay for the same in an amount not exceeding the penal sum specified in this bond; otherwise, this obligation shall become null and void. This bond shall insure to the benefit of any of their persons named in Section 3181 of the California Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon the bond. In case suit is brought upon this bond, Surety further agrees to pay all court costs and reasonable attorneys' fees in an amount fixed by the court.

FURTHER, the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, addition, or modification to the terms of the Contract or of the work to be performed thereunder, or the specifications for the same, shall in any way affect its obligations under this bond, and it does hereby waive notice of any such change, extension of time, alteration, addition, or modification to the terms of the Contract or to the work or to the specifications thereunder. Surety hereby waives the provisions of California Civil Code §§ 2845 and 2849.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set

forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated_____

"Principal"	"Surety"
_____	_____
_____	_____
By:_____	By:_____
Its _____	Its _____
By:_____	By:_____
Its _____	Its _____

Notary

Note: This bond must be dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.

APPROVED AS TO SURETY AND
PRINCIPAL AMOUNT

By:_____
Insurance Administrator

BOND No._____

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS that,

WHEREAS, the Placentia Library District ("District"), has issued an invitation for bids for the work described as follows: Library Interior Improvement Project, Project No.: PLD-2018-003

WHEREAS Cal-City Construction, Inc.
16605 Norwalk Blvd., Cerritos, CA 90703
(Name and address of Bidder)
("Principal"), desires to submit a bid to the District for the work.

WHEREAS, bidders are required under the provisions of the California Public Contract Code to furnish a form of bidder's security with their bid.

NOW, THEREFORE, we, the undersigned Principal, and Western Surety Company
1000 Wilshire Blvd., Suite 1800, 18th Floor Los Angeles, CA 90017
(Name and address of Surety)
("Surety") a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto District in the penal sum of Ten Percent of the Total Amount Bid

Dollars($ 10%), being not less than ten percent (10%) of the total bid price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal is awarded a contract for the work by District and within the time and in the manner required by the bidding specifications, entered into the written form of contract included with bidding specifications, furnishes the required bonds, one to guarantee faithful performance and the other to guarantee payment for labor and materials, and furnishes the required insurance coverages, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

In case suit is brought upon this bond, Surety further agrees to pay all court costs incurred by District in the suit and reasonable attorneys' fees in an amount fixed by the court. Surety hereby waives the provisions of California Civil Code § 2845.

IN WITNESS WHEREOF, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being

hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: 12/4/18

"Principal"	"Surety"
Cal-City Construction, Inc.	Western Surety Company
By: Woo S. Lim	By: William Syrkin
Its President	Its Attorney-In-Fact
By:	By:
Its	Its

Note: This bond must be dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Owen Brown, Richard Adair, William Syrkin, Sergio D Bechara, Margaret Gilmore, Rebecca Haas-Bates, Individually

of Irvine, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 9th day of June, 2015.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 9th day of June, 2015, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
February 12, 2021

S. EICH
NOTARY PUBLIC
SOUTH DAKOTA

S. Eich, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 4th day of December, 2018.

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Los Angeles)

On December 4, 2018 before me, A. M. Peluffo, Notary Public
Date *Here Insert Name and Title of the Officer*

personally appeared William Syrkin
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

A. M. PELUFFO
COMM. #2259366
Notary Public - California
Los Angeles County
My Comm. Expires Oct. 12, 2022

Signature A. M. Peluffo
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: _____ Document Date: _____
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: William Syrkin	Signer's Name:
☐ Corporate Officer — Title(s):	☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Individual ☒ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer is Representing: Western Surety Company	Signer is Representing:

NON-COLLUSION AFFIDAVIT

TO: THE PLACENTIA LIBRARY DISTRICT:

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Woo S. Lim, President, being first duly sworn, deposes and says that he or she is of Cal-City Construction,Inc., the party making the foregoing bid, that the bid is not made in the interest of or on behalf of, any undisclosed person, partnership, company association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited another bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contact or anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signature of Bidder

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

Subscribed and sworn to (or affirmed) before me on this 12th day of December, 2018, by Woo S. Lim, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

(seal) ELIZABETH FRANCO Commission # 2129233 Notary Public - California Los Angeles County My Comm. Expires Oct 5, 2019

Signature

EXPERIENCE STATEMENT

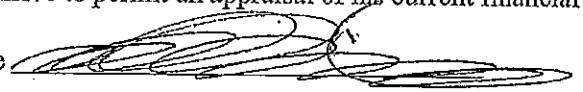
To be responsive, the bidder must list below a minimum of two public agencies for which bidder has constructed from the ground up, civic, community/publicly oriented type buildings, or substantial gut rehabilitation/renovation of two civic, community/publicly oriented type buildings, or a combination thereof performed within California. within the past ten years. Only projects in excess of $1 million each qualify as similar for this Project. Listed projects shall have included at least three of the following items: low voltage systems, interior acoustical treatments, prefabricated furniture or shelving systems, custom millwork, relocation or construction of architectural and/or structural walls, new finishes (carpet, tile, paint) and/or utility stub outs/feeds.

1. Project Title Los Nietos Library
   Contract Amount $4,372,000.00
   Type of Work Remodeling
   Client Community Development Commission of the County of Los Angeles
   Agency Project Manager Jeffrey Biben Phone (626)586-1773
   Date Completed 2018 % Subcontracted 73%

2. Project Title South Whittier Library
   Contract Amount $8,056,200.00
   Type of Work New Construction
   Client Community Development Commission of the County of Los Angeles
   Agency Project Manager Jeffrey Biben Phone (626)586-1773
   Date Completed 2017 % Subcontracted 80%

3. Project Title Lomita Library
   Contract Amount $1,950,000.00
   Type of Work Remodeling
   Client Community Development Commission of the County of Los Angeles
   Agency Project Manager Jeffrey Biben Phone 626)586-1773
   Date Completed 2017 % Subcontracted 77%

NOTE: If requested by the District, the bidder shall furnish a certified financial statement, references, and other information sufficiently comprehensive to permit an appraisal of his current financial condition.

Bidder's Signature 

EXPERIENCE STATEMENT

To be responsive, the bidder must list below a minimum of two public agencies for which bidder has constructed from the ground up, civic, community/publicly oriented type buildings, or substantial gut rehabilitation/renovation of two civic, community/publicly oriented type buildings, or a combination thereof performed within California. within the past ten years. Only projects in excess of $1 million each qualify as similar for this Project. Listed projects shall have included at least three of the following items: low voltage systems, interior acoustical treatments, prefabricated furniture or shelving systems, custom millwork, relocation or construction of architectural and/or structural walls, new finishes (carpet, tile, paint) and/or utility stub outs/feeds.

1. Project Title El Camino Library
   Contract Amount $2,388,000.00
   Type of Work Remodeling
   Client Community Development Commission of the County of Los Angeles
   Agency Project Manager Jeffrey Biben Phone (626)586-1773
   Date Completed 2014 % Subcontracted 73%

2. Project Title _____
   Contract Amount _____
   Type of Work _____
   Client _____
   Agency Project Manager _____ Phone _____
   Date Completed 2017 % Subcontracted ___

3. Project Title _____
   Contract Amount _____
   Type of Work _____
   Client _____
   Agency Project Manager _____ Phone _____
   Date Completed _____ % Subcontracted ___

NOTE: If requested by the District, the bidder shall furnish a certified financial statement, references, and other information sufficiently comprehensive to permit an appraisal of his current financial condition.

Bidder's Signature 

ADDENDUM No. One (1)
to the contract documents for
PLACENTIA LIBRARY
411 EAST CHAPMAN AVENUE, PLACENTIA, CA 92870
BID NUMBER PLD-2018-003

Date of this Addendum December 10, 2018

Notice: This addendum is issued before the bid opening date to inform bidders of revisions to the Contract Documents and is hereby made a part of the Contract Documents. The following changes, additions, and/or clarifications shall be made to the specifications for the work of the above-mentioned project. In case of a conflict between specifications and this Addendum, this Addendum shall govern. All requirements contained in the Contract Documents shall apply to this Addendum, and the general character of the work called for in this Addendum shall be the same as originally set forth in the applicable portions of the Contract Documents for similar work, unless otherwise specified under this Addendum, and all incidental work necessitated by this Addendum as required to complete the work shall be included in the bid, even though not specifically mentioned in this Addendum. The balance of the contract documents shall remain unchanged.

This Notice to Bidders forms a part of the Contract Documents and clarifies certain portions of the Bid Documents and Drawings.

GENERAL INFORMATION

1. Please indicate your receipt of this Addendum in the space on the Bid Form. Failure to do so is grounds for rejection of the Bid because this Addendum contains changes that are materially substantial to the Bid. Each prime bidder is responsible for distribution of information conveyed herein to its sub-bidders and suppliers.

2. Bid date to ***REMAIN the SAME***: **December 12th, 2018 at 2:00 p. m.**

3. **CHANGES TO PART B Drawings. See Attachment 1**

   a. REPLACE Sheet G001 – Schedules and Notes with attached Sheet of the same name and number
   b. REPLACE Sheet A302 – Enlarged Plans and Interior Elevations with attached Sheet of the same name and number
   c. REPLACE Sheet P300 – Reconst. Water & Gas Plan with attached Sheet of the same name and number
   d. REPLACE Sheet P400 – Enlarged Café Bar & Restroom Plumbing Plans with attached Sheet of the same name and number

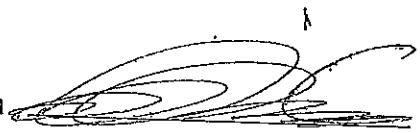
Kindly notify your subcontractors about this addendum.

If you have any questions regarding this project, please contact Ms. Jeanette Contreras at (714) 528-1906 or at jcontreras@placentialibrary.org.

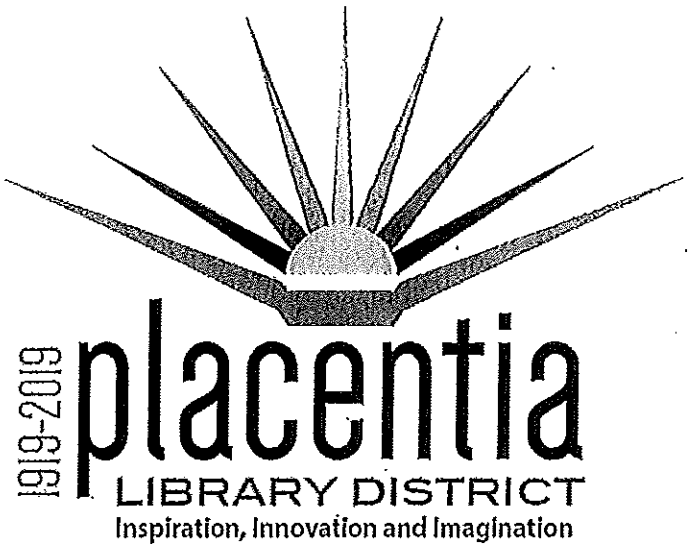
Approved by:

Jeanette Contreras, Library Director

END OF ADDENDUM

Acknowledged by Woo S. Lim 

Cal-City Construction, Inc.



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Presentation of Proposals for Printing Service.**

DATE: December 18, 2018

BACKGROUND

The Library has worked with Minuteman in Placentia and the Placentia Yorba Linda Unified School District for its printing needs. The Library produces publicity materials including posters, banners, flyers, brochures, and newsletters which is the majority of the printing budget.

On November 19, 2018 the Library began a formal competitive bidding process for printing service of the Library's newsletters and summer guides. On the closing bid date of December 12, 2018, the Library received one bid from Advantage which ranges from $3,920 to $5,761 depending on number of pages and paper weight. Advantage's clients include the City of Laguna Beach, City of Lake Forest, City of South Gate and Saddleback Unified School District.

Attachment A is the RFP as made available to the public on November 19, 2018.

Attachment B is the Bid Tabulation.

Attachment C is the proposal from Advantage.

Fiscal Impact: $15,000 - $20,000

RECOMMENDATIONS

1. Motion to award the contract to Advantage in the amount not to exceed $20,000 for printing service of the newsletters and summer guide and authorize the Board President to execute the contract.

2. Authorize motion with a roll call vote.

3. Roll call vote.

Date: November 19, 2018

SUBJECT: Request for Proposals (RFP) – Printing Services

Submit Written Bid To: Placentia Library District Attn.:
Administration
411 E. Chapman Ave. Placentia, CA 92870
714-528-1925, ext. 200

Written Bids Shall Be Submitted By:
Date: December 6, 2018
Time: 1:00 p.m., PST
NO EXCEPTIONS
Late submittals will not be considered. Written bids must be received by the time and at the location specified above. Postmarks will not be accepted. Bids addressed to anyone other than the designation specified above under "Submit written Bid to" section will not be accepted. **Note: All submitted bids shall be sealed.**

It is recognized that this Request for Proposal does not identify every possible feature that would be of benefit to the Placentia Library District. Thus, bidders are encouraged to identify problems, solutions, or any additional features which would be of benefit to the Placentia Library District and pertinent to their proposals. Bidders are required to provide as much detail as possible in this proposal process regarding scope of services.

INTRODUCTION

The Placentia Library District owns, operates and maintains its building at 411 E. Chapman Avenue, Placentia, CA 92870, which was built in 1974. The District is a special district, independent of the City and County and provides Public Library services. It has four departments: Administration, Circulation, Children's Services and Adult Services. It is the District's intent to use the information provided by the bidders to present recommendations to the Library Board of Trustees.

PROPOSAL REQUIREMENTS

Proposals should be prepared with a detailed description of services to be provided with a straight forward and concise description of the bidder's ability to meet the requirements of the RFP. Proposals shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing proposal. Bidders are encouraged to provide clear, concise proposals that contain only information required to respond to the needs of this project. At a minimum, the proposal shall include the following:

1. General Information – The bidder shall provide general information describing the bidder size, office locations and relevant bidder capabilities.
2. Project Schedule – The bidder shall submit a proposed project schedule identifying key tasks and milestone dates and their associated duration.
3. Project Team – The bidder shall identify the team to be assigned to the project by name: this includes the project manager and other key team members. The bidder shall assign a primary representative and an alternate to perform the services described in the scope of work. The bidder's project manager shall remain in charge of all duties from contract negotiations through the completion of the contract. If the primary representative is unable to continue with the contract, then the alternate representative shall become the primary representative.
4. Experience/Qualifications – The bidder shall submit a copy of one recent similar contract that reflects the quality of their work. They shall also provide information on recent projects similar in nature to the proposed to document the bidder's expertise, experience and ability to complete the proposed project in a timely manner. A list of three references with name, address, phone number and contact person(s) shall also be provided.
5. Project Cost – The bidder shall provide a breakdown outlining the projected hours to be spent on each portion of services described in the Scope of Work. Project cost must include prevailing wages. The bidder selected must comply with the California's Prevailing Wage Law and Labor Compliance Program. The District will provide documents of the current prevailing wage determinations to the selected bidder submits a list of job classifications for said duties to be performed. Selected bidder and its subcontractors must copy and forward to the District in a timely manner certified payroll records for each workers. Bidder's invoices will therefore correspond to the specific deliverables identified.
6. Proof of Insurance – The successful bidder shall submit the appropriate Liability Insurance including, Worker's Compensation policy coverage to the satisfaction of the Placentia Library District.

The District intends to award a contract to a vendor that is able to provide quality work to its facility at 411 E. Chapman, Placentia, CA 92870 and offers the best value to the District. However, the District reserves the right to reject any or all proposals, in whole or in part, submitted in response to this RFP. The District further reserves the right to negotiate the terms and conditions of any final contract to purchase the item(s) described herein. Questions and requests for further information and/or clarification of the RFP should be directed to:

Administration
411 E. Chapman Avenue

Placentia, CA 92870
(714) 528-1925 x 216
administration@placentialibrary.org

PROJECT DESCRIPTION
Placentia Library District is seeking proposals from printing professionals to provide service and guidance to the District in order to help in raising awareness and engagement by the public through the District's eXPLORE newsletters and Summer Guide.

To review the District's current issue of the eXPLORE Newsletter, visit the following:

http://www.placentialibrary.org/sites/default/files/newsletters/Explore_Fall_2018_Web_005.pdf

SCOPE OF WORK-General Description
The selected bidder will produce and mail the District's two eXPLORE Newsletters and the Summer Guide in an effective, timely manner.

The work of the bidder shall include, but not be limited to, the following:

1. The production, postage and mailing of our bi-annually Newsletter to Placentia Residents.
   - The bidder must be able to print 21,000 copies of full page, full color newsletters ranging from 10-12 pages (September Issue)
   - The bidder must be able to print 21,000 copies of full page, full color newsletters ranging from 14-16 pages (March Issue).
   - The bidder must present a bid for both a yearly and a multi-year (2.5 year) contract.
   - The bidder must be capable of mailing the newsletters to all Placentia Residents and deliver all additional copies to the District.
   - The bidder must present a bid
2. The production, postage and mailing of the Summer Guide to Placentia Residents.
   - The bidder must be able to print 21,000 half page, full color Summer Guides ranging from 10-12 pages.
   - The bidder must present a bid for both a yearly and a multi-year (2-5 year) contract.
   - The bidder must be capable of mailing the newsletters to all Placentia Residents and deliver all additional copies to the District.
3. The bidder must be able to produce and deliver preliminary proofs in the following formats:
   - 80 gloss cover
   - 67 pound matte
   - 70 pound gloss text

QUALIFICATIONS/EXPERIENCE
Minimum of 5 years of printing experience.

CONDITIONS
Each Bidder is expected to get fully acquainted with the local conditions and factors, which would have any effect on the performance of the contract and/or the cost. The Bidder is expected to know all conditions and factors, which may have any effect on the execution of the contract after issue of Letter of Award. The bidder may request clarifications from the Placentia Library District regarding these conditions. It is the Bidder's responsibility that such factors have properly been investigated and considered while submitting the bid proposals and no claim whatsoever including those for financial adjustment to the contract awarded under the bidding documents will be entertained by the Placentia Library District. Neither any change in the time schedule of the contract nor any financial adjustments

arising thereof shall be permitted by the Placentia Library District on account of failure of the Bidder to know the local laws and conditions.

SELECTION PROCESS

By submitting and signing the proposal, the bidder acknowledges they have read, accept and agree to be bound by the terms and conditions of the proposal. The District shall have the right to waive informalities and irregularities in a proposal received and to accept the proposal which, in the District's judgment, is in the District's best interests.

Bid Opening will be December 6, 2018 at 2:00 p.m. at Placentia Library District – History Room at: 411 East Chapman Avenue, Placentia, CA 92870.

Successful bidders will be required to provide invoices for all completed work and submit to Placentia Library District at 411 E. Chapman Avenue, Placentia, CA 92870, Attention: Administration. The Library is open Monday-Thursday from 9:00 a.m. - 8:00 p.m., Friday and Saturday from 9:00 a.m. - 5:00 p.m. and Sunday from 1:00 p.m. - 5:00 p.m. The Administration staff is available Monday- Friday from 9:00 a.m. - 4:30 p.m.

No payments will be made to the Contractor until the current certificates of insurance have been received and approved by the Library Director. If the insurance as evidenced by certificates furnished by the Contractor expires or is cancelled during the term of the contract, services and related payments will be suspended. Contractor shall furnish the Placentia Library District Administration Office with certification of insurance evidencing such coverage and endorsements at least ten (10) working days prior to commencement of services under this contract. The District may exercise its authority to withhold payment and pass through penalty assessments that occur during the time of this project, to the contractor and its subcontractor, if the proper and certified payroll documents are not provided in a timely manner. Failure to provide proper and certified payroll documents will result in payment withholding.

Bid Tabulation
Placentia Library District eXPLORE Newsletter
1:00 p.m. -opened at 2:05

Contractor Name: Advantage Printing
Base Bid Price for eXPLORE 80 lb. 12 page issue: $5,761.06
Base Bid Price for eXPLORE 80 lb. 16 page issue: $5,565.56
Base Bid Price for Summer Guide 80 lb. 8 (5 3/8" x 8 3/8") page issue: $3,920.01
Base Bid Price for Summer Guide 80 lb. 12 (5 3/8" x 8 3/8") page issue: $5,123.06
Base Bid Price for Summer Guide 80 lb. 8 (5 1/2" x 8 1/2") page issue: 4,466.33
Base Bid Price for Summer Guide 80 lb. 12 (5 1/2" x 8 1/2") page issue: 5,488.83
Base Bid Price for Summer Guide 60 lb. 8 (5 3/8" x 8 3/8") page issue: 3,858.98
Base Bid Price for Summer Guide 60 lb. 12 (5 3/8" x 8 3/8") page issue: 5,027.55
Base Bid Price for Summer Guide 60 lb. 8 (5 1/2" x 8 1/2") page issue: 4,472.45
Base Bid Price for Summer Guide 60 lb. 12 (5 1/2" x 8 1/2") page issue: 5,451.87
Bid Form Complete/Signed: ✓

Contractor Name: _____
Base Bid Price eXPLORE: _____
Base Bid Price Summer Guide: _____
Bid Form Complete/Signed: _____

Contractor Name: _____
Base Bid Price eXPLORE: _____
Base Bid Price Summer Guide: _____
Bid Form Complete/Signed: _____

Contractor Name: _____
Base Bid Price eXPLORE: _____
Base Bid Price Summer Guide: _____
Bid Form Complete/Signed: _____

Contractor Name: _____
Base Bid Price eXPLORE: _____
Base Bid Price Summer Guide: _____
Bid Form Complete/Signed: _____

Reply all | Delete Junk | ...

Quotes attached

SO Scott Ogle
Today, 10:09 AM
astolze@placentialibrary.org

Reply all |

Sent Items

183608_02-1 Placentia L... 27 KB
183608_03-1 Placentia L... 27 KB
185535_01-1 Pl 27 KB

Show all 10 attachments (269 KB) Download all Save all to OneDrive - Advantage LLC

Alyssa,

Attached you will find our quotes for the eXPLORE magazine and Summer Guide. There are a number of quotes so I have listed the quote numbers below with a brief explanation.

Quote numbers 183608.02 & 183608.03 - These are revised quotes for the eXPLORE magazine. The previous one I had sent you were based upon a quantity of 19,000 with all pieces mailing. The new quote is based upon a quantity of 21,000 pieces with 17,400 mailing. Again this size was reduced from 8.5" x 10.875" to 8.375" x 10.875" which is a simple size reduction that we can do on our end and does not require any extra work from your graphic designer. This includes postage. It is listed on these quotes as Misc Hand Work.

Quote numbers 185535.01 & 185535 - These are quotes for the Summer Guide With the Cover on 80lb Gloss Cover and the text on 70lb gloss book. Quote number 185535.01 is for 8 pages of text with at 4 page cover. Quote number 185535 is for 12 pages of text with a 4 page cover. The size has been reduce to 5.375" x 8.375" to provide you the best price possible.

Quote numbers 185535.05 & 185535.04 are for the same specs as 185535.01 & 185535 but are quotes for your original size of 5.5" x 8.5" so you can see the difference in cost.

Quote numbers 185535.03 & 185535.02 - These are quotes for the Summer Guide With the Cover on 80lb Gloss Cover and the text on 60lb matte book. We cannot find a 67lb matte book. Quote number 185535.03 is for 8 pages of text with at 4 page cover. Quote number 185535.02 is for 12 pages of text with a 4 page cover. The size has been reduce to 5.375" x 8.375" to provide you the best price possible.

Quote numbers 185535.07 & 185535.06 are for the same specs as 185535.03 & 185535.02 but are quotes for your original size of 5.5" x 8.5" so you can see the difference in cost.

As far as multi-year contracts go, with the current marketplace it is difficult to tell what paper prices will be like over the next couple of years. 2 years ago a major paper mill (Westlinn) closed down and paper prices jumped as a result. We can honor a 1.5% increase per year on a 3 year contract as long as paper prices do not exceed 2% increase per year.

Placentia Library District
411 E. Chapman Ave.
Placentia, Ca. 92870

Advantage Printing, located at 1600 N. Kraemer Blvd. in Anaheim California has been in business for 24 years. Our Anaheim facility consists of 155,000 square feet of production area. We have over 20 presses on the site. Our bindery has 4 trimming stations and 5 stitchers. We have 10 ink jet stations and 11 tabbers.

This multiple sets of equipment allow us to move projects through the shop in the quickest possible way. Should a machine have a mechanical issue there is always another machine available to produce the projects

Our typical turn time is 8 working days from the time files are approved to the time we have the project in the mail or in your office. Since you are so close to us we should be able to save time in the proof approval process by hand delivering proofs to you and improve upon this turn time.

I personally will be main contact on the project. I will be assigning a customer service representative to handle the day to day communication with you.

Thank you for your consideration,
Scott Ogle
Advantage Print and Mail
949-6336-9090
sogle@Advantageinc.com

City References and Contract terms

City of Laguna Beach (quarterly pub)
515 Forest Avenue
Laguna Beach, Ca. 92651
Adam Gufarotti
Recreation Supervisor
949-497-0304
agufarotti@lagunabeachcity.net

City of Lake Forest (quarterly pub - 1 year contract with extensions – 34,000 copies print and mail)
25550 Commercentre Dr. Suite 100
Lake Forest , Ca. 92630
Brett Channing
949-461-3419
bchanning@lakeforestca.gov

City of South Gate (quarterly pub - 1 year contract with extensions – 28,000 copies print and mail)
4900 Southern Avenue
South Gate, Ca. 90280
Paul Adams
Director of Parks and Recreation
323-563-5478
padams@sogate.org

Saddleback Unified School District (3 issues per year - 1 year contract with extensions – 140,000 copies print and mail)
25631 Peter Hartman Way
Mission Viejo, Ca. 92691
Tasha Johansen
Community Services Supervisor
949-460-2730
Tasha.Johansen@svusd.org

Quote

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 183608.02
Date November 20, 2018

Project
Explore Magazine
12 pg book
4/4, 80# #3 gloss book
Stitch & trim to 8-3/8 x 10-7/8
17,400 = Bundle tie in 50's w/simplified facing slips FOB: Anaheim PO
3,600 = Carton pack FOB: Placentia CA 92870

** Includes Estimated Postage

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 8pg sig -HW	21,000		$93.99	/m	$1,973.72
**Printing - Prt- 4pg 2up -HW	21,000		$74.65	/m	$1,567.62
**Printing - Bindery	1		$687,516.10	/m	$687.52
DP EDDM/Simplified Paperwork	17,400	$25.00	$4.00	/m	$94.60
Deliver to Anaheim SCF	1		$75.00	ea	$75.00
Misc Hand Work	17,400		$0.07	ea	$1,287.60
Estimated Postage					
Deliver to Customer	1		$75.00	ea	$75.00
Total Cost for Services					**$5,761.06**
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2743		**$5,761.06**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

Due to market conditions the paper prices included in this quotation are based on current prices, and are subject to adjustment and availability at the time the paper stock is shipped from the mill. Any price increase will be reflected with an adjustment to this proposal or on the invoice rendered to you. **Over/under run of 5%** shall constitute an acceptable delivery and be billed accordingly. Print pricing does NOT include sales tax if applicable. Prices based on the information received at the time of the quote and are subject to change upon the receipt of the artwork..

Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account Manager

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Quote

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 183608.03
Date November 20, 2018

Project
Explore Magazine
16 pg book
4/4, 80# #3 gloss book
Stitch & trim to 8-3/8 x 10-7/8
17,400 = Bundle tie in 50's w/simplified facing slips FOB: Anaheim PO
3,600 = Carton pack FOB: Placentia CA 92870

** Includes Estimated Postage

Quantity of: 21,000

Services	***Quantity***	***Setup***	***Rate***	***per***	***Price***
**Printing - Prt- 16pg sig -FW	21,000		$164.24	/m	$3,448.98
**Printing - Bindery	1		$584,382.90	/m	$584.38
DP EDDM/Simplified Paperwork	17,400	$25.00	$4.00	/m	$94.60
Deliver to Anaheim SCF	1		$75.00	ea	$75.00
Misc Hand Work	17,400		$0.07	ea	$1,287.60
Estimated Postage					
Deliver to Customer	1		$75.00	ea	$75.00
Total Cost for Services					**$5,565.56**
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2650		**$5,565.56**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

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Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account Manager

Quote

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.01
Date November 27, 2018

Project
Summer Guide
4 cvr + 8 pg digest
Cvr- 4/4 + oa gloss AQ bothsides, 80# gloss cover
Text- 70# #3 gloss book
Stitch & trim to 5-3/8 x 8-3/8
Carton pack FOB: Placentia CA 92870

Quantity of *21,000*

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8/8 a/a -HW	21,000		$56.01	/m	$1,176.11
**Printing - Bindery	1				$795.29
Deliver to Customer *Placentia CA 92870*	1		$75.00	ea	$75.00
Total Estimated Project Cost	21,000	***Unit Price:***	$0.1867		**$3,920.01**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

Due to market conditions the paper prices included in this quotation are based on current prices, and are subject to adjustment and availability at the time the paper stock is shipped from the mill. Any price increase will be reflected with an adjustment to this proposal or on the invoice rendered to you. Over/under run of 5% shall constitute an acceptable delivery and be billed accordingly. Print pricing does NOT include sales tax if applicable. Prices based on the information received at the time of the quote and are subject to change upon the receipt of the artwork..

Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

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1600 N. Kraemer Blvd.
Anahelm, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.
Date November 27, 2018

Project
Summer Guide
4 cvr + 12 pg digest
Cvr- 4/4 + oa gloss AQ both sides, 80# gloss cover
Text- 70# #3 gloss book
Stitch & trim to 5-3/8 x 8-3/8
Carton pack FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8/8 a/a -HW	21,000		$56.01	/m	$1,176.11
**Printing - Prt- 4pg 4up -HW	21,000		$56.45	/m	$1,185.49
**Printing - Bindery	1				$812.85
Deliver to Customer	1		$75.00	ea	$75.00
Placentia CA 92870					
Total Estimated Project Cost	21,000	*Unit Price:*	$0.2440		$5,123.06

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

Due to market conditions the paper prices included in this quotation are based on current prices, and are subject to adjustment and availability at the time the paper stock is shipped from the mill. Any price increase will be reflected with an adjustment to this proposal or on the invoice rendered to you. **Over/under run of 5%** shall constitute an acceptable delivery and be billed accordingly. Print pricing does NOT include sales tax if applicable. Prices based on the information received at the time of the quote and are subject to change upon the receipt of the artwork..

Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

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411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.05
Date November 27, 2018

Project
Summer Guide
4 cvr + 8 pg digest.
Cvr- 4/4 + oa gloss AQ bothsides, 80# gloss cover
Text- 70# gloss book
Stitch & trim to 5-1/2 x 8-1/2
Carton Pack FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8pg form -H	21,000		$81.99	/m	$1,721.86
**Printing - Bindery	1				$795.86
Deliver to Customer *Placentia CA 92870*	1		$75.00	ea	$75.00
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2127		**$4,466.33**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

Due to market conditions the paper prices included in this quotation are based on current prices, and are subject to adjustment and availability at the time the paper stock is shipped from the mill. Any price increase will be reflected with an adjustment to this proposal or on the invoice rendered to you. **Over/under run of 5%** shall constitute an acceptable delivery and be billed accordingly. Print pricing does NOT include sales tax if applicable. Prices based on the information received at the time of the quote and are subject to change upon the receipt of the artwork..

Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.04
Date November 27, 2018

Project
Summer Guide
4 cvr + 12 pg digest
Cvr- 4/4 + oa gloss AQ both sides, 80# gloss cover
Text- 70# gloss book
Stitch & trim to 5-1/2 x 8-1/2
Carton pack FOB: Placentia,CA 92870

Quantity of ***21,000***

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 12pg form -H	21,000		$130.09	/m	$2,731.95
**Printing - Bindery	1				$807.87
Deliver to Customer	1		$75.00	ea	$75.00
Placentia CA 92870					
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2614		**$5,488.43**

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Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer
Dave Werline
Account ManagerSales Rep

Quote

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1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.03
Date November 27, 2018

Project
Summer Guide
4 cvr + 8 pg digest
Cvr- 4/4 + oa gloss AQ bothsides, 80# gloss cover
Text- 60# #3 satin book
Stitch & trim to 5-3/8 x 8-3/8
Carton pack FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8/8 a/a -HW	21,000		$53.39	/m	$1,121.25
**Printing - Bindery	1				$789.02
Deliver to Customer *Placentia CA 92870*	1		$75.00	ea	$75.00
Total Estimated Project Cost	21,000	***Unit Price:***	$0.1838		**$3,858.88**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

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Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.02
Date November 27, 2018

Project
Summer Guide
4 cvr + 12 pg digest
Cvr- 4/4 + oa gloss AQ both sides, 80# gloss cover
Text- 60# #3 satin book
Stitch & trim to 5-3/8 x 8-3/8
Carton pack FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8/8 a/a -HW	21,000		$53.39	/m	$1,121.25
**Printing - Prt- 4pg 4up -HW	21,000		$54.98	/m	$1,154.58
**Printing - Bindery	1				$803.11
Deliver to Customer	1		$75.00	ea	$75.00
Placentia CA 92870					

Total Estimated Project Cost	21,000	*Unit Price:*	$0.2394	$5,027.55

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

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Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

ADVANTAGE
PRINTING • MAILING • MARKETING
1600 N. Kraemer Blvd.
Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.07
Date November 27, 2018

Project
Summer Guide
4 cvr + 8 pg digest
Cvr- 4/4 + oa gloss AQ both sides, 80# gloss cover
Text- 60# silk book
Stitch & trim to 5-1/2 x 8-1/2
Carton - FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 8pg form -H	21,000		$84.18	/m	$1,767.85
**Printing - Bindery	1				$755.99
Deliver to Customer *Placentia CA 92870*	1		$75.00	ea	$75.00
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2130		**$4,472.45**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

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Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

Quote

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Anaheim, CA 92806
Phone: (714) 538-3881 · Fax: (714) 632-8534

Alyssa Stolze
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
Ph: *Fax:*

Quote 185535.06
Date November 27, 2018

Project
Summer Guide
4 cvr + 12 pg digest
Cvr- 4/4 + oa gloss AQ both sides, 80# gloss cover
Text- 60# silk book
Stitch & trim to 5-1/2 x 8-1/2
Carton Pack FOB: Placentia CA 92870

Quantity of 21,000

Services	*Quantity*	*Setup*	*Rate*	*per*	*Price*
**Printing - Prt- 4cvr 8up -H	21,000		$89.22	/m	$1,873.61
**Printing - Prt- 12pg form -H	21,000		$128.82	/m	$2,705.21
**Printing - Bindery	1				$798.05
Deliver to Customer	1		$75.00	ea	$75.00
Placentia CA 92870					
Total Estimated Project Cost	21,000	***Unit Price:***	$0.2596		**$5,451.87**

Quotation SUBJECT to re-quote upon receipt of customer artwork, film or mail piece. Postage MUST be received prior to drop. Actual postage may vary from estimate.

Due to market conditions the paper prices included in this quotation are based on current prices, and are subject to adjustment and availability at the time the paper stock is shipped from the mill. Any price increase will be reflected with an adjustment to this proposal or on the invoice rendered to you. **Over/under run of 5%** shall constitute an acceptable delivery and be billed accordingly. Print pricing does NOT include sales tax if applicable. Prices based on the information received at the time of the quote and are subject to change upon the receipt of the artwork..

Customer Signature: _____ Submitted by: _____ Sales Rep.

Title: _____ By: _____ Authorized Officer

Dave Werline
Account ManagerSales Rep

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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Discussion of Educational Assistance requests from Fernando Maldonado, Interim Business Manager and Christie Hwang, Library Aide**

DATE: December 18, 2018

BACKGROUND

The Placentia Library District offers educational assistance for the Library and Information Science Master's Degree and job-related college courses as per Policy 2120 – Educational Assistance. Employees must seek the Library Director's approval prior to course enrollment and must receive a grade of "B" or better for receive the $1,500 maximum reimbursement per calendar year. Courses with a "C" are eligible for half the cost of tuition or $750.

The Library has received two educational assistance reimbursement requests from Fernando Maldonado, Interim Business Manager and Christie Hwang, Library Aide.

Attachment A is Fernando Maldonado's request and supporting documents.

Attachment B is Christie Hwang's request and supporting documents.

Fiscal Impact: $5,250

RECOMMENDATIONS

1. Approve $2,250 and $3,000 educational assistance reimbursement requests as presented for Fernando Maldonado and Christie Hwang, respectively.

2. Roll call vote.

Fernando Maldonado

fernandolopezmaldonado@yahoo.com

December 12, 2018

Jeanette Contreras – Library Director
Placentia Library District
411 E. Chapman Ave.
Placentia, CA 92870
jcontreras@placentialibrary.org

Re: Policy 2120: Educational Assistance

Dear Library Director Mrs. Contreras,

The purpose of my letter is to complete a formal request to the Placentia Library District for an educational assistance request on my behalf. Having completed my MBA (Master of Business Administration) in May of this year, and understanding the guidelines as stated in Policy 2120: Educational Assistance, I feel I qualify for this benefit offered by the District.

The MBA programs' class core I completed included subjects such as Accounting, Finance, Human Resources, Marketing, Project/IT Management, among other quantitative based courses. In the beginning of the program, and even at completion, I realized these classes where not part of the MLIS curriculum, or related to my responsibilities at the time. However, in this new role filling in as the Business Manager, my stance has changed. Under this new role most of the core classes described above have supplemented my work, provided me tools to effectively work, or this newly acquired knowledge has given me a foundational base to act on and provide the organization with the best possible decisions now and in the future.

I understand it's a late request, and per policy, I am requesting half of the allowed request for the years I attended school, therefore, I am requesting a total of $2,250.00.

Year 2016	$750.00
Year 2017	$750.00
Year 2018	$750.00 (Graduating Year)
Grand Total	**$2,250.00**

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Adoption of Resolution 18-03: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Establish the Board of Trustee Regular Meeting Dates for Calendar Year 2019.**

DATE: December 18, 2018

BACKGROUND
The current date and time is the third Monday of each month at 6:30 p.m.

Below are the 2019 observed Federal Holidays:

Holiday Schedule

Date	Holiday
Tuesday, January 1	New Year's Day
Monday, January 21	Birthday of Martin Luther King, Jr.
Monday, February 18*	Washington's Birthday
Monday, May 27	Memorial Day
Thursday, July 4	Independence Day
Monday, September 2	Labor Day
Monday, October 14	Columbus Day
Monday, November 11	Veterans Day
Thursday, November 28	Thanksgiving Day
Wednesday, December 25	Christmas Day

The Library currently observes all the above holidays with the exception of:

- Martin Luther King, Jr. January 15
- Columbus Day October 8

In addition, the Library is also closed on December 24th for Christmas Eve and December 31st for New Year's Eve.

Please refer to Attachment A for 2019 Calendar and recommended meeting dates.

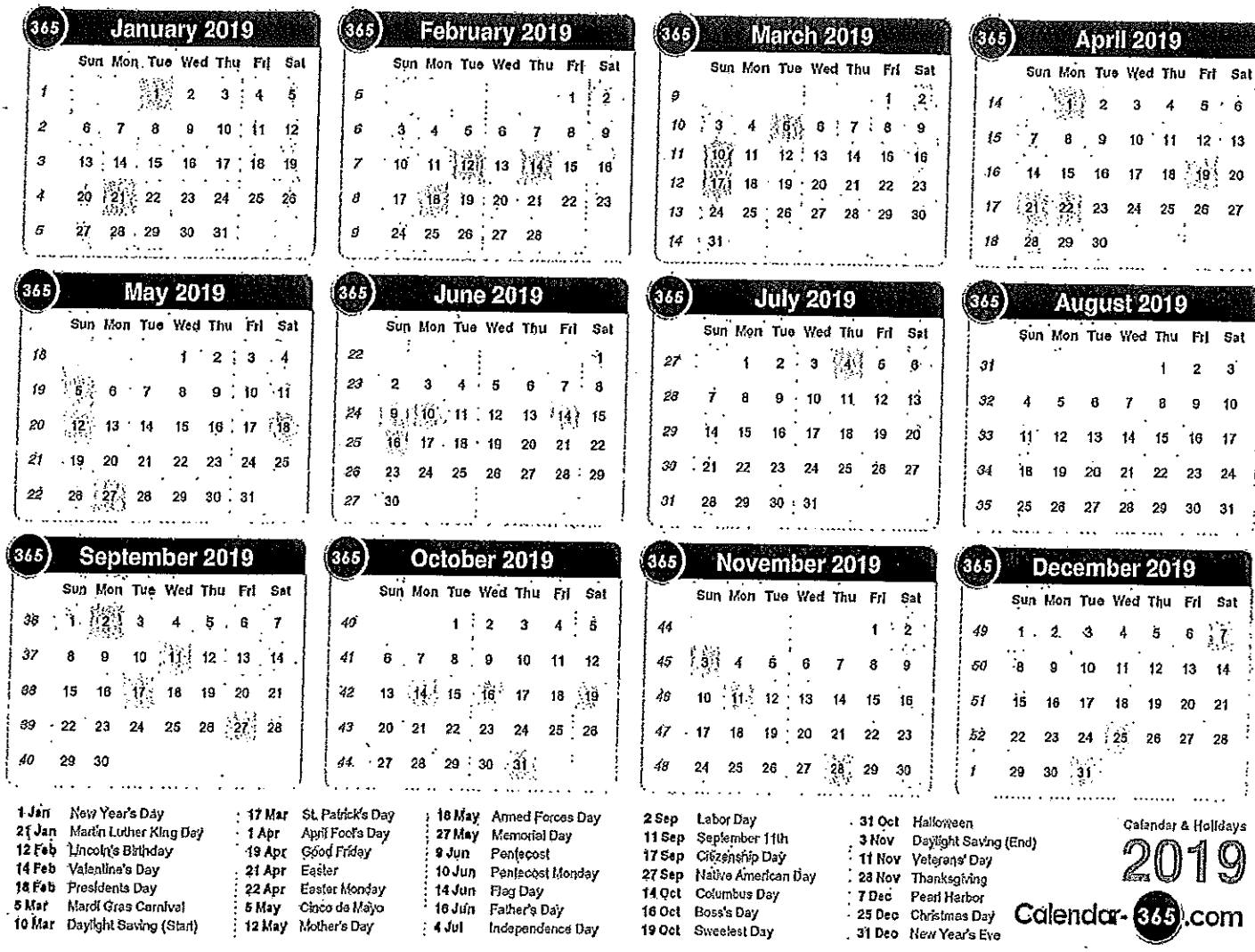
Attachment B is Resolution 18-03: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Establish the Board of Trustee Regular Meeting Dates for Calendar Year 2019.

RECOMMENDATIONS

1. Determine the regular meeting dates and time for 2019.

2. Read Resolution 18-03 by Title only: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Establish the Board of Trustee Regular Meeting Dates for Calendar Year 2019.

3. Adopt Resolution 18-03.



January 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1			1	2	3	4	5
2	6	7	8	9	10	11	12
3	13	14	15	16	17	18	19
4	20	21	22	23	24	25	26
5	27	28	29	30	31		

February 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
5						1	2
6	3	4	5	6	7	8	9
7	10	11	12	13	14	15	16
8	17	18	19	20	21	22	23
9	24	25	26	27	28		

March 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
9						1	2
10	3	4	5	6	7	8	9
11	10	11	12	13	14	15	16
12	17	18	19	20	21	22	23
13	24	25	26	27	28	29	30
14	31						

April 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
14		1	2	3	4	5	6
15	7	8	9	10	11	12	13
16	14	15	16	17	18	19	20
17	21	22	23	24	25	26	27
18	28	29	30				

May 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
18				1	2	3	4
19	5	6	7	8	9	10	11
20	12	13	14	15	16	17	18
21	19	20	21	22	23	24	25
22	26	27	28	29	30	31	

June 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
22							1
23	2	3	4	5	6	7	8
24	9	10	11	12	13	14	15
25	16	17	18	19	20	21	22
26	23	24	25	26	27	28	29
27	30						

July 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
27		1	2	3	4	5	6
28	7	8	9	10	11	12	13
29	14	15	16	17	18	19	20
30	21	22	23	24	25	26	27
31	28	29	30	31			

August 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
31					1	2	3
32	4	5	6	7	8	9	10
33	11	12	13	14	15	16	17
34	18	19	20	21	22	23	24
35	25	26	27	28	29	30	31

September 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
36	1	2	3	4	5	6	7
37	8	9	10	11	12	13	14
38	15	16	17	18	19	20	21
39	22	23	24	25	26	27	28
40	29	30					

October 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
40			1	2	3	4	5
41	6	7	8	9	10	11	12
42	13	14	15	16	17	18	19
43	20	21	22	23	24	25	26
44	27	28	29	30	31		

November 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
44						1	2
45	3	4	5	6	7	8	9
46	10	11	12	13	14	15	16
47	17	18	19	20	21	22	23
48	24	25	26	27	28	29	30

December 2019

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
49	1	2	3	4	5	6	7
50	8	9	10	11	12	13	14
51	15	16	17	18	19	20	21
52	22	23	24	25	26	27	28
1	29	30	31				

1 Jan	New Year's Day	17 Mar	St. Patrick's Day	18 May	Armed Forces Day	2 Sep	Labor Day
21 Jan	Martin Luther King Day	1 Apr	April Fool's Day	27 May	Memorial Day	11 Sep	September 11th
12 Feb	Lincoln's Birthday	19 Apr	Good Friday	9 Jun	Pentecost	17 Sep	Citizenship Day
14 Feb	Valentine's Day	21 Apr	Easter	10 Jun	Pentecost Monday	27 Sep	Native American Day
18 Feb	Presidents Day	22 Apr	Easter Monday	14 Jun	Flag Day	14 Oct	Columbus Day
5 Mar	Mardi Gras Carnival	5 May	Cinco de Mayo	16 Jun	Father's Day	16 Oct	Boss's Day
10 Mar	Daylight Saving (Start)	12 May	Mother's Day	4 Jul	Independence Day	19 Oct	Sweetest Day

31 Oct	Halloween	Calendar & Holidays	
3 Nov	Daylight Saving (End)	2019	
11 Nov	Veterans' Day		
28 Nov	Thanksgiving	Calendar-365.com	
7 Dec	Pearl Harbor		
25 Dec	Christmas Day		
31 Dec	New Year's Eve		

RECOMMENDED BOARD MEETING DATES FOR 2019:

Monday, January 21st (Martin Luther King Day, Library is open)
Tuesday, February 19th (President's Day on February 18th, Library is closed)
Monday, March 18th
Monday, April 15th
Monday, May 20th
Monday, June 17th
Monday, July 15th
Monday, August 19th
Monday, September 16th
Monday, October 21st
Monday, November 18th
Monday, December 16th

RESOLUTION 18-03

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE PLACENTIA LIBRARY DISTRICT OF ORANGE COUNTY TO ESTABLISH THE BOARD OF TRUSTEES REGULAR MEETING DATES FOR CALENDAR YEAR 2019

WHEREAS, Placentia Library District is an independent special library district established under the provisions of California Education Code Sections 19600-19664;

WHEREAS, Section 54954 of the Government Code of the State of California requires that the Board of Library Trustees shall provide, by ordinance, resolution, bylaws, or by whatever other rule is required for the conduct of business by that body, the time and place for holding regular meetings;

BE IT RESOLVED, that the Placentia Library District of Orange County Board Of Trustees establishes the third Monday of each month at 6:30 P.M., the Regular Board Meeting for Calendar Year 2019, dated December 18, 2018.

AYES:

NOES:

ABSENT:

ABSTAIN:

State of California)

)ss.

County of Orange)

I, _____, Secretary of the Board of Trustees of the Placentia Library District Of Orange County hereby certify that the above and foregoing Resolution was duly and regularly adopted by the Board of Trustees at a Unusual Date Meeting hereof held on the Eighteenth day of December 2018.

IN WITNESS THEREOF, I have hereunto set my hand and seal this Eighteenth day of December 2018.

_____, Secretary
Placentia Library District Board of Trustees

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Adoption of Resolution 18-04: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Certify the Appointments for the Office of Trustee of the Placentia Library District; Administration of the Oath of Office.**

DATE: December 18, 2018

BACKGROUND

On November 30th, 2018 Orange County Registrar of Voters Neal Kelley issued the Certificate of Appointment in Lieu of Election to Ms. Jo-Anne W. Martin and Mr. Al Shkoler to a four-year term to the Placentia Library Board of Trustee. A resolution certifying the appointment is submitted for Board adoption. The appointment will also be entered into the Board minutes as required by law.

Attachment A is Resolution 18-04.

Attachment B is the Certificate of Appointment in Lieu of Election.

Attachment C is the Oath of Office.

RECOMMENDATIONS

1. Adopt Resolution 18-04: A Resolution of the Board of Trustees of the Placentia Library District of Orange County to Certify the Appointments for the Office of Trustee of the Placentia Library District;

2. Direct the Library Director to administer the Oath of Office to the Library Board members as appointed and present Certificate of Appointment;

3. Roll Call.

RESOLUTION 18-04

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE PLACENTIA LIBRARY DISTRICT OF ORANGE COUNTY TO CERTIFY THE APPOINTMENTS FOR THE OFFICE OF TRUSTEE OF THE PLACENTIA LIBRARY DISTRICT

WHEREAS, three seats in the Placentia Library District were up for election in the Presidential General Election held on November 6, 2018;

WHEREAS, on December 5, 2018, Orange County Registrar of Voters, Neal Kelley certified the appointments of Jo-Anne W. Martin and Al Shkoler for the office of Trustee of the Placentia Library District;

WHEREAS, the appointments in lieu of election will support compliance with Elections Code Section 10515;

BE IT RESOLVED, that the Placentia Library District of Orange County Board of Trustees, does resolve, declare, determine that Jo-Anne W. Martin and Al Shkoler have been certified to serve a four-year term of office for the Placentia Library District.

AYES:

NOES:

ABSENT:

ABSTAIN:

State of California)

)ss.

County of Orange)

I, _____, Secretary of the Board of Trustees of the Placentia Library District of Orange County hereby certify that the above and foregoing Resolution was duly and regularly adopted by the Board of Trustees at a Regular Meeting hereof held on the Eighteenth day of December 2018.

IN WITNESS THEREOF, I have hereunto set my hand and seal this Eighteenth day of December 2018.

_____

_____, Secretary
Placentia Library District Board of Trustees

CERTIFICATE OF APPOINTMENT IN LIEU OF ELECTION

STATE OF CALIFORNIA)
)ss.
COUNTY OF ORANGE)

I, Neal Kelley, Registrar of Voters of Orange County, do hereby certify that Jo Anne W. Martin, whose address is 231 Downey Ln., Placentia, CA 92870, was the only nominee for the office of Trustee of the PLACENTIA LIBRARY DISTRICT. Pursuant to California Elections Code section 10515, Jo Anne W. Martin will be appointed to this position by the Orange County Board of Supervisors, in lieu of election and shall be seated at the organizational meeting of the board. This term of office ends December 2, 2022.

WITNESS my hand and Official Seal this 30th day of November, 2018.

COUNTY OF ORANGE CALIFORNIA

NEAL KELLEY
Registrar of Voters
Orange County

CERTIFICATE OF APPOINTMENT IN LIEU OF ELECTION

STATE OF CALIFORNIA)
)ss.
COUNTY OF ORANGE)

I, Neal Kelley, Registrar of Voters of Orange County, do hereby certify that Al Shkoler, whose address is 1120 Cypress Point Dr., Placentia, CA 92870, was the only nominee for the office of Trustee of the PLACENTIA LIBRARY DISTRICT. Pursuant to California Elections Code section 10515, Al Shkoler will be appointed to this position by the Orange County Board of Supervisors, in lieu of election and shall be seated at the organizational meeting of the board. This term of office ends December 2, 2022.

WITNESS my hand and Official Seal this 30th day of November, 2018.

COUNTY OF ORANGE CALIFORNIA

NEAL KELLEY
Registrar of Voters
Orange County

OATH OF OFFICE
FOR PUBLIC OFFICERS AND EMPLOYEES
(State Constitution, Art. XX. Sec.3 as amended)

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Jo-Anne Martin *, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States and the Constitution of the State of California against all enemies, foreign and domestic; that I will bear true faith and allegiance to the Constitution of the United States and the Constitution of the State of California; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties upon which I am about to enter.*

_____

_____
Signature

Subscribed and sworn to before me this 18th *day of* December, *20*18.

_____
Signature of Person Administering Oath

Trinh Contreras Library Director
Printed Name and Title of Person Administering Oath

OATH OF OFFICE
FOR PUBLIC OFFICERS AND EMPLOYEES
(State Constitution, Art. XX. Sec.3 as amended)

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Al Shkoler *, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States and the Constitution of the State of California against all enemies, foreign and domestic; that I will bear true faith and allegiance to the Constitution of the United States and the Constitution of the State of California; that I take this obligation freely, without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties upon which I am about to enter.*

_____

Signature

Subscribed and sworn to before me this 18th *day of* December, *20* 18.

_____
Signature of Person Administering Oath

Trinh Contreras Library Director
Printed Name and Title of Person Administering Oath

PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Election of Board Officers**

DATE: December 18, 2018

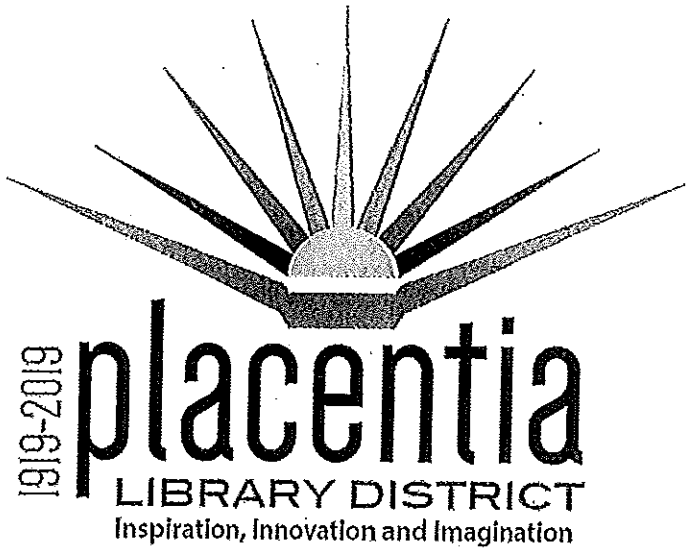
BACKGROUND

The following positions need to be elected:

President (Incumbent is President Carline)
Secretary (Incumbent is Secretary Martin)

RECOMMENDATION

Elect a Library Board President and a Library Board Secretary for 2019.



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PLACENTIA LIBRARY DISTRICT BOARD OF TRUSTEES

TO: Library Board of Trustees

FROM: Jeanette Contreras, Library Director

SUBJECT: **Appointment of Library Board Representatives for 2019 by the Board President**

DATE: December 18, 2018

BACKGROUND

The following positions need to be appointed:
Incumbents are italicized.

Joint Use Agreement Committee
President Carline and Trustee Minter with Director Contreras

Representative to Special District Local Area Formation Commission (LAFCO) Selection Committee
Trustee Shkoler and Trustee Martin as alternate

Representative to the Orange County Council of Governments
Trustee DeVecchio

Representative to the Placentia Library Friends Foundation (PLFF)
President Carline and Trustee Martin as alternate

Independent Special Districts of Orange County (ISDOC)
Trustee Minter

Personnel Committee
President Carline and Trustee Shkoler

Redevelopment Successor Agency Oversight Board
Trustee Shkoler

Library staff will continue to represent the Placentia Library District at the Placentia Community Collaborative (formerly Network).

RECOMMENDATION

Appoint Library Board Representatives for 2019.