

CITY OF LOS ALAMITOS
Council Chamber
3191 Katella Ave., Los Alamitos CA 90720

BUDGET STANDING COMMITTEE
AGENDA SPECIAL MEETING

Monday, October 9, 2023 – 4:30 PM

NOTICE TO THE PUBLIC – This Agenda contains a brief general description of each item to be considered. Except as provided by law, action or discussion shall not be taken on any item not appearing on the agenda. Supporting documents, including staff reports, are available for review at City Hall in the City Clerk's Office or on the City's website at www.cityoflosalamitos.org once the agenda has been publicly posted.

Each matter on the agenda, no matter how described, shall be deemed to include any appropriate motion, whether to adopt a minute motion, resolution, payment of any bill, approval of any matter or action, or any other action. Items listed as "for information" or "for discussion" may also be the subject of an "action" taken by the Budget Standing Committee at the same meeting.

Any written materials relating to an item on this agenda submitted to the Budget Standing Committee after distribution of the agenda packet are available for public inspection online at www.cityoflosalamitos.org.

It is the intention of the City of Los Alamitos to comply with the Americans with Disabilities Act (ADA) in all respects. If, as an attendee, or a participant at this meeting, you will need special assistance beyond what is normally provided, please contact the City Clerk's Office at (562) 431-3538, extension 220, 48 hours prior to the meeting so that reasonable arrangements may be made.

1. CALL TO ORDER

2. ROLL CALL

Mayor Tanya Doby
Council Member Shelley Hasselbrink

3. ORAL COMMUNICATIONS

At this time, any individual in the audience may come forward to speak on any item within the subject matter jurisdiction of the Budget Standard Committee. Remarks are to be limited to not more than five minutes per speaker.

4. CONSENT CALENDAR

All Consent Calendar items may be acted upon by one motion unless a Committee Member requests separate action on a specific item.

A. Approval of Minutes

Approve the Budget Standing Committee Special Meeting Minutes of September 11, 2023.

5. DISCUSSION ITEM

A. Review and Discuss Accelerated Warrant Report (Finance)

This report provides information in connection with a proposed acceleration of the Warrant Report.

Recommendation: Approve the proposed accelerated distribution of the Warrant Register.

B. Review and Discuss Additional Staffing Needs (Finance)

Administrative demands have grown with additional projects and increased workload. As such, an additional Department Secretary is needed.

Recommendation: It is recommended that the Budget Standing Committee approve staffing for an additional Department Secretary.

C. Laserfiche for Police Department (Finance)

Consider the addition of Laserfiche for the Police Department.

Recommendation: It is recommended that the Budget Standing Committee approve the purchase of Laserfiche Cloud Professional for the Police Department.

D. Quimby In-Lieu Fees (Development Services)

Discussion of a recommended update to the In-Lieu Fees Pursuant to the Quimby Act.

Recommendation: Discuss and provide Staff direction

E. Community Center Roof Project (Development Services)

The roof of the Community Center building has incurred significant damage from storms in the beginning of 2023. This item recommends actions to begin facilitating the repairs of the roof and damaged infrastructure.

Recommendation:

1. Carryover \$500,000 that Council approved at the March 20, 2023 Council Meeting; and,

2. Authorize the City Manager to execute the contract for the project in a form to be approved by the City Attorney for an additional amount of \$1,290,952 for a total amount not to exceed \$1,790,952.

6. CLOSED SESSION

A. PUBLIC EMPLOYEE PERFORMANCE EVALUATION (Administration)

Title: City Manager

Authority: Government Code Section 54957

B. CONFERENCE WITH LABOR NEGOTIATOR (Administration)

City Negotiator: Chet Simmons, City Manager

Employee Organization: Executive Management, Non-Represented

Authority: Government Code Section 54957.6

7. ITEMS FROM STAFF AND THE COMMITTEE

At this time, Committee Members and Staff may also report on items not specifically described on the Agenda that are of interest to the community, provided no action or discussion is taken except to provide Staff direction to report back or to place the item on a future Agenda.

8. ADJOURNMENT

I hereby certify under penalty of perjury under the laws of the State of California, that the foregoing Agenda was posted at the Los Alamitos City Hall, 3191 Katella Ave. and online at www.cityoflosalamitos.org not less than 72 hours prior to the meeting.

Craig Koehler, Finance Director

Dated: October 5, 2023

MINUTES OF THE BUDGET STANDING COMMITTEE OF THE CITY OF LOS ALAMITOS

SPECIAL MEETING

Monday September 11, 2023 – 4:30 p.m.

1. CALL TO ORDER

The Budget Standing Committee met for a Special Meeting at 4:34 p.m., Monday, June 5, 2023, Mayor Doby and Council Member Hasselbrink presiding.

2. ROLL CALL

Present: Committee Members: Mayor Doby
Council Member Hasselbrink

Absent: Committee Members: None

Present: Staff: Chet Simmons, City Manager
Craig Koehler, Finance Director
Ron Noda, Deputy City Manager and
Development Services Director
Emeline Noda, Recreation and
Community Services Director
Irving Montenegro, Development
Services Manager

3. Oral Communications

None to report.

4. CONSENT CALENDAR

A. Approval of Minutes

Motion/Second: Doby/Hasselbrink

Unanimously Carried: The Budget Standing Committee approved the Minutes of the Special Meeting of June 5, 2023.

5. DISCUSSION ITEMS

A. Review and Discuss Proposed Revisions to the Purchasing Policy (Finance)

Staff provided the Committee with an overview of the proposed changes to the Purchasing Policy. The Committee recommended forwarding the draft Purchasing Policy to Council for adoption with the noted change.

B. Review and Discuss UAL Additional Discretionary Payment Analysis (Finance)

The Committee received an update to the PERS Unfunded Accrued Liability, and requested staff to return with additional analysis for the November meeting.

C. Review and discuss Finance projects on the horizon. (Finance)

The Committee received a report on the Finance department and an overview of projects underway and on the horizon.

D. Conversion of Three Part-Time Positions to Full-Time positions in Recreation and Community Services (Recreation)

Staff presented the Committee with an overview of a Senior Services Master Plan and approved a request for conversion of three part-time Community Services Coordinators to full-time to cover the expansion of Recreation programs.

E. Consideration to Fund Insurance Costs for Los Alamitos Community Foundation and Los Alamitos Senior Club (Recreation)

The Committee received a report on a request to fund insurance costs for The Los Alamitos Community Foundation and Los Alamitos Senior Club. The request was approved to also include insurance coverage for the Museum.

F. Revive Los Alamitos Building Greater Los AI (Development Services)

Staff provided the Committee with an update for the Los AI Facade Improvement Program (formerly Build a Greater Los AI). Staff will prepare a report for the October Council meeting.

6. ITEMS FROM THE COMMITTEE

None to report.

7. CLOSED SESSION

A. CONFERENCE WITH LABOR NEGOTIATOR

City Negotiator:	Chet Simmons, City Manager
Employee Organization:	Los Alamitos Police Officers Association
Authority:	Government Code Section 54957.6

B. CONFERENCE WITH LABOR NEGOTIATOR

City Negotiator: Chet Simmons, City Manager
Employee Organization: Teamsters Local 911
Authority: Government Code Section 54957.6

C. CONFERENCE WITH LABOR NEGOTIATOR

City Negotiator: Chet Simmons, City Manager
Unrepresented Employees: Executive Management, Middle
Management and Non-Management
Employees
Authority: Government Code Section 54957

8. ADJOURNMENT

The meeting adjourned at 6:00 p.m.

Craig Koehler, Finance Director

City of Los Alamitos

BUDGET STANDING COMMITTEE AGENDA REPORT

MEETING DATE: October 9, 2023

ITEM NUMBER: 5A

To: Budget Standing Committee Members

Presented By: Craig Koehler, Director of Finance

Subject: Review and Discuss Accelerated Warrant Report

SUMMARY

This report provides information in connection with a proposed acceleration of the Warrant Report.

RECOMMENDATION

Approve the proposed accelerated distribution of the Warrant Register.

BACKGROUND

The Warrant Report is provided to the Council on a consent basis and covers checks and electronic funds transfers for the previous month or period (i.e. September 1, 2023 through September 30, 2023). The Director of Finance certifies the accuracy of the warrants and the availability of funds for payment.

DISCUSSION

The Warrent Register is a generally accepted municipal accounting tool used to highlight a city's expenditures over a set period of time. While it is a helpful summary of a city's expenditures, there is often background or explanation needed in order to highlight the purpose of individual expenditures. While the staff diligently works in order to ensure they are prepared to answer any and all questions raised at City Council meetings, these registers can often contain between 200 to 300 different line items generated from the City's various departments and divisions. Given the desire to ensure that all information that is being provided is well researched and accurate, the Budget Standing Committee has developed the following policy in order to create greater transparency and to better facilitate the flow of this information.

As is customary in all cities, agendas and the related warrant registers are normally posted 72 hours before a City Council meeting. In an effort to provide more time for review, the Budget Standing Committee is recommending that the City adopt an accelerated timeline in order to provide the City Council with access to the Warrant Register on the Monday prior to the City Council meeting. For example, for the November City Council meeting, the Warrant Register would be provided to the City Council on Monday, November 13th, one week prior to the November 20th meeting date. This accelerated timeline would provide City Council members with an opportunity to review the Warrent Register and submit any related questions to the City's Finance Department in advance of the meeting. In doing so, those questions can be

properly researched and answered.

Under this accelerated timeline, Council members would be asked to submit their warrant related questions to the Finance Department prior to the close of business on the Thursday prior to the next City Council meeting. In the example used above, this would mean by Thursday, November 16th. Staff would then research the questions asked and provide responses to the entire City Council prior to the City Council meeting on Monday, November 20th. As these questions are often asked in order to highlight or underscore different expenditures that might be of interest to the public, Council members would then be able to ask these questions again at the Council meeting should they choose to. Any question not received by the Thursday deadline would then be researched and have their answers provided prior to the next City Council meeting. In accordance with the current information dissemination protocols, answers to any warrant questions will be provided to all Council members.

FISCAL IMPACT

None.

Attachment: None

City of Los Alamitos

BUDGET STANDING COMMITTEE AGENDA REPORT

MEETING DATE: October 9, 2023

ITEM NUMBER: 5B

To: Budget Standing Committee Members

Presented By: Craig Koehler, Director of Finance

Subject: Review and Discuss Additional Staffing Needs

SUMMARY

Administrative demands have grown with additional projects and increased workload. As such, an additional Department Secretary is needed.

RECOMMENDATION

It is recommended that the Budget Standing Committee approve staffing for an additional Department Secretary.

BACKGROUND

Administrative demands have grown with additional projects and increased workload. As such, an additional Department Secretary is needed. The proposed position would provide secretarial and administrative support to multiple areas, and would be shared by Administrative Services, City Clerk, and Finance.

DISCUSSION

Corresponding costs would be included in the Mid-Year Budget discussions and would result in a fraction of the estimated full burden cost for FY2023-24.

FISCAL IMPACT

The fully burdened annual cost for a Department Secretary is approximately \$93,000.

Attachment: None

City of Los Alamitos

BUDGET STANDING COMMITTEE AGENDA REPORT

MEETING DATE: October 9, 2023

ITEM NUMBER: 5C

To: Budget Standing Committee Members

Presented By: Craig Koehler, Director of Finance

Subject: Laserfiche for Police Department

SUMMARY

Consider the addition of Laserfiche for the Police Department.

RECOMMENDATION

It is recommended that the Budget Standing Committee approve the purchase of Laserfiche Cloud Professional for the Police Department.

BACKGROUND

There is a growing need to maintain electronic records that utilize cloud-based technology. As such, the Police Department is considering adding Laserfiche for the storage and retrieval of their vital records. These records would have stricter access rights, would be separate from the City, and the software would be specific only to the Police Department.

DISCUSSION

ECS Imaging Inc. was contacted to provide a quote for the software and support for Laserfiche Cloud Professional (attached). The initial cost includes 10 users, user support, and one-time configuration, consulting and project management training. The software is fully compatible with MS Office, SharePoint, Teams, MS Dynamics 365.

FISCAL IMPACT

The cost of the Cloud Professional software is \$17,050 for the first year and \$10,050 thereafter. If approved, costs would be charged to Technology Fund 53, account 53-512-5451 Software, and 53-512-5260 Contractual Services. The additional costs would be included in the mid-year budget discussions.

Attachment: 1. ECS Imaging Inc.

 ECS IMAGING, INC. WORLD-CLASS SOLUTION PROVIDER		877-790-1600 5905 Brockton Ave. Ste. C Riverside, CA 92506 www.ECSImaging.com	Quote Cloud Professional
Quotation For Name: Veronica Wilson Title: Secretary to Chief Michael Claborn Company: Los Alamitos PD Address: 3201 Katella Ave, Los Alamitos, CA 90720 Phone: 562-431-2255 E-mail: vwilson@cityoflosalamitos.org		Quote Info Date: 9/12/2023 Quote Number: LAPD4.23 Valid Through: 10/31/2023 Terms: net 20 Account Manager: Laura Favreau Phone: 714-984-4704 E-mail: lauraf@ecsimging.com	
Description of Product and Services Total Storage 1.00 TB			

Software-as-a-Service

Laserfiche Cloud Professional Document Management and 100 GB storage per user for 5-49 users.

Laserfiche Cloud Professional Tier includes: Direct Share, Data Encryption at Rest, Autoscaling, Automated & Encrypted Backups, Intrusion Detection, Automated Feature & Security Updates, Automated Text Extraction, Import Agent with Email Archive, Starter Audit Trail+, Workflow & Forms Process Automation, Connector, Surveys, 1 Workflow Bot, 10 Quick Fields Complete w/Agent. Integrations with MS Office, SharePoint, Teams, MS Dynamics 365 & Redtail. 50,000 RESTful web API calls/month.

SKU	Description	Unit Price	Quantity	Line Total
CLENF2	Laserfiche PF Cloud Professional Users (5-49)	\$ 830.00	10	\$ 8,300.00
ECSGOLD	ECS GOLD Priority Support	\$ 175.00	10	\$ 1,750.00
Cloud Professional Subtotal				\$ 10,050.00

Annual Maintenance

SKU	Description	Unit Price	Quantity	Line Total
Annual Subtotal				\$ -

Hardware

SKU	Description	Unit Price	Quantity	Line Total
Subtotal				\$ -

Professional Services (One-time)

SKU	Description	Unit Price	Quantity	Line Total
ECSTK	ECS Turnkey Configuration, Consulting, Project Management & Training	\$ 7,000.00	1.0	\$ 7,000.00
Subtotal				\$ 7,000.00

Special Terms

Professional Services include configuration of Cloud repository. Capture tools may be used to import Reports with simple template to pull metadata and auto-file in folder structure. Integration with ONESolution on Laserfiche side is included. Connector may be used to build 1 profile that searches Laserfiche from 3rd party software. Includes deploying the profile to LF Client workstations and standard testing/revisions. Additional integration aspects with CentralSquare will need more consulting and time involved. Gold Support Hours may be used toward any service that ECS Imaging provides.

Tax Rate	Software Only (Download Only)	0.00%	Tax	\$ -
Shipping				
(First Year) Total Upfront Cost				\$ 17,050.00
(Second Year Onwards) Total Cost Paid Annually				\$ 10,050.00

Billing Terms:

*Hardware, Software, Maintenance, Gold Hours & Projects billed 100% at project start. *Services billed 50% up front minimally w/ remaining Services as incurred."

*Standard Processing fee added to credit card payments."

Gold Annual Priority Remote or Onsite Support Contract Includes

- o ECS Discounted Gold Support is for on-going services after initial implementation
- o Live Hours of support are 7:30am - 5:00pm PST M-F
- o When 5 hrs minimum is purchased, 1 software version update is included per year up to 5 hrs.
- o On-site time is calculated to the nearest half hour; minimum onsite calculation depends on location and includes Travel time
- o Maximum 4 Hour Response Time - Upgraded from 24 hrs with traditional LSAP support
- o Unlimited Phone and Email Support
- o Free admissions to the ECS Annual Customer Conference, User Groups & Webinars
- o Monthly E-Newsletter
- o Customers without a Gold Support plan can purchase on-site/remote hours at \$250/hr with a 1 Hr minimum for remote support, and an 8 Hr Minimum for onsite, with travel expenses
- o ECS may allow planned after hours support in rare circumstances. In these cases Gold Priority Support will be billed at double the hourly rate

Hardware Return Policy:

Unopened boxed hardware may be exchanged for a full cash or credit refund within 7 days - a 15% restocking fee may apply. Defective hardware will be exchanged for a replacement per the terms and conditions specified on the product warranty card.

City of Los Alamitos

BUDGET STANDING COMMITTEE AGENDA REPORT

MEETING DATE: October 9, 2023

ITEM NUMBER: 5D

To: Budget Standing Committee Members

Presented By: Ron Noda, Development Services Director

Subject: Quimby In-Lieu Fees

SUMMARY

Discussion of a recommended update to the In-Lieu Fees Pursuant to the Quimby Act.

RECOMMENDATION

Discuss and provide Staff direction

BACKGROUND

In 1975, the State of California passed the Quimby Act, allowing cities and counties to adopt local ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. This is a vital process in order to ensure the availability of parkland within cities. In-Lieu fees are required for residential developments of 50 or fewer lots and/or parcels. Dedication of parkland is required for residential developments of 51 or more lots and/or parcels. The City may elect to condition Quimby In-Lieu fees for residential developments of 51 or more lots or parcels if the location is not conducive to development of parks and recreation facilities. Quimby In Lieu fees are not conditioned for non-residential land uses.

The City of Los Alamitos has historically collected only Quimby Land Dedication Requirement and In-Lieu Fees. The last time fees were updated was March 21, 2005, and have not increased since 2008. As a result, the City's current collection of appropriate Quimby Land Dedication and In-Lieu Fees have not kept pace with the market.

DISCUSSION

As established in the Quimby Act, the parkland standard of 2.5 acres per 1,000 residents was utilized for residential subdivisions in Los Alamitos. While some cities include apartments and other development types to be subject to Quimby Land Dedication, Los Alamitos' Quimby Land Dedication structure currently only extends to residential subdivisions on a subject property. As the collection of these funds is instrumental in the improvement of the City's parks, athletic fields, and open space, SCI Consulting Group was contracted to prepare a Quimby Land Dedication In-Lieu Fee Study to establish the legal and policy basis for the imposition of updated In-Lieu fees on new development within the City. As a result of the SCI Consulting Group's study, the table below shows the current fees and the proposed fees per unit.

Land Use	Current Fee (per unit)	Proposed Fee (per unit)
----------	------------------------	-------------------------

Single Family (attached)	\$18,076.00	\$19,605.00
Duplex Dwelling (detached)	\$15,161.00	\$22,553.00
Multiple Family	\$13,412.00	\$19,468.00
Mobile Home	\$9,913.00	\$10,899.00

If the Budget Standing Committee recommends the proposed fees update to Council, and in turn, Council agrees with the proposed fees, two actions are recommended to update the Quimby Land Dedication and In-Lieu Fee.

1. An Ordinance to approve changes identified in the study for Title 16 *Subdivisions* of the Municipal Code.
2. A Resolution establishing the amount of the in-lieu fees.

FISCAL IMPACT

The adoption of revised fees, associated to the Quimby In-Lieu fees to updated industry standards.

Attachment: 1. Los Alamitos Quimby Study July 2023



CITY OF LOS ALAMITOS

QUIMBY LAND DEDICATION AND IN-LIEU FEE STUDY

JULY 2023
FINAL REPORT

PREPARED FOR:

**CITY COUNCIL
CITY OF LOS ALAMITOS**

PREPARED BY:



SCI Consulting Group
4745 MANGLES BOULEVARD
FAIRFIELD, CALIFORNIA 94534
PHONE 707.430.4300
www.sci-cg.com

CITY OF LOS ALAMITOS

CITY COUNCIL

Tanya Doby, Mayor

Jordan Nefulda, Mayor Pro Tem

Shelley Hasselbrink, Council Member

Emily Hibard, Council Member

Trisha Murphy, Council Member

CITY MANAGER

Chet Simmons

DEVELOPMENT SERVICES DIRECTOR

Ron Noda

DEVELOPMENT SERVICES MANAGER

Irving Montenegro Jr.

ASSOCIATE PLANNER

Tom Oliver

QUIMBY CONSULTANT

Blair Aas, SCI Consulting Group

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	1
SUMMARY OF KEY FINDINGS.....	1
QUIMBY DEDICATION REQUIREMENT DETERMINATION.....	4
QUIMBY STANDARD	4
QUIMBY DWELLING UNIT OCCUPANCY FACTOR	4
QUIMBY DEDICATION REQUIREMENT	6
QUIMBY IN-LIEU FEE DETERMINATION	7
QUIMBY LAND VALUE	7
QUIMBY IN-LIEU FEE DETERMINATION	8
QUIMBY PROGRAM ADMINISTRATION REQUIREMENTS.....	9
ACCOUNTING REQUIREMENTS	9
ALLOWABLE QUIMBY IN-LIEU EXPENDITURES	9
TRANSPARENCY REQUIREMENTS	10
QUIMBY IN-LIEU FEE EXEMPTIONS.....	10
QUIMBY CREDITS	10
QUIMBY LAND VALUE ADJUSTMENT METHOD	10
APPENDIX A – CURRENT QUIMBY IN-LIEU FEE (2005).....	12
APPENDIX B – CITY PARK INVENTORY	13
APPENDIX C – ESTIMATE OF FAIR MARKET VALUE OF RESIDENTIAL LAND.....	14
APPENDIX D – CALIFORNIA GOVT. CODE § 66477 (“THE QUIMBY ACT”).....	16

LIST OF FIGURES

FIGURE 1 – QUIMBY LAND DEDICATION REQUIREMENT..... 2

FIGURE 2 – QUIMBY IN-LIEU FEE..... 3

FIGURE 3 – QUIMBY DWELLING UNIT OCCUPANCY FACTOR 5

FIGURE 4 – QUIMBY LAND DEDICATION REQUIREMENT..... 6

FIGURE 5 – QUIMBY IN-LIEU FEE..... 8

FIGURE 6 – CURRENT QUIMBY IN-LIEU FEE (2005)..... 12

FIGURE 7 – CITY PARK INVENTORY..... 13

FIGURE 8 – ESTIMATE OF FAIR MARKET VALUE OF RESIDENTIAL LAND 14

EXECUTIVE SUMMARY

INTRODUCTION

The California Government Code contains specific enabling legislation for the dedication of land or fees in lieu of land dedication for neighborhood and community parks by a city, county, or special City. This legislation, codified as Government Section 66477 and known commonly as the “Quimby Act,” also establishes the criteria for determining the land dedication requirement and in-lieu fee based on specific park standards.

City of Los Alamitos (“City”) Municipal Code Chapter 16.18 implements the provisions of Quimby Act, which authorizes the City to require the dedication of land for park facilities and/or payment of in-lieu fees incident to and as a condition of the approval of a tentative tract map or parcel map for certain subdivisions. The condition is consistent with the standards and policies for park facilities adopted in the City General Plan and bears a reasonable relationship to the need for park facilities by the inhabitants of the subdivision.

Two factors determine the amount of land that may be required to be dedicated for a new subdivision. These factors are multiplied by the number of respective dwelling units for the proposed subdivision to determine the acreage to be dedicated for neighborhood and community parks. In some instances, the payment of a fee in lieu of land may be considered. In this case, the Quimby dedication requirement is multiplied by the fair market value of the land, which would otherwise be required to be dedicated for parks to establish a fee in lieu of land dedication.

This Quimby Land Dedication Requirement and In-Lieu Fee Study (“Study”) presents a recalculation of the three factors that determine the City’s Quimby Dedication Requirement and In-Lieu Fee.

SUMMARY OF KEY FINDINGS

Based on a review of the Quimby Act, the 2020 U.S. Census, and the City’s Quimby Ordinance (City Municipal Code Chapter 16.18), the following key findings are presented:

1. The City’s Quimby Ordinance (City Municipal Code Chapter 16.8) has been in effect since the adoption of Ordinance 634 in 2000. The City’s current Quimby in-lieu fees became effective in March 2005, by Resolution No. 1990. At the time, the increase in the new Quimby in-lieu fee was phased over a four-year period. See Appendix A for more detail.

2. According to the 2020 U.S. Census, the average dwelling unit occupancy in the City is 3.02 for single-family detached housing, 2.63 for single-family attached housing, 2.61 for multi-family family housing, and 1.46 for mobile homes (“Quimby Dwelling Unit Occupancy Factor”).
3. Based on the City’s current park inventory and population, the City has 1.6 acres per 1,000 residents.¹ Therefore, the City’s maximum land dedication requirement and/or in lieu fee allowed under the Quimby Act is 3.0 acres of parkland for every 1,000 residents. However, the City’s proposed dedication requirement is 2.5 acres of land for every new 1,000 residents (“Quimby Standard”).
4. For subdivisions of 50 dwelling units or more, the City may require land for parks for the four residential land use categories in the amounts shown below (“Quimby Land Dedication Requirement”).

FIGURE 1 – QUIMBY LAND DEDICATION REQUIREMENT

Residential Land Use Category	Quimby Land Dedication Requirement
	<i>Land Sq. Ft. per Dwelling Unit</i>
Single-Family Detached Housing	329
Single-Family Attached Housing	286
Multi-Family Housing	284
Mobile Home Development	159

5. A survey of recent vacant residential land sales in the City and environs over the last couple of years shows the fair market value of land suitable for parks to be \$2,986,000 per acre (“Quimby Land Value”).

¹ Excludesd allowable fields are subject to long-term facilities/joint-use agreement between the City and the Los Alamitos Unified School District.

6. The City may require a fee in lieu of a land dedication for the following five residential land use categories show below (“Quimby In-Lieu Fee”).

FIGURE 2 – QUIMBY IN-LIEU FEE

Residential Land Use Category	Quimby In-Lieu Fee (Maximum)
	<i>Per Dwelling Unit</i>
Single-Family Detached Housing	\$22,553
Single-Family Attached Housing	\$19,605
Multi-Family Housing	\$19,468
Mobile Home Development	\$10,899

QUIMBY DEDICATION REQUIREMENT DETERMINATION

QUIMBY STANDARD

Under the Quimby Act, the dedication of land, or payment of fees, or both, cannot exceed the proportionate amount necessary to provide three (3) acres of park area per 1,000 persons residing within the subdivision unless the amount of existing neighborhood and community park area exceeds that limit, in which case the calculated amount may be adopted as a higher standard not to exceed five (5) acres per 1,000 persons residing within a subdivision.

Based on the City's current parkland inventory, the City has approximately 1.6 acres of park area for neighborhood and community parks. A summary of the City's inventory of parkland is provided in Appendix B. This does not include the City's designated open space areas and allowable fields and courts under a joint-use agreement between the City and the Los Alamitos Unified School District. With a current population of approximately 11,607 residents, this represents a ratio of 1.6 acres of neighborhood and community parkland for every 1,000 residents.

Since the City's existing park area is lower than the minimum 3 acres per 1,000 residents, the City's maximum land dedication requirement and/or in lieu fee allowed under the Quimby Act is 3.0 acres of parkland for every 1,000 residents. However, the City propose a lower Quimby standard of 2.5 acres per 1,000 residents.

QUIMBY DWELLING UNIT OCCUPANCY FACTOR

Pursuant to Govt. Code § 64477(a)(2), the amount of land dedicated, or fees paid shall be based upon residential population density, which shall be in part determined based on the average number of persons per household according to the most recent available federal census. Moreover, since different residential land uses have varying household sizes, it is reasonable that the land dedication requirement and associated in-lieu fee be expressed per dwelling unit based on their respective average household size. For this Quimby program, the following four residential land uses have been selected:

- "Single-Family Detached Housing" means free-standing one-family dwelling units.
- "Single-Family Attached Housing" means a one-family dwelling unit on a separate assessor's parcel that share a common wall, such as townhomes.

- “Multi-Family Residential Housing” means buildings or structures designed for two or more families for living or sleeping purposes and having kitchen and bath facilities for each family. This category also includes for-sale condominiums.
- “Mobile Home Development” means a development area for residential occupancy in vehicles that require a permit to be moved on a highway, other than a motor vehicle designed or used for human habitation and for being drawn by another vehicle.

A “dwelling unit” generally means one or more rooms in a building or structure, or a portion thereof designed exclusively for residential occupancy by one or more persons for living or sleeping purposes and having kitchen and bath facilities, including mobile homes.

Based on figures from the 2020 U.S. Census, Figure 3 below presents the determination of the Quimby dwelling unit occupancy factor for four residential land use categories.

FIGURE 3 – QUIMBY DWELLING UNIT OCCUPANCY FACTOR

Residential Land Use Categories	Occupied Dwelling Units	Total Number of Occupants	Dwelling Unit Occupancy Factor
Calc	a	b	c = b / a
Single-Family Detached Housing	2,020	6,100	3.02
Single-Family Attached Housing	396	1,087	2.63
Multi-Family Housing	1,626	4,241	2.61
Mobile Home Development	123	179	1.46
Average (2020 Census)	4,165	11,607	2.79

Source: 2020 U.S. Census for the City of Los Alamitos

QUIMBY DEDICATION REQUIREMENT

Based on the City's proposed Quimby standard of 2.5 acres per 1,000 residents, the formula for calculating the City's parkland dedication requirement is as follows:

$$\begin{array}{ccccc} \text{Quimby} & & \text{Quimby Dwelling} & & \text{Quimby} \\ \text{Standard} & \times & \text{Unit Occupancy} & = & \text{Land} \\ & & \text{Factor} & & \text{Dedication} \\ & & & & \text{Requirement} \end{array}$$

Figure 4 below presents the City's Quimby land dedication requirement is expressed on a land square footage basis for the four residential land use categories.

FIGURE 4 – QUIMBY LAND DEDICATION REQUIREMENT

Residential Land Use Category	Quimby Standard ²	Quimby Dwelling Unit Occupancy Factor ¹	Quimby Land Dedication Requirement ³
Calc	a	b	c = (a * b) / 1,000 * 43,560
	Acres per 1,000 Residents	Per Dwelling Unit	Land Sq. Ft. per Dwelling Unit
Single-Family Detached Housing	2.5	3.02	329
Single-Family Attached Housing	2.5	2.63	286
Multi-Family Housing	2.5	2.61	284
Mobile Home Development	2.5	1.46	159

Notes:

¹ The District's proposed land per 1,000 residents standard for neighborhood and community

² See Figure 3.

³ Quimby dedication requirement expressed in terms of park land square feet required per lot or per dwelling unit.

For example, the Quimby land dedication required for a 250-unit multifamily development project would require 1.30 acres of land for park and recreational facilities.

$$\begin{array}{ccccc} 250 & & 284 \text{ Land Sq. Ft.} & & 71,000 \text{ Sq. Ft or} \\ \text{Multi-Family} & \times & \text{per Multi-Family} & = & \text{approximately 1.63} \\ \text{Residential Units} & & \text{Residential Unit} & & \text{Acres of Land} \\ & & & & \text{Dedication for the} \\ & & & & \text{Project} \end{array}$$

QUIMBY IN-LIEU FEE DETERMINATION

For proposed subdivisions containing fewer than 50 parcels, the Quimby Act allows for the payment of a fee in lieu of land dedication (“Quimby in-lieu fee”).² The purpose of the Quimby in-lieu fee is to accumulate enough funding from several smaller subdivisions to acquire land for developing neighborhood and community parks within the City. Moreover, while land dedication may be required for larger subdivisions, the City may require in-lieu fees only, or a combination of land dedication and in-lieu fees, to meet the park and recreation goals and objectives of the City.

QUIMBY LAND VALUE

The Quimby Act has no specific requirements relating to the land valuation of dedicated parkland. However, the Act does require that the “amount and location of land to be dedicated or the fees to be paid shall bear a reasonable relationship to the use of the park and recreational facilities by the future inhabitants of the subdivision.”

In January 2023, SCI gathered recent vacant land sales in the City and environs over the last couple of years for the land type normally acquired for City parks. To establish a fair market value of land for parks for calculating the City’s Quimby in-lieu fee, only the residential land sales were considered. Two land sales were excluded as outliers that resulted in abnormally low and high sales prices. In order to adjust older land sales to reasonably approximate current land value, a commonly used approach was used which is to adjust the land sale by the percentage change in the median home sales price since the effective date of each land sale. For purposes of this Study, median home sales price within the City as reported by the Zillow Real Estate Network was used.

As shown in Appendix C, the baseline average sales price for thirteen residential land sales is \$2,762,000 per acre. After adjusting for inflation, the adjusted fair market value to January 2023 based on the thirteen residential land sales is \$2,986,000. Arguments for higher land values can be made; however, the presented land value per acre appears to be a fair and conservative value for this Study.

² However, when a multi-family development or stock cooperative exceeds 50 dwelling units, a dedication of land may be required, even though the number of parcels may be less than 50. Govt. Code § 66477(a)(7)

QUIMBY IN-LIEU FEE DETERMINATION

Figure 5 below presents the formula and the calculation of the Quimby in-lieu fee based on the City's Quimby land dedication requirement and the established fair market land value of residential land at \$2,986,000 per acre. The Quimby in lieu fee is expressed on a dwelling unit basis for four residential land use categories. Nonresidential subdivisions are not subject to the Quimby program.

$$\begin{array}{ccccc} \text{Quimby} & & & & \\ \text{Land} & & & & \\ \text{Dedication} & \times & \text{Quimby Land} & = & \text{Quimby In-} \\ \text{Requirement} & & \text{Value} & & \text{Lieu Fee} \end{array}$$

FIGURE 5 – QUIMBY IN-LIEU FEE

Residential Land Use Category	Quimby Land Dedication Requirement ¹	Quimby Land Value ²	Quimby In- Lieu Fee (Maximum)
Calc	a	b	c = a * b / 43,560
	<i>Land Sq. Ft. Per Dwelling Unit</i>	<i>Per Acre</i>	<i>Per Dwelling Unit</i>
Single-Family Detached Housing	329	\$2,986,000	\$22,553
Single-Family Attached Housing	286	\$2,986,000	\$19,605
Multi-Family Housing	284	\$2,986,000	\$19,468
Mobile Home Development	159	\$2,986,000	\$10,899

Notes:

¹ Determination of the Quimby Land Dedication Requirement is shown Figure 4.

² See Appendix B for more detail.

It is important to note that the City should periodically review the fair market value of land in the City. If land values change significantly in either direction, the Quimby in-lieu fee should be adjusted accordingly.

Moreover, if a subdivider disputes the land value used to determine the in-lieu fee, the City's Quimby ordinance should allow for value to be reevaluated by based upon a qualified real estate appraisal with all costs for such appraisal to be borne by the subdivider.

QUIMBY PROGRAM ADMINISTRATION REQUIREMENTS

This section summarizes the statutory requirements and provides some recommendations for the annual administration of the Quimby program. The specific statutory requirements for the administration of the Quimby program may be found in California Govt. Code § 66477 et seq.

ACCOUNTING REQUIREMENTS

Proceeds from the Quimby in-lieu fee should be deposited into a separate fund or account so that there will be no commingling with other revenue. Any interest earned by such account should be deposited in that account and expended solely for the purpose for which originally collected.

The City must develop a schedule specifying how, when, and where it will use the land or fees, or both, to develop park or recreational facilities to serve the residents of the subdivision.

Quimby in-lieu fees shall be committed within five years after the payment of the fees or the issuance of building permits on one-half of the lots created by the subdivision, whichever occurs later. If the Quimby in-lieu fees are not committed, they, without any deductions, shall be distributed and paid to the then record owners of the subdivision in the same proportion that the size of their lot bears to the total area of all lots within the subdivision.

ALLOWABLE QUIMBY IN-LIEU EXPENDITURES

Quimby in-lieu fees should be expended solely for the purpose of park land acquisition and developing new or rehabilitating existing neighborhood or community park or recreational facilities to serve the subdivision, except as provided Government Code § 66477(3)(b). It is important to note that the Quimby Act does not define the term “park or recreational purposes.” However, in 1998, the Attorney General opined that the term “recreational purposes” should be broadly construed to include cultural activities, relying on part on the following definition of “recreation” found in Education Code, § 10901(c):

“Recreation means any activity, voluntarily engaged in, which contributes to the physical, mental, or moral development of the individual or group participating therein, and includes any activity in the fields of music, drama, art, handicraft, science, literature, nature study, nature contacting, aquatic sports, and athletics, or any of them, and any informal play incorporating any such activity.”

TRANSPARENCY REQUIREMENTS

The City must post current Quimby Land Dedication Requirements and the Quimby In-Lieu Fees the City's website and update within 30 days of any change.

QUIMBY IN-LIEU FEE EXEMPTIONS

The following construction projects are exempt from the Quimby in-lieu fee.

- A structure owned by a governmental agency.
- Commercial or industrial subdivisions.
- Condominium projects or stock cooperatives that consist of the subdivision of airspace in an existing apartment building that is more than five years old when no new dwelling units are added.

QUIMBY CREDITS

The following circumstances must receive a fee credit.

- If a developer dedicates land or builds specific park facilities under a turn-key agreement, the Quimby in-lieu fee imposed on that development project may be adjusted to reflect a credit for the parks and recreational facilities constructed.
- Common interest developments, as defined in Civil Code § 1351, shall be eligible to receive a credit, as determined by the City Council, against the amount of land required to be dedicated or the amount of the fee imposed, for the value of private open space within the development which is usable for active recreational uses.

QUIMBY LAND VALUE ADJUSTMENT METHOD

The fair market value of land and resulting Quimby in lieu fee established by this Quimby Study are as of January 2023. To keep pace with land inflation, the City should consider annually adjusted the Quimby in lieu fee by percentage change in the median sales price for all homes in the City.

APPENDICES

Appendix A – Current Quimby In-Lieu Fee (2005)

Appendix B – City Park Inventory

Appendix C – Estimate of Fair Market Value of Residential Land

Appendix D – California Govt. Code § 66477 (“The Quimby Act”)

APPENDIX A – CURRENT QUIMBY IN-LIEU FEE (2005)

FIGURE 6 – CURRENT QUIMBY IN-LIEU FEE (2005)

Land Use Category	Unit ¹	Effective March 21, 2005	Effective January 1, 2006	Effective January 1, 2007	Effective January 1, 2008
Single-Family Attached Housing	DU	\$4,500	\$9,038	\$13,538	\$18,076
Duplex Dwelling	DU	\$3,790	\$7,580	\$11,370	\$15,161
Multi-Family	DU	\$3,353	\$6,706	\$10,059	\$13,142
Mobile Home	DU	\$2,478	\$4,956	\$7,434	\$9,913

Notes:

¹ DU means dwelling unit.

APPENDIX B – CITY PARK INVENTORY

FIGURE 7 – CITY PARK INVENTORY

Parks ¹	Total Acres
Coyote Creek Park	3.7
Labourdette Park	0.4
Laurel Park	4.3
Little Cottonwood Park	6.8
Orville Lewis Jr. Park	1.7
Roberts Park	0.1
Soroptimist Park	0.2
Stansbury Park	0.6
Sterns Park	0.6
Total Park Acres	18.4

Source: Los Alamitos General Plan

Notes:

Excluded areas subject to long-term facilities/joint-use agreement between the City and the Los Alamitos Unified School District.

APPENDIX C – ESTIMATE OF FAIR MARKET VALUE OF RESIDENTIAL LAND

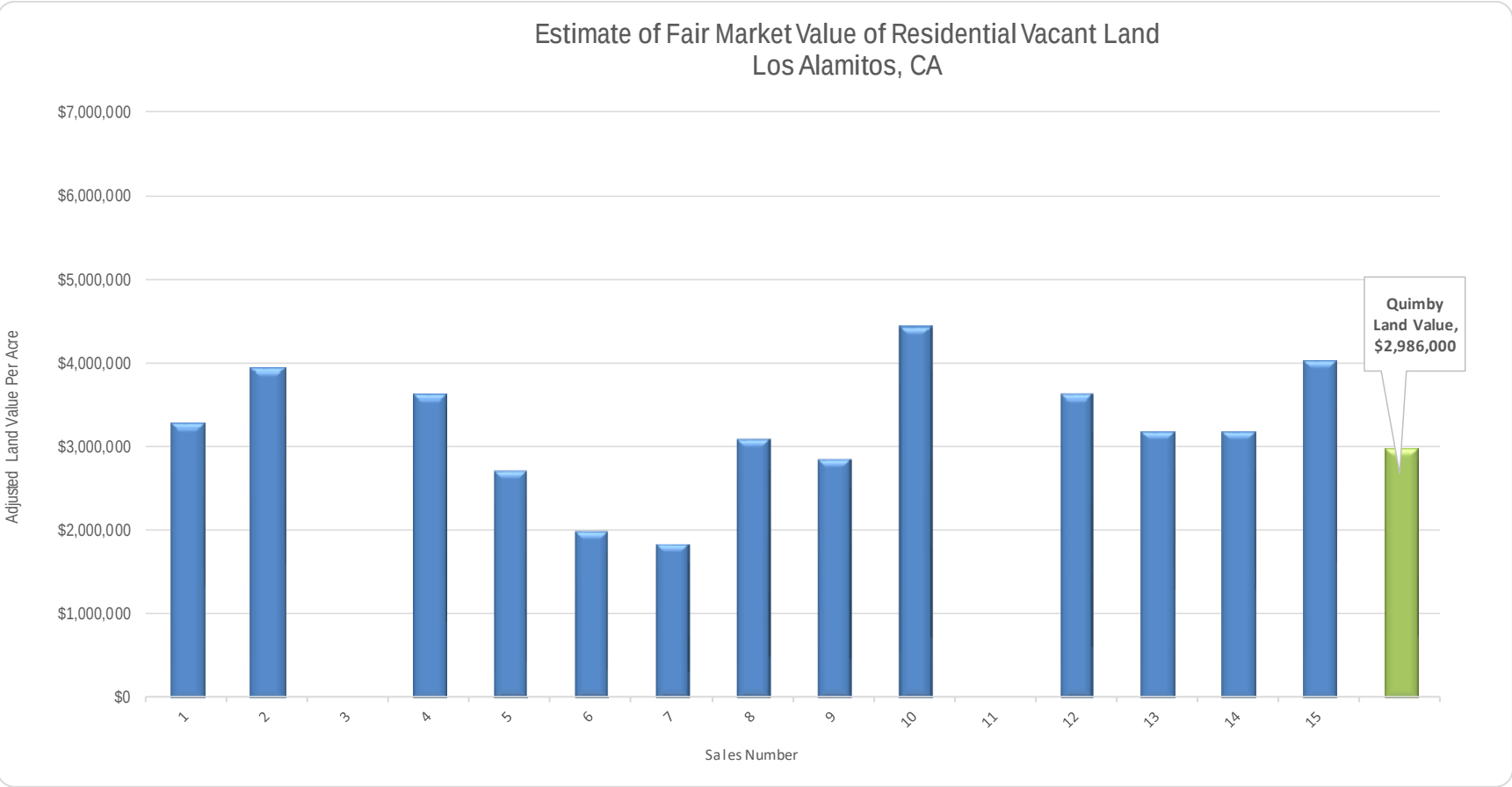
FIGURE 8 – ESTIMATE OF FAIR MARKET VALUE OF RESIDENTIAL LAND

Sale #	APN	Situs Address	Sales Month	Last Price Sold	Land Acres	Average Sales Price Per Acre	Adjust Factor ¹	Current Land Value per Acre	Current Land Value per Sq. Ft.	% Rank	Zoning	Outlier (Excl.)
			<i>Calc</i>	<i>a</i>	<i>b</i>	<i>c = a / b</i>	<i>d</i>	<i>e = c * d</i>	<i>f = e / 43,560</i>	<i>g</i>		
1	096-102-03	7072 Spruce St, Westminster	May-20	\$1,205,000	0.50	\$2,410,000	1.36	\$3,277,600	\$75.24	56%	R2	
2	7039-007-059	0 Roseton Ave, Artesia	Jul-20	\$810,000	0.28	\$2,882,562	1.37	\$3,949,110	\$90.66	75%	R2	
3	090-483-05	1620 W Orangewood Ave, Anaheim	Sep-20	\$960,000	0.71	\$1,348,315	1.33	\$1,793,258	\$41.17	6%	R1	Yes
4	066-184-27	5891 Stanton Ave, Buena Park	Sep-21	\$470,000	0.14	\$3,277,285	1.11	\$3,637,786	\$83.51	68%	R1	
5	066-112-01	5741 Burnham Ave, Buena Park	Sep-21	\$775,000	0.32	\$2,437,107	1.11	\$2,705,189	\$62.10	25%	R1	
6	127-092-01	9862 Ramm Dr, Anaheim	Oct-21	\$430,000	0.24	\$1,791,735	1.10	\$1,970,909	\$45.25	18%	R1	
7	079-751-08	7181 Kermore Ln, Stanton	Nov-21	\$800,000	0.47	\$1,702,128	1.08	\$1,838,298	\$42.20	12%	R1	
8	079-371-26	7401 Katella Ave, Stanton	Nov-21	\$3,250,000	1.14	\$2,853,380	1.08	\$3,081,651	\$70.74	37%	R1	
9	244-152-56	5619 Ball Rd, Cypress	Dec-21	\$1,000,000	0.37	\$2,688,172	1.06	\$2,849,462	\$65.41	31%	R1	
10	215-091-19	8581 Stanford Ave, Garden Grove	Dec-21	\$825,000	0.20	\$4,203,158	1.06	\$4,455,347	\$102.28	87%	R3	
11	242-182-19	10852 Pine St, Los Alamitos	Apr-22	\$975,000	0.15	\$6,500,000	0.97	\$6,305,000	\$144.74	93%	R1	Yes
12	097-072-11	8031 15th St, Westminster	Jun-22	\$600,000	0.16	\$3,815,474	0.95	\$3,624,701	\$83.21	62%	R1	
13	276-362-17	7911 Orangethorpe Ave, Buena Park	Jul-22	\$739,500	0.22	\$3,328,094	0.96	\$3,194,970	\$73.35	50%	R1	
14	7150-030-001	4415 Parkview Dr, Lakewood	Sep-22	\$1,150,000	0.35	\$3,248,588	0.98	\$3,183,616	\$73.09	43%	R1	
15	262-314-01	8542 La Salle St, Cypress	Dec-22	\$2,500,000	0.62	\$4,032,258	1.00	\$4,032,258	\$92.57	81%	RM-20	
Quimby Land Value (Los Alamitos)						\$2,762,000	1.08	\$2,986,000	\$68.55			

Source: County of Orange Assessor's Office, County of Los Angeles Assessor's Office, Zillow Real Estate Network, and SCI Consulting Group

Notes:

¹ Based on the change in median sales price for all homes in Orange County, California from sales month to December 2022 as report by Zillow Real Estate Network.



APPENDIX D – CALIFORNIA GOVT. CODE § 66477 (“THE QUIMBY ACT”)

(a) The legislative body of a City or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative map or parcel map, if all of the following requirements are met:

(1) The ordinance has been in effect for a period of 30 days prior to the filing of the tentative map of the subdivision or parcel map.

(2) The ordinance includes definite standards for determining the proportion of a subdivision to be dedicated and the amount of any fee to be paid in lieu thereof. The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4. However, the dedication of land, or the payment of fees, or both, shall not exceed the proportionate amount necessary to provide three acres of park area per 1,000 persons residing within a subdivision subject to this section, unless the amount of existing neighborhood and community park area, as calculated pursuant to this subdivision, exceeds that limit, in which case the legislative body may adopt the calculated amount as a higher standard not to exceed five acres per 1,000 persons residing within a subdivision subject to this section.

(A) The park area per 1,000 members of the population of the City, county, or local public agency shall be derived from the ratio that the amount of neighborhood and community park acreage bears to the total population of the City, county, or local public agency as shown in the most recent available federal census. The amount of neighborhood and community park acreage shall be the actual acreage of existing neighborhood and community parks of the City, county, or local public agency as shown on its records, plans, recreational element, maps, or reports as of the date of the most recent available federal census.

(B) For cities incorporated after the date of the most recent available federal census, the park area per 1,000 members of the population of the City shall be derived from the ratio that the amount of neighborhood and community park acreage shown on the maps, records, or reports of the county in which the newly incorporated City is located bears to the total population of the new City as determined pursuant to Section 11005 of the Revenue and Taxation Code. In making any subsequent calculations pursuant to this section, the county in which the newly incorporated City is located shall not include the figures pertaining to the new City which were calculated pursuant to this paragraph. Fees shall be payable at the time of the recording of the final map or parcel map, or at a later time as may be prescribed by local ordinance.

(3) (A) The land, fees, or combination thereof are to be used only for the purpose of developing new or rehabilitating existing neighborhood or community park or recreational facilities to serve the subdivision, except as provided in subparagraph (B).

(B) Notwithstanding subparagraph (A), fees may be used for the purpose of developing new or rehabilitating existing park or recreational facilities in a neighborhood other than the neighborhood in which the subdivision for which fees were paid as a condition to the approval of a tentative map or parcel map is located, if all of the following requirements are met:

- (i) The neighborhood in which the fees are to be expended has fewer than three acres of park area per 1,000 members of the neighborhood population.
 - (ii) The neighborhood in which the subdivision for which the fees were paid has a park area per 1,000 members of the neighborhood population ratio that meets or exceeds the ratio calculated pursuant to subparagraph (A) of paragraph (2), but in no event is less than three acres per 1,000 persons.
 - (iii) The legislative body holds a public hearing before using the fees pursuant to this subparagraph.
 - (iv) The legislative body makes a finding supported by substantial evidence that it is reasonably foreseeable that future inhabitants of the subdivision for which the fee is imposed will use the proposed park and recreational facilities in the neighborhood where the fees are used.
 - (v) The fees are used within a specified radius that complies with the City's or county's ordinance adopted pursuant to subdivision (a), and are consistent with the adopted general plan or specific plan of the City or county. For purposes of this clause, "specified radius" includes a planning area, zone of influence, or other geographic region designated by the City or county, that otherwise meets the requirements of this section.
- (4) The legislative body has adopted a general plan or specific plan containing policies and standards for parks and recreational facilities, and the park and recreational facilities are in accordance with definite principles and standards.
- (5) The amount and location of land to be dedicated or the fees to be paid shall bear a reasonable relationship to the use of the park and recreational facilities by the future inhabitants of the subdivision.
- (6) (A) The City, county, or other local public agency to which the land or fees are conveyed or paid shall develop a schedule specifying how, when, and where it will use the land or fees, or both, to develop park or recreational facilities to serve the residents of the subdivision. Any fees collected under the ordinance shall be committed within five years after the payment of the fees or the issuance of building permits on one-half of the lots created by the subdivision, whichever occurs later. If the fees are not committed, they, without any deductions, shall be distributed and paid to the then record owners of the subdivision in the same proportion that the size of their lot bears to the total area of all lots within the subdivision.
- (B) The City, county, or other local agency to which the land or fees are conveyed or paid may enter into a joint or shared use agreement with one or more other public districts in the jurisdiction, including, but not limited to, a school district or community college district, in order to provide access to park or recreational facilities to residents of subdivisions with fewer than three acres of park area per 1,000 members of the population.
- (7) Only the payment of fees may be required in subdivisions containing 50 parcels or less, except that when a condominium project, stock cooperative, or community apartment project, as those terms are defined in Sections 4105, 4125, and 4190 of the Civil Code, exceeds 50 dwelling units, dedication of land may be required notwithstanding that the number of parcels may be less than 50.

(8) Subdivisions containing less than five parcels and not used for residential purposes shall be exempted from the requirements of this section. However, in that event, a condition may be placed on the approval of a parcel map that if a building permit is requested for construction of a residential structure or structures on one or more of the parcels within four years, the fee may be required to be paid by the owner of each parcel as a condition of the issuance of the permit.

(9) If the subdivider provides park and recreational improvements to the dedicated land, the value of the improvements together with any equipment located thereon shall be a credit against the payment of fees or dedication of land required by the ordinance.

(b) Land or fees required under this section shall be conveyed or paid directly to the local public agency which provides park and recreational services on a communitywide level and to the area within which the proposed development will be located, if that agency elects to accept the land or fee. The local agency accepting the land or funds shall develop the land or use the funds in the manner provided in this section.

(c) If park and recreational services and facilities are provided by a public agency other than a City or county, the amount and location of land to be dedicated or fees to be paid shall, subject to paragraph (2) of subdivision (a), be jointly determined by the City or county having jurisdiction and that other public agency.

(d) This section does not apply to commercial or industrial subdivisions or to condominium projects or stock cooperatives that consist of the subdivision of airspace in an existing apartment building that is more than five years old when no new dwelling units are added.

(e) Common interest developments, as defined in Section 1351 of the Civil Code, shall be eligible to receive a credit, as determined by the legislative body, against the amount of land required to be dedicated, or the amount of the fee imposed, pursuant to this section, for the value of private open space within the development which is usable for active recreational uses.

(f) Park and recreation purposes shall include land and facilities for the activity of "recreational community gardening," which activity consists of the cultivation by persons other than, or in addition to, the owner of the land, of plant material not for sale.

(g) This section shall be known, and may be cited, as the Quimby Act.

(THIS PAGE INTENTIONALLY LEFT BLANK)

City of Los Alamitos

BUDGET STANDING COMMITTEE AGENDA REPORT

MEETING DATE: October 9, 2023

ITEM NUMBER: 5E

To: Budget Standing Committee Members

Presented By: Ron Noda, Development Services Director

Subject: Community Center Roof Project

SUMMARY

The roof of the Community Center building has incurred significant damage from storms in the beginning of 2023. This item recommends actions to begin facilitating the repairs of the roof and damaged infrastructure.

RECOMMENDATION

1. Carry over \$500,000 that Council approved at the March 20, 2023 Council Meeting; and,
2. Authorize the City Manager to execute the contract for the project in a form to be approved by the City Attorney for an additional amount of \$1,290,952 for a total amount not to exceed \$1,790,952.

BACKGROUND

During the winter storms that occurred at the beginning of the year, the Community Center roof experienced a significant amount of damage as a result of leakage throughout the building. The areas affected by the leaks consist of: the flat roof section located in the northwest portion of the building which includes the kitchen, the craft room, activity rooms 2 and 3, several storage closets, and the flat roof section located in the south portion of the building which includes staff office space and the front lobby. This project will also include the repair of the water-damaged infrastructure located throughout the Community Center, which includes but not limited to drywall damage, electrical damage, and damage to the interior paint.

DISCUSSION

Earlier this year, the City Council adopted a resolution allowing for the City to suspend its normal procurement rules in order to facilitate the repair and reconstruction of the Community Center Roof that was damaged during the recent storms. This action allowed staff to deviate from the standard process for awarding contracts for the improvement of public buildings that can take up to 8 months to complete, as it includes the development of a project scope and detailed plans, the Council's approval of plans for the project, advertizing of the project and solicitation for bids, review of those bids, and the Council's award of the contract.

Since the Council took this action, staff has been hard at work not only developing the specification for the project, but also soliciting bids from various contractors. This included over 10 site walks with various contractors to understand the scope of the projects and the

difficulties involved with the repairs given the age and style of construction that is currently in place. During these inspections, it became clear that the damage would not be remedied with a simple patching job and would require the reconstruction of the whole roof and some of the other facility supporting systems.

As stated from the beginning of the project, it has always been the City's intention to complete this project in such a manner that it would not disrupt the operations within the Community Center or displace any of the many user groups, such as the Senior Club. Fortunately, the damage was contained to certain areas, which allowed staff and the engineering team to continue their work of developing a plan for the entire repair, while not disturbing any of these groups.

As previously reported, the complexity of the project and the need to provide warranties for the completed work complicated the solicitation of bids. Ultimately, out of the several contractors that were contacted, three submitted quotes. These are outlined below:

Company	Quote	Contingency (20%)	Engineering Costs	Total
KYA Group	\$1,367,460	\$273,492	\$150,000	\$1,790,952
ADCO	\$1,434,000	\$286,800	\$150,000	\$1,870,800
Best Contracting Services	\$1,973,461	\$394,693	\$150,000	\$2,517,461

It is recommended by Staff that the City Manager enters into a Professional Services Agreement (PSA) with the KYA Group for the Community Center Roofing Project due to it being the lowest, most responsible quote received.

The tentative work schedule is below:

Date	Tasks
November 6, 2023 to December 1, 2023	Mobilization & Procurement
December 4, 2023 to January 19, 2024	Exterior Construction
January 22, 2024 to March 1, 2024	Interior Construction
March 4, 2024 to March 15, 2024	Punchlist Items
March 18, 2024 to March 29, 2024	De-mobilization
March 29, 2024	End of Construction

FISCAL IMPACT

Council appropriated \$500,000 at the March, 2023 meeting. An additional \$1,290,952 is requested for a total amount of \$1,790,952. The City's General Fund will fund this project with the anticipation of receiving a State Disaster Relief Grant that has been submitted in line with the Governor's State of Emergency Declaration due to severe winter storms.

Attachment: 1. Los AI - Emergency Roof Repair Specs Signed 4_20_2023

CITY OF LOS ALAMITOS



CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

**COMMUNITY CENTER ROOF REPAIR
LOCATED AT
10911 OAK STREET
IN THE CITY OF LOS ALAMITOS, CALIFORNIA
CIP 22/23**

APRIL 2023

NOTICE TO THE BIDDERS:

- 1. Contract bid documents: \$15 at counter or \$25 if purchased by mail (Prepaid amount/non-refundable).**
- 2. Bid bond required – 10% of bid amount to be submitted with bid.**
- 3. Bids must be received by 11:00 a.m. on the _____**

This page is intentionally left blank.

CITY OF LOS ALAMITOS
SPECIFICATIONS FOR
COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA

GENERAL REQUIREMENTS AND TECHNICAL PROVISIONS
PREPARED BY:

Willdan Engineering
2401 East Katella Avenue, Suite 300
Anaheim, Ca 92806
(714) 978-8200



George B. Saba, P. E.
RCE - 54563

FOR THE CITY OF LOS ALAMITOS
PUBLIC WORKS DIVISION
DEVELOPMENT SERVICES DEPARTMENT

This page is intentionally left blank.

TABLE OF CONTENTS
COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA

SECTION

NOTICE INVITING SEALED BIDS..... A

INSTRUCTIONS TO BIDDERSB

PROPOSAL INFORMATION AND DOCUMENTSC

CONTRACT INFORMATION AND DOCUMENTS..... D

STANDARD SPECIFICATIONSE

SPECIAL PROVISIONS F

SPECIAL PROVISIONS - ATTACHMENTS..... G

This page is intentionally left blank.

SECTION A

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

NOTICE INVITING SEALED BIDS

This page is intentionally left blank.

NOTICE INVITING SEALED BIDS

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

PUBLIC NOTICE IS HEREBY GIVEN that the City of Los Alamitos as AGENCY, invites sealed bids for the above stated project and will receive such bids in the office of the City Clerk, **3191 Katella Avenue, Los Alamitos, CA 90720** up to the hour of 11:00 a.m., on the _____. The bids will be publicly opened and read at 11:00 a.m. on the _____, in the Los Alamitos City Hall Council Chambers.

The City of Los Alamitos proposes to replace portions of the roof of the Los Alamitos Community Center, including but not limited to rough carpentry, concrete roof tiles, modified bituminous membrane roofing, and sheet metal flashing and trim. In addition, City proposes to paint the interior walls and ceilings and replace existing lighting fixtures with LED fixtures.

Copies of the plans, specifications, and contract documents are available from the City of Los Alamitos, **3191 Katella Avenue, Los Alamitos, CA 90720** upon payment of a **\$15.00 non-refundable fee if picked up, or payment of a \$25.00 non-refundable fee if mailed**. In accordance with the provisions of California Public Contract Code § 3300, and Business and Professions Code § 7028.15(e), the Agency has determined that the contractor shall possess a valid Class A, B, or C-39 contractor's license at the time that the contract is awarded. Failure to possess the specified license shall render a bidder's bid as non-responsive and shall bar award of the contract to any bidder not possessing the specified license at the time of the award.

CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE BOARD. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 2600, SACRAMENTO, CA 95826. At the time the contract is awarded, the contractor shall be properly licensed in accordance with the laws of this state. The first payment for work or material shall not be made unless and until the Registrar of Contractors verifies to the Agency that the records of the Contractors' State License Board indicate that the contractor was properly licensed at the time the contract was awarded. Any bidder or contractor not so licensed shall be subject to all legal penalties imposed by law including, but not limited to, any appropriate disciplinary action by the Contractors' State Board. Failure of the bidder to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the contract and shall result in the forfeiture of the security of the bidder. (Public Contract Code § 20103.5)

Bids must be prepared on the approved bid forms in conformance with INSTRUCTIONS TO BIDDERS and submitted in the envelopes provided, sealed, and plainly marked on the outside:

“SEALED BID FOR COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23

DO NOT OPEN WITH REGULAR MAIL”

The bid must be accompanied by a bid guarantee in the amount of 10% of the total bid by 11:00 a.m. ON THE DATE ADVERTISED FOR THE OPENING OF BIDS. More specifically, pursuant to Public Contract Code §§ 20170 and 20171, all bids for the project shall be presented, under sealed cover and shall be accompanied by one of the following forms of bidder's security in the amount of ten percent (10%) of

the bid: (a) cash; (b) a cashier's check made payable to the City of Los Alamitos; (c) a certified check made payable to the City of Los Alamitos; or (d) a bidder's bond executed by an admitted surety insurer made payable to the City of Los Alamitos. Such security shall be forfeited should the successful bidder to whom the contract is awarded fails to timely execute the contract and to deliver the necessary bonds and insurance certificates as specified in the contract documents.

To the extent applicable, at any time during the term of the Agreement for the proposed project, the successful bidder may, at its own expense, substitute securities equivalent to the amount withheld as retention (or the retained percentage) in accordance with Public Contract Code § 22300.

Pursuant to California Civil Code § 3247, a payment bond is required to be submitted for all projects estimated in excess of \$25,000.00.

The Agency has determined that the proposed project is a public works subject to the provisions of Labor Code § 1720 thereby requiring the Contractor to pay the prevailing wage rates for all work performed under the Contract.

The Agency reserves the right to reject any and all bids.

If you have any questions, please contact Chris Kelley, PE at (562) 321-1204.

BY ORDER OF the City Council of the City of Los Alamitos, California.

SECTION B

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

INSTRUCTIONS TO BIDDERS

B1.01 INSPECTION OF SITE OF WORK

Bidders are required to inspect the site of the work in order to satisfy themselves, by personal examination or by such other means as they may prefer, of the location of the proposed work and as to the actual conditions of and at the site of work. If, during the course of his/her examination, a bidder finds facts or conditions which appear to him/her to conflict with the letter or spirit of the contract documents, or with any other data furnished him/her, he/she may apply to the Agency in writing in accordance with **B1.04 INTERPRETATION OF CONTRACT DOCUMENTS** for additional information and explanation before submitting his/her bid.

The submission of a proposal by the bidder shall constitute the acknowledgment that, if awarded the contract, he/she has relied and is relying on his/her own examination of (a) the site of the work, (b) the access to the site, and (c) all other data, matters, and things requisite to the fulfillment of the work and on his/her own knowledge of existing services and utilities on and in the vicinity of the site of the work to be constructed under the contract, and not on any representation or warranty of the Agency. No claim for additional compensation will be allowed which is based upon a lack of knowledge of these items.

B1.02 EXAMINATION OF CONTRACT DOCUMENTS

Each bidder shall thoroughly examine and be familiar with legal and procedural documents, general conditions, specifications, drawings, and addenda (if any). The submission of a proposal shall constitute an acknowledgment upon which the Agency may rely that the bidder has thoroughly examined and is familiar with the contract documents. The bidders' attention is directed to the need, if any, for special invoicing for this project. The failure or neglect of a bidder to receive or examine any of the contract documents shall in no way relieve him/her from any obligations with respect to his/her proposal or to the contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any contract document.

B1.03 CONTRACT PERIOD/CONSTRUCTION COMPLETION DATE

Bidder's attention is called to the provisions set forth in **SECTION E, STANDARD SPECIFICATIONS**, particularly those pertaining to the contract period and liquidated damages for avoidable delays.

The Contractor shall begin work within fifteen (15) calendar days after the date of the Notice to Proceed and shall diligently prosecute said work to completion before the expiration **40 CALENDAR DAYS**. The Contractor shall pay to the Agency the sum of **\$500.00** per day, for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed above.

B1.04 INTERPRETATION OF CONTRACT DOCUMENTS

No oral interpretations will be made to any bidder as to the meaning of the contract documents. Requests for an interpretation shall be made in writing and delivered to the Agency at least ten (10) days before the time announced for opening the proposals. Interpretations by the Agency will be in the form of addenda to

the contract documents and, when issued, will be sent as promptly as is practical to all parties to whom the contract documents have been issued. Agency makes no guarantee that all bidders will receive all addenda. Copies of addenda will be made available for inspection at the office where contract documents are on file for inspection as indicated on the Invitation for Bids. All such addenda shall become part of the contract. All questions shall be addressed to Chris Kelley, PE , City of Los Alamitos, at (562)-321-1204

B1.05 SOIL INFORMATION

Soil reports have not been prepared for this project.

B1.06 PROPOSAL

Proposals shall be made on the forms enclosed in **SECTION C** of these specifications with or without removal from the bound contract documents. All proposals shall give the prices proposed, both in words and in numbers, shall give all other information requested herein, and shall be signed by the bidder or his/her authorized representative, with his/her address. If the proposal is made by an individual, his/her name, signature and mailing address must be shown; if made by firm or partnership, the name and mailing address of the firm or partnership and the signature of at least one of the general partners must be shown; if made by a corporation, the proposal shall show the name of the state under the laws of which the corporation is chartered, the name and mailing address of the corporation, and the name and title of the person who signs on behalf of the corporation. If the proposal is made by a corporation, a certified copy of the bylaws or resolution of the board of directors of the corporation shall be furnished demonstrating the authority of the officer signing the proposal to execute contracts on behalf of the corporation.

Each proposal shall be enclosed in a sealed envelope, labeled as specified in **SECTION A - NOTICE INVITING SEALED BIDS**. Bidders are warned against making erasures or alterations of any kind, and proposals which contain omissions, erasures or irregularities of any kind may be rejected. No oral, telegraphic, or telephonic proposals or modifications will be considered.

In conformance with the Business and Profession Code, § 7028.15, the Contractor must state clearly his/her license number and expiration date. In addition, he/she shall sign a statement that these representations were made under the penalty of perjury. This statement shall be made on the **EXPERIENCE STATEMENT** in **SECTION C**.

The contractor will be required to pay prevailing wage pursuant to California Law, including California Labor Code §§ 1770 et seq. Copies of the prevailing rate of per diem wages are on file at the offices of the Agency.

B1.07 ADDENDA

Each proposal shall include specific acknowledgment in the space provided on **SECTION C - BID PROPOSAL** of receipt of all addenda issued during the bidding period. Failure to so acknowledge may result in the proposal being rejected as not responsive.

B1.08 BID PRICES

Bid prices shall include everything necessary for the completion of construction and fulfillment of the contract including, but not limited to, furnishing all materials, equipment, tools, plant and other facilities and all management, superintendence, labor, and services, except as may be provided otherwise in the contract documents. In the event of a difference between a price quoted in words and a price quoted in numbers for the same quotation, the words shall be the amount bid.

In preparing bid prices, bidder represents that he/she has carefully examined the Contract Documents and the site where the work is to be performed and that he/she has familiarized himself with all local conditions and federal, state, and local laws, ordinances, rules, and regulations that may affect the performance of the work in any manner. The bidder further represents that he/she has studied all surveys and investigation reports about subsurface and physical conditions pertaining to the job site, that he/she has performed such additional surveys and investigations as he/she deems necessary to complete the work at his/her bid price, and that he/she has correlated the results of all such data with the requirements of the Contract Documents. The submittal of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, including locality, uncertainty of weather and all other contingencies, and as to the character, quality, quantities, and scope of the work.

The plans and specifications for the work show subsurface conditions or otherwise hidden conditions as the Design Engineer supposes or believes them to exist but is not intended or to be inferred that the conditions as shown thereon constitute a representation that such conditions are actually existent. Except as otherwise specifically provided in the Contract Documents, the Agency, the Design Engineer and their consultants or agents shall not be liable for any loss sustained by the Contractor as a result of any variance of such conditions as shown on the plans and the actual conditions revealed during the progress of the work or otherwise.

The Contractor shall perform an independent take-off of the plans and bid accordingly. Quantities listed in the **BID SCHEDULE** in **SECTION C** are intended only as a guide for the Contractor as to the anticipated order of magnitude of work. Contractor shall be responsible for verifying all estimated quantities. Contractor will be reimbursed for the quantity of items actually installed as required by the Contract Documents and shown on the plans to neat line and grade.

The Contractor will not be reimbursed for unauthorized work performed outside of that required by the Contract Documents.

B1.09 TAXES

No mention shall be made in the proposal of sales tax, use tax, or any other tax, as all amounts bid will be deemed and held to include any such taxes which may be applicable.

B1.10 RECOGNITION OF BONDING COMPANIES

All bonding companies used by the Contractor in this contract must be recognized by the Federal Government within Circular 570. All proposals or contracts received that include bonds posted by bonding companies not recognized in Circular 570 will result in the disqualification of the bid proposal and forfeiture of the bid bond.

B1.11 QUALIFICATION OF BIDDERS

Each bidder shall be skilled and regularly engaged in the general class or type of work called for under the contract. A statement setting forth his/her experience shall be submitted by each bidder on the **EXPERIENCE STATEMENT** form provided in **SECTION C**.

Each bidder shall possess a valid Contractor's License issued by the Contractor's State License Board at the time his/her bid is submitted. The class of license shall be applicable to the work specified in the contract. Each bidder shall also have no less than five (5) years' experience in the magnitude and character of the work bid.

It is the intention of the Agency to award a contract to a bidder who furnished satisfactory evidence that he/she has the requisite experience and ability, and that he/she has sufficient capital, facilities, and plant to

enable him/her to prosecute the work successfully and properly, and to complete it within the time stated in the contract.

To determine the degree of responsibility to be credited to the bidder, the Agency will weigh any evidence that the bidder has performed satisfactorily other contracts of like nature, magnitude and comparable difficulty and comparable rates of progress. If in the opinion of the Agency, a bidder is determined to be insufficiently qualified, then that bidder will not be considered for award of the contract.

B1.12 DESIGNATION OF SUPPLIERS AND SUBCONTRACTORS

Each proposal shall have listed on the **DESIGNATION OF SUPPLIERS AND SUBCONTRACTORS** form provided in **SECTION C** the name and address of each subcontractor to whom the bidder proposes to sublet portions of the work in excess of one-half percent of the total amount of his/her bid. For the purpose of this paragraph, a subcontractor is defined as one who contracts with the Contractor to furnish materials and labor, or labor only for the performance of work at the site of the work or who will specially fabricate a portion of the work off the site pursuant to detailed drawings in the contract documents.

Public Contract Code § 4104 requires all bidders to list subcontractors who will perform work in excess of ½% of the total bid, or in the case of streets and highways, ½% or \$10,000, whichever is greater.

Public Contract Code § 6109 prohibits a contractor from performing work with a subcontractor who is debarred pursuant to Labor Code §§ 1777.1 or 1777.7.

B1.13 PROPOSAL GUARANTEE

The proposal shall be accompanied by a proposal guarantee bond duly completed on the form provided herewith by a guarantee company authorized to carry on business in the State of California for payments to the Agency in the sum of at least 10% of the total amount of the bid proposal, or alternatively by a certified or cashier's check payable to the Agency, or cash, in the sum of at least 10% of the total amount of the bid proposal. The amount payable to the Agency under the proposal guarantee shall be forfeited to the Agency in case of failure or neglect of the bidder to furnish, execute and deliver to the Agency the required bonds, evidence of insurance and to enter into, execute and deliver to the Agency the agreement on the form provided herewith, within ten (10) days after being notified in writing by the Agency that the award has been made and the agreement is ready for execution.

B1.14 MODIFICATION OF PROPOSAL

A modification of a bid proposal already received will be considered only if the modification is received before the time announced for the opening of bids. All modifications shall be made in writing, executed and submitted in the same form and manner as the original bid proposal.

B1.15 WITHDRAWAL OF PROPOSAL

A proposal may be withdrawn by a written request signed by the bidder. Such requests must be delivered to the Agency's designated official prior to the bid opening hour stipulated in **SECTION A – NOTICE INVITING SEALED BIDS**. Proposals may not be withdrawn after that time without forfeiture of the proposal guarantee. The withdrawal of a proposal will not prejudice the right of the bidder to submit a new proposal, providing there is time to do so.

B1.16 POSTPONEMENT OF BID OPENING

The Agency reserves the right to postpone the date and time for opening of bids at any time prior to the date and time announced in **SECTION A–NOTICE INVITING SEALED BIDS**.

B1.17 DISQUALIFICATION OF BIDDERS

If there is reason to believe that collusion exists among the bidders, none of the bids of the participants in such collusion will be considered. In the event that any bidder acting as a prime Contractor has an interest in more than one proposal, all such proposals will be rejected, and the bidder will be disqualified. This restriction does not apply to subcontractors or suppliers who may submit quotations to more than one bidder, and while doing so, may also submit a formal proposal as a prime Contractor.

B1.18 REJECTION OF PROPOSALS

The Agency reserves the right to reject any and all proposals, to waive any irregularity, and to reject any proposals which are incomplete, obscure or irregular; any proposals which omit a bid on any one or more items on which bids are required; which omit unit prices if unit prices are required; in which unit prices are unbalanced in the opinion of the Agency; which are accompanied by insufficient or irregular bid security; or which are from bidders who have previously failed to perform properly or to timely complete contracts of any nature.

B1.19 AWARD OF CONTRACT

The Contract will be awarded, if at all, to the lowest responsible and responsive bidder, whose bid proposal is not rejected for cause by the Agency. However, until an award is made, the Agency reserves right will be reserved to reject any or all bids, and to waive technical errors or discrepancies, if to do so is deemed to best serve the interests of the Agency. In no event will an award be made until all necessary investigations are made as to the responsibility and qualifications of the bidder to whom it is proposed to make such an award.

Each bidder's attention is directed to the possibility that the award of the project may be delayed for various reasons. The Agency reserves the right to delay the award of the project for 45 calendar days. After 45 calendar days, the low bidder may at any time request release from its bid without penalty.

The acceptance of a proposal will be evidenced by a Notice of Award of Contract in writing, delivered by mail to the bidder whose proposal is accepted. No other act of the Agency shall constitute acceptance of a proposal. The award of contract shall obligate the bidder whose proposal is accepted to furnish a performance bond, payment bond and maintenance bond, as well as evidence of insurance and to execute the contract set forth herein.

B1.20 RETURN OF PROPOSAL GUARANTEES

Within ten (10) calendar days after the bids are opened, the Agency will release the proposal guarantees accompanying the proposals which are not to be considered in making the award. Proposal guarantees for the two lowest bidders will be held until the contract has been fully executed, after which they will be returned to the respective bidders.

B2.21 EXECUTION OF CONTRACT

The contract agreement shall be executed in duplicate by the successful bidder and returned, together with the contract bonds and evidence of insurance, within ten (10) calendar days after the notification of the contract award by the Agency in writing. In case of failure of the successful bidder to execute the contract agreement within ten (10) calendar days after such notice, or any subsequent extension approved by Agency, the Agency at its option may consider the bidder in default, in which case the bid bond or proposal guarantee accompanying the bid shall become the property of the Agency. After execution by the Agency, one original contract shall be returned to the Contractor.

B1.22 FLEXIBILITY OF BID SCHEDULE

It is the intent of the Agency to award a contract to the lowest responsible and responsive bidder and the flexibility shown in the bid schedule is necessary to ensure a project within the Agency's budget limits and constraints.

Bidder shall submit an itemized list of all applicable items to support the **Bid Schedule Total**.

SECTION C

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

PROPOSAL INFORMATION AND DOCUMENTS

**BID PROPOSAL
BID SCHEDULE
BID BOND
BID GUARANTEE
BIDDER INFORMATION
EXPERIENCE STATEMENT
DESIGNATION OF SUPPLIERS AND SUBCONTRACTORS**

BID PROPOSAL

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

The undersigned, as bidder, declares that he/she has examined all of the contract documents and specifications contained in this project manual for the above referenced project, and that he/she will contract with the Agency on the form of contract provided herewith to do everything necessary for the fulfillment of this contract at the price, and on the terms and conditions therein contained.

The following are included and are to be considered as forming a part of this proposal: **BID PROPOSAL, BID SCHEDULE, BID BOND, NONCOLLUSION AFFIDAVIT, BID GUARANTEE** (if submitted in lieu of Bid Bond), **BIDDER INFORMATION, EXPERIENCE STATEMENT, DESIGNATION OF SUPPLIERS & SUBCONTRACTORS, BIDDER'S STATEMENT REGARDING INSURANCE COVERAGE, and STATEMENT REGARDING CONTRACTOR'S LICENSING LAWS.**

Contractor acknowledges receipt and inclusion of addenda _____ to _____ into this bid proposal and the contract documents.

Attached is a Bid Bond duly completed by a guarantee company authorized to carry on business in the State of California in the amount of at least 10% of the total amount of this proposal, or alternatively, there is attached a certified or cashier's check payable to the Agency or evidence of a cash payment to the Agency, in the amount of at least 10% of the total amount of our proposal.

If this proposal is accepted, we agree to sign the contract form and to furnish the Performance Bond and the Payment Bond (each to be 100% of the bid amount), the Maintenance Bond (to be 50% of the bid amount), and the required evidences of insurance within ten (10) calendar days after receiving written Notice of Award of Contract.

We further agree if our proposal is accepted and a contract for the performance of the work is entered into with the Agency, to so plan the work and to prosecute it with such diligence that all of the work shall be completed within the time stipulated in **SECTION E - TIME OF COMPLETION.**

NAME OF BIDDER: _____

MAILING ADDRESS: _____

STATE OF INCORPORATION: _____

AUTHORIZED SIGNATURE: _____

TITLE: _____

DATE: _____

(If Company is a Corporation, provide corporate resolution per **B 1.06 PROPOSAL.**)

BID SCHEDULE

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

The cost of all labor, services, material, equipment and installation necessary for the completion of the work itemized under this schedule, even though not shown or specified, shall be included in the unit price for the various items shown herein. For a description of the work associated with each bid item, see **SECTION E–SPECIAL PROVISIONS**. The Agency reserves the right to increase or decrease the quantity of any item or omit items as may be necessary, and the same shall in no way affect or void the contract, except that appropriate additions or deductions from the contract total price will be made at the stipulated unit price in accordance with these Contract Documents.

The Agency reserves the right to reject any and all bids, to waive any informality in a bid, and to make awards in the interest of the Agency.

The Contractor shall perform an independent take-off of the plans and bid accordingly. Quantities listed in this Bid Schedule are intended only as a guide for the Contractor as to the anticipated order of magnitude of work. The Contractor shall be responsible for verifying all estimated quantities. The Contractor will be reimbursed for the quantity of items actually installed as required by the Contract Documents, including addenda, and shown on the plans to neat line and grade.

The Contractor will not be reimbursed for work performed for his convenience, or as required to adapt to field conditions, or for unauthorized work performed outside of that required by the Contract Documents.

The Contractor shall be responsible for calculating and providing totals for the bid schedule. The proposal schedule shall include all costs for labor, services, material, equipment, and installation associated with completing the work in place per the plans, specifications, and details.

NAME OF BIDDER: _____
CONTRACTOR'S LICENSE NO.: _____
AUTHORIZED SIGNATURE: _____
TITLE: _____
DATE: _____

BID SCHEDULE (Continued)**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23****IN THE CITY OF LOS ALAMITOS, CALIFORNIA****BID SCHEDULE A**

Item No.	Item Description	Estimated Quantity	Unit	Unit Price	Item Amount
1	Remove and Dispose of Existing Roof Tiles and Repair (Roof B-1, B-3, B-4, C-1, D, and E) (Angled Roofs)	1	LS	\$	\$
2	Remove and Dispose of Existing Roof Tiles and Repair (Roof B-2, C-2) (Flat Roofs)	1	LS		
3	Furnish and Install Fascia Board	100	LF		
4	Furnish and Install Rigid Insulation	2250	SF		
5	Furnish and Install Roof Gutters	300	SF		
6	Replace Ceiling Panels	500	SF		
7	Replace Drain Pipe System	1	LS		
8	Replace Drain to Existing Outlet	1	LS		
9	Add Interior Ceiling Paneling to Bottom of Truss Joist Ceiling (B-1, C-1, and D); Demonstrate Structural Integrity of Existing Truss Joist Due to Additional Loading From Ceiling Wood Paneling	8500	SF		
10	Remove and Replace Shade Structures (Existing Concrete Columns to Remain)	3	EA		
11A	In Truss Joist Ceiling Rooms (B-1, C-1, and D), Inspect All Interior Walls for Water Damage and Repair (0-400 SF	400	SF		
11B	In Truss Joist Ceiling Rooms (B-1, C-1, and D), Inspect All Interior Walls for Water Damage and Repair (>400 SF)	500	SF		
12	Paint Community Center Interior Rooms With City Approved Paint Color and Texture, Rooms (B-1, C-1, and D)	1	LS		
13	In Truss Joist Ceiling Rooms (B-1, C-1, and D), Replace Existing Lighting and Lighting Appurtenances, Per City Approved Lighting Detail. Contractor to Submit Engineered Lighting Calculations and Plan for City Review	1	LS		
Total - Schedule A					

Bid Schedule Total (Schedule A) \$ _____

Bid Schedule Total (Schedule A) (in words):

The Contractor shall be responsible for calculating and providing unit prices for the schedule. The proposal schedule shall include all costs for services, labor, materials, equipment, and installation associated with completing the work in place per specifications.

For the purposes of determining the lowest responsible bidder, the Bid Schedule Total of Schedule A shall be considered.

(Company Name of Bidder)

(Date)

BID BOND

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

KNOW ALL MEN BY THESE PRESENTS that Bidder _____, as PRINCIPAL, and _____, as SURETY, are held and firmly bound unto the City of Los Alamitos as AGENCY, in the penal sum of _____ dollars (\$_____), which is ten percent (10%) of the total amount bid by PRINCIPAL to AGENCY for the above stated project, for the payment of which sum, PRINCIPAL and SURETY agree to be bound, jointly and severally, firmly by these presents.

The SURETY, for value received, hereby stipulates and agrees that the obligations of said SURETY and its BOND shall be in no way impaired or affected by any extension of the time within which the AGENCY may accept such Bid; and said SURETY does hereby waive notice of any such extension.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas PRINCIPAL is about to submit a bid to AGENCY for the above stated project, if said bid is rejected, or if said bid is accepted and a contract is awarded and entered into by PRINCIPAL in the manner and time specified, and PRINCIPAL provides the required payment and performance bonds and insurance coverages to AGENCY, then this obligation shall be null and void, otherwise it shall remain in full force and effect in favor of AGENCY.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this__ day of _____, 2023.

PRINCIPAL* _____

SURETY* _____

*Provide BIDDER and SURETY name, address and telephone number and the name, title, address and telephone number for their authorized representatives. Power of Attorney must be attached.

Subscribed and sworn to this day of....., 2023.

NOTARY PUBLIC _____ (SEAL)

BID GUARANTEE

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

Note: The following statement shall be used if other than a bid surety bond accompanies bid.

“Accompanying this proposal is a money order*, certified check*, cashier’s check*, cash*, payable to the order of the City of Los Alamitos in the amount of _____ Dollars (\$_____) which is at least ten percent (10%) of the total amount of this bid. The proceeds of this bid guarantee shall become the property of the City of Los Alamitos provided this bid is accepted by said City, through action of its legally constituted contracting authorities, and the undersigned fails to execute a contract and furnish the required bonds and insurance within the stipulated time. Otherwise, the proceeds of this bid guarantee shall be returned to the undersigned.”

NAME OF BIDDER:

MAILING ADDRESS:

.....

.....

AUTHORIZED SIGNATURE:

TITLE:

DATE:

(*Delete the inapplicable words)

BIDDER INFORMATION

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23**

IN THE CITY OF LOS ALAMITOS, CALIFORNIA

BIDDER certifies that the following information is true and correct:

Name of Bidder:.....

Business Address:

Telephone:.....FAX:.....

E-mail:

Contractor's License No.:.....Date License Issued:

License Expiration Date:.....

The following are the names, titles, addresses, and phone numbers of all individuals, firm members, partners, joint venturers, and/or corporate officers having a principal interest in this proposal: (Name / Title / Address / Telephone)

.....
.....
.....
.....

Any voluntary or involuntary bankruptcy judgments against any principal having an interest in this proposal are as follows: (Type of Judgment / Date)

.....
.....
.....
.....

All current and prior DBA's, aliases, and/or fictitious business names for any principal having an interest in this proposal are as follows: (Principal / DBA's / Applicable Dates)

.....
.....

Prior Disqualification

Has your firm ever been disqualified from performing work for any City, County, Public or Private Contracting entity? Yes / No _____. If yes, provide the following information. (If more than once, use separate sheets):

Date: Entity:

Location:

Reason:

Provide Status and any Supplemental Statement:

.....

.....

.....

.....

Has your firm been reinstated by this entity? Yes / No

Violations of Federal or State Law

A. Has your firm or its officers been assessed any penalties by any agency for noncompliance, violations of Federal or State labor laws and/or business or licensing regulations within the past five (5) years relating to your construction projects?

Yes / No: Federal / State:

If “yes”, identify and describe, (including status):

.....

.....

.....

.....

Have the penalties been paid? Yes / No: _____

B. Does your firm or its officers have any ongoing investigations by any AGENCY regarding violations of the State Labor Code, California Business and Professions Code or State Licensing laws?

Yes / No: Codes / Laws: Section / Article:

If "yes", identify and describe (including status):

.....

.....

I declare under penalty of perjury under the laws of the State of California that all of the representations made in this **BIDDER INFORMATION** are true and correct. Executed this _____ day of _____, 2023, at _____, California.

Authorized Representative Signature and Title _____

EXPERIENCE STATEMENT

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

Pursuant to this **BID PROPOSAL** and **QUALIFICATION OF BIDDERS**, the following is a record of the Bidder's experience in construction of a type similar in magnitude and character to that contemplated under this contract. Included in this section should be a complete list of references for similar projects in terms of scope of work, value of work, and time constraints. The Contractor must demonstrate that he/she has experience with this type of project and can manage this project effectively. If necessary, additional numbered pages can be attached to this page. The Contractor must be properly licensed to perform the work in this project as determined by the State Contractor's License Board.

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel # _____

Description: _____

Subject to Federal Labor Standards: Yes No

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel # _____

Description: _____

Subject to Federal Labor Standards: Yes No

EXPERIENCE STATEMENT (Continued)

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel # _____

Description: _____

Subject to Federal Labor Standards: Yes No

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel # _____

Description: _____

Subject to Federal Labor Standards: Yes No

I declare under penalty of perjury under the laws of the State of California that all of the representations made in this **EXPERIENCE STATEMENT** are true and correct. Executed this _____ day of _____, 20__, at _____, California.

Authorized Representative Signature and Title

DESIGNATION OF SUPPLIERS AND SUBCONTRACTORS

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23

IN THE CITY OF LOS ALAMITOS, CALIFORNIA

The following is a list of subcontractors and suppliers, as defined in 2-3 SUBCONTRACTS of the Standard Specifications, who will perform work or provide materials of value in excess of one-half percent of the total bid price or \$10,000, whichever is greater.

No subcontractor shall perform work in excess of the amount specified in 2-3 SUBCONTRACTS of the Standard Specifications, without the written approval of the Agency.

The Contractor is responsible to ensure that appropriate provisions are to be inserted in all subcontracts to bind subcontractors to the contract requirements as contained herein.

Each subcontractor must agree to comply with all applicable Federal, State, and local requirements.

Name and Address of Subcontractor	Employer Tax Id #	MBE/WBE (Y/N)	Work Subcontracted	Portion of Work (% of Contract Price)

Name and Address of Subcontractor	Employer Tax Id #	MBE/WBE (Y/N)	Work Subcontracted	Portion of Work (% of Contract Price)

These representations are made under the penalty of perjury under the laws of the State of California. The undersigned hereby certifies that each subcontractor has been notified in writing of its equal opportunity obligations.

NAME OF BIDDER: _____

AUTHORIZED SIGNATURE: _____

Date: _____

SECTION D

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

CONTRACT INFORMATION AND DOCUMENTS

CONTRACT AGREEMENT

PAYMENT BOND

FAITHFUL PERFORMANCE BOND

MAINTENANCE BOND

NON-COLLUSION AFFIDAVIT

WORKER'S COMPENSATION INSURANCE CERTIFICATE

INSURANCE ENDORSEMENT

STATEMENT RE INSURANCE COVERAGE

STATEMENT RE THE CONTRACTOR'S LICENSING LAWS

ARTICLES OF AGREEMENT

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

THIS COMMUNITY CENTER ROOF REPAIR, SPECIFICATION NO. CIP 22/23 AGREEMENT (“AGREEMENT”) is made and entered into for the above-stated project this ___ day of Month, 2023 (*Council Action Date Here*), BY AND BETWEEN the City of Los Alamitos, a municipal corporation, hereafter designated as “AGENCY”, and CONTRACTOR’S BUSINESS NAME, a _____ (State) _____ (corporation, partnership, limited liability company, or other business form), hereafter designated as “CONTRACTOR.”

WITNESSETH that AGENCY and CONTRACTOR have mutually agreed as follows:

ARTICLE I: Contract Documents

The contract documents for the COMMUNITY CENTER ROOF REPAIR NO. CIP 22/23, shall consist of the Notice Inviting Sealed Bids, Instructions To Bidders, Bid Proposal, Bid Schedule, Standard Specifications, Special Provisions, and all referenced specifications, details, standard drawings, and appendices; together with two signed copies of the AGREEMENT, two signed copies of required bonds; one copy of the insurance certificates, permits, notices, and affidavits; and also including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to ensure its completion in an acceptable manner (collectively referred to herein as the “Contract Documents”). All of the provisions of the Contract Documents are made a part hereof as though fully set forth herein.

ARTICLE II: Scope of Work

For and in consideration of the payments and agreements to be made and performed by AGENCY, CONTRACTOR agrees to furnish all materials and equipment and perform all work required for the above-stated project, and to fulfill all other obligations as set forth in the aforesaid contract documents.

AGENCY hereby employs CONTRACTOR to provide the materials, do the work, and fulfill the obligations according to the terms and conditions herein contained and referred to, for the prices provided herein, and hereby contracts to pay the same at the time, in the manner, and upon the conditions set forth in this AGREEMENT.

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to this AGREEMENT, CONTRACTOR offers and agrees to assign to the AGENCY all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (Section 16700, et seq.) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to CONTRACTOR, without further acknowledgment by the parties.

ARTICLE III: Compensation

A. CONTRACTOR agrees to receive and accept the prices set forth in the Bid Proposal and Bid Schedule as full compensation for furnishing all materials, performing all work, and fulfilling all obligations hereunder. In no event shall the total compensation and costs payable to CONTRACTOR under this Agreement exceed the sum of Dollars (\$.....), unless specifically approved in advance and in writing by AGENCY

Such compensation shall cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress or prior to its acceptance including those for well and faithfully completing the work and the whole thereof in the manner and time specified in the aforesaid Contract Documents; and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work.

B. This AGREEMENT is subject to the provisions of Article 1.7 (commencing at Section 20104.50) of Division 2, Part 3 of the Public Contract Code regarding prompt payment of contractors by local governments. Article 1.7 mandates certain procedures for the payment of undisputed and properly submitted payment requests within 30 days after receipt, for the review of payment requests, for notice to Contractor of improper payment requests, and provides for the payment of interest on progress payment requests which are not timely made in accordance with that Article. This AGREEMENT hereby incorporates the provisions of Article 1.7 as though fully set forth herein.

C. At the request and expense of CONTRACTOR, securities equivalent to the amount withheld shall be deposited with AGENCY, or with a state or federally chartered bank in this state as the escrow agent, who shall then pay those moneys to CONTRACTOR upon Agency's confirmation of CONTRACTOR'S satisfactory completion of this AGREEMENT. At any time during the term of this AGREEMENT CONTRACTOR may, at its own expense, substitute securities for funds otherwise withheld as retention (or the retained percentage) in accordance with Public Contract Code § 22300.

ARTICLE IV: Labor Code

AGENCY and CONTRACTOR acknowledge that this AGREEMENT is subject to the provisions of Division 2, Part 7, Chapter 1 (commencing with Section 1720) of the California Labor Code relating to public works and public agencies and agree to be bound by all the provisions thereof as though set forth fully herein. Full compensation for conforming to the requirements of the Labor Code and with other Federal, State and local laws related to labor, and rules, regulations and ordinances which apply to any work performed pursuant to this AGREEMENT is included in the price for all contract items of work involved.

This AGREEMENT is further subject to prevailing wage law, including, but not limited to, the following:

A. The CONTRACTOR shall pay the prevailing wage rates for all work performed under the AGREEMENT. When any craft or classification is omitted from the general prevailing wage determinations, the CONTRACTOR shall pay the wage rate of the craft or classification most closely related to the omitted classification. The CONTRACTOR shall forfeit as a penalty to AGENCY \$200.00 or any greater penalty provided in the Labor Code for each Calendar Day, or portion thereof, for each worker paid less than the prevailing wage rates for any work done under the AGREEMENT in violation of the provisions of the Labor Code whether such worker is employed in the execution of the work by CONTRACTOR or by any Subcontractor under CONTRACTOR. In addition, CONTRACTOR shall pay each worker the difference between such prevailing wage rates and the amount paid to each worker for each Calendar Day, or portion thereof, for which each worker was paid less than the prevailing wage rate.

B. CONTRACTOR shall comply with the provisions of Labor Code Section 1777.5 concerning the employment of apprentices on public works projects, and further agrees that CONTRACTOR is responsible for compliance with Section 1777.5 by all of its subcontractors.

C. Pursuant to Labor Code § 1776, CONTRACTOR and any subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with this AGREEMENT. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following: (1) The information contained in the payroll record is true and correct; and (2) The employer has complied with the requirements of Labor Code §§ 1811, and 1815 for any work performed by his or her employees on the public works project. The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours as required by Labor Code § 1776.

D. This AGREEMENT is further subject to 8-hour work day and wage and hour penalty law, including, but not limited to, Labor Code Sections 1810 and 1813, as well as California nondiscrimination laws, as follows:

CONTRACTOR shall strictly adhere to the provisions of the Labor Code regarding the 8-hour day and the 40-hour week, overtime, Saturday, Sunday and holiday work and nondiscrimination on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex or sexual orientation, except as provided in Section 12940 of the Government Code. Pursuant to the provisions of the Labor Code, eight hours' labor shall constitute a legal day's work. Work performed by CONTRACTOR's employees in excess of eight hours per day, and 40 hours during any one week, must include compensation for all hours worked in excess of eight hours per day, or 40 hours during any one week, at not less than one and one-half times the basic rate of pay. CONTRACTOR shall forfeit as a penalty to AGENCY \$25.00 or any greater penalty set forth in the Labor Code for each worker employed in the execution of the work by CONTRACTOR or by any Subcontractor of CONTRACTOR, for each Calendar Day during which such worker is required or permitted to the work more than eight hours in one Calendar Day or more than 40 hours in any one calendar week in violation of the Labor Code.

E. This AGREEMENT is subject to Public Contract Code Section 6109: CONTRACTOR shall be prohibited from performing work on this project with a subcontractor who is ineligible to perform work on the project pursuant to Sections 1777.1 or 1777.7 of the Labor Code.

ARTICLE V: Work Site Conditions

A. In compliance with and pursuant to Government Code Section 4215, AGENCY shall assume the responsibility, as between the parties to this AGREEMENT, for the timely removal, relocation, or protection of existing main- or trunk-line utility facilities located on the site of any construction project that is a subject of this AGREEMENT, if such utilities are not identified by AGENCY in the plans and specifications made a part of the invitation for bids. The Contract Documents shall include provisions to compensate CONTRACTOR for the costs of locating, repairing damage not due to the failure of CONTRACTOR to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work. CONTRACTOR shall not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of AGENCY or the owner of a utility to provide for removal or relocation of such utility facilities.

B. To the extent that the work requires trenches in excess of five feet (5') and is estimated to cost more than \$25,000, prior to any excavation, CONTRACTOR must provide the AGENCY, or a registered civil or structural engineer employed by the AGENCY to whom authority has been delegated to accept such plans, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer. Nothing in this section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders.

C. This AGREEMENT is further subject to Public Contract Code Section 7104 with regard to any trenches deeper than four feet (4') involved in the proposed work as follows:

CONTRACTOR shall promptly, and before the following conditions are disturbed, notify AGENCY, in writing, of any:

- (1) Material that CONTRACTOR believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, which is required to be removed to a Class I, Class II, or Class III disposal site in accordance with existing law.
- (2) Subsurface or latent physical conditions at the site differing from those indicated by all available information provided prior to the deadline for submission of bids.
- (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

AGENCY shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or involve hazardous waste, and cause a decrease or increase in CONTRACTOR's cost

of, or the time required for, performance of any part of the work, AGENCY shall issue a change order under the procedures described in this AGREEMENT.

In the event that a dispute arises between AGENCY and CONTRACTOR whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in CONTRACTOR's cost of, or time required for, performance of any part of the work, CONTRACTOR shall not be excused from any scheduled completion date provided in the AGREEMENT, but shall proceed with all work to be performed under the AGREEMENT. CONTRACTOR shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

ARTICLE VI: Insurance

A. With respect to performance of work under this AGREEMENT, CONTRACTOR shall maintain, and shall require all of its subcontractors to maintain, insurance as required by Section E "Standard Specifications" of the Contract Documents.

B. This AGREEMENT is further subject to Workers' Compensation obligations, including, but not limited to, California Labor Code Sections 1860 and 1861 as follows:

CONTRACTOR shall take out and maintain, during the life of this contract, Worker's Compensation Insurance for all of CONTRACTOR's employees employed at the site of improvement; and, if any work is sublet, CONTRACTOR shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by CONTRACTOR. CONTRACTOR and any of CONTRACTOR's subcontractors shall be required to provide AGENCY with a written statement acknowledging its obligation to secure payment of Worker's Compensation Insurance as required by Labor Code § 1861; to wit: 'I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.' If any class of employees engaged in work under this AGREEMENT at the site of the Project is not protected under any Worker's Compensation law, CONTRACTOR shall provide and shall cause each subcontractor to provide adequate insurance for the protection of employees not otherwise protected. CONTRACTOR shall indemnify and hold harmless AGENCY for any damage resulting from failure of either CONTRACTOR or any subcontractor to take out or maintain such insurance.

ARTICLE VII: Indemnification

To the fullest extent permitted by law, CONTRACTOR shall, at its sole cost and expense, fully defend, indemnify and hold harmless AGENCY, its authorized representatives and their respective subsidiaries, affiliates, members, directors, officers, employees and agents (collectively, the "Indemnitees") from and against any and all claims, actions, demands, costs, judgments, liens, penalties, liabilities, damages, losses, and expenses, including but not limited to any fees of accountants, attorneys or other professionals (collectively "Liabilities"), arising out of, in connection with, resulting from or related to, any act, omission, fault or negligence of

CONTRACTOR, CONTRACTOR's Representative, or any of its officers, agents, employees, Subcontractors or Suppliers, or any person or organization directly or indirectly employed by any of them (Collectively, the "Indemnitors"), in connection with or relating to or claimed to be in connection with or relating to the work performed under this AGREEMENT.

If CONTRACTOR is a joint venture or partnership, each venturer or partner shall be jointly and severally liable for any and all of the duties and obligations of CONTRACTOR that are assumed under or arise out of this AGREEMENT. Each of such venturers or partners waives notice of the breach or non-performance of any undertaking or obligation of CONTRACTOR contained in, resulting from or assumed under this AGREEMENT, and the failure to give any such notice shall not affect or impair such venturer's or partner's joint and several liability hereunder.

ARTICLE VIII: Binding Effect

AGENCY and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto and to its partners, successors, assigns, and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract Documents. This AGREEMENT is not assignable nor the performance of either party's duties delegable without the prior written consent of the other party. Any attempted or purported assignment or delegation of any of the rights or obligations of either party without the prior written consent of the other shall be void and of no force and effect.

ARTICLE IX: Dispute Resolution

A. In the event of a dispute arising out of the terms of this AGREEMENT, including any action brought to declare the rights granted herein or to enforce any of the terms of this AGREEMENT, the party prevailing in such dispute shall be entitled to all reasonable costs and litigation expenses actually incurred, including fees of attorneys and expert witnesses. Any court action arising out of this AGREEMENT shall be filed in the Los Angeles County Superior Court. Any alternative dispute resolution proceeding arising out of this AGREEMENT shall be heard in the City of Los Angeles or the City of Los Alamitos, California.

B. AGENCY shall have full authority to compromise or otherwise settle any claim relating to this AGREEMENT or any part hereof at any time. AGENCY shall provide timely notification to CONTRACTOR of the receipt of any third-party claim relating to this AGREEMENT. AGENCY shall be entitled to recover its reasonable costs incurred in providing the notification required by this section.

C. This AGREEMENT is further subject to the provisions of Article 1.5 (commencing at Section 20104) of Division 2, Part 3 of the Public Contract Code regarding the resolution of public works claims of less than \$375,000. Article 1.5 mandates certain procedures for the filing of claims and supporting documentation by Contractor, for the response to such claims by the Agency, for a mandatory meet and confer conference upon the request of Contractor, for mandatory nonbinding mediation in the event litigation is commenced, and for mandatory judicial arbitration upon the parties' failure to resolve the dispute through mediation. This AGREEMENT hereby incorporates the provisions of Article 1.5 as though fully set forth herein.

ARTICLE X: Independent Contractor

CONTRACTOR is and shall at all times remain as to AGENCY, a wholly independent contractor. Neither AGENCY nor any of its agents shall have control of the conduct of CONTRACTOR or any of CONTRACTOR's employees, except as herein set forth. CONTRACTOR shall not at any time or in any manner represent that it or any of its agents or employees are in any manner agents or employees of AGENCY.

ARTICLE XI: Taxes

CONTRACTOR is responsible for paying all retail, sales and use, transportation, export, import, special or other taxes and duties applicable to, and assessable against any work, materials, equipment, services, processes and operations incidental to or involved in this AGREEMENT. The CONTRACTOR is responsible for ascertaining and arranging to pay such taxes and duties. The prices established in this AGREEMENT shall include compensation for any taxes the CONTRACTOR is required to pay by laws and regulations in effect as of the execution of this AGREEMENT.

ARTICLE XII: Notices

All notices and communications shall be sent in writing to the parties at the following addresses:

AGENCY: Dave Hunt

CONTRACTOR: [INSERT CONTACT]

CITY OF LOS ALAMITOS

CONTRACTOR'S BUSINESS NAME

3191 Katella Avenue

Mailing Street Address

Los Alamitos, CA 90720

City, State Zip Code

ARTICLE XIII: Entire Agreement

This AGREEMENT supersedes any and all other agreements, either oral or written, between the parties and contains all of the covenants and agreements between the parties pertaining to the work of improvements described herein. Each party to this AGREEMENT acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that any other agreement, statement or promise not contained in this AGREEMENT shall not be valid or binding. Any modification of this AGREEMENT will be effective only if signed by the party to be charged.

The benefits and obligations of this AGREEMENT shall inure to and be binding upon the representatives, agents, partners, heirs, successors and assigns of the parties hereto. This AGREEMENT shall be construed pursuant to the laws of the State of California.

ARTICLE XIV: Authority to Contract

The signatories hereto represent that they are authorized to sign on behalf of the respective parties they represent and are competent to do so, and each of the parties hereto hereby irrevocably waives any and all rights to challenge signatures on these bases.

ARTICLE XV: General Provisions

A. All reports, documents or other written material (“written products” herein) developed by CONTRACTOR in the performance of this Agreement shall be and remain the property of AGENCY without restriction or limitation upon its use or dissemination by AGENCY. CONTRACTOR may take and retain copies of such written products as desired, but no such written products shall be the subject of a copyright application by CONTRACTOR.

B. In the performance of this Agreement, CONTRACTOR shall not discriminate against any employee, subcontractor, or applicant for employment because of race, color, creed, religion, sex, marital status, sexual orientation, national origin, ancestry, age, physical or mental disability, medical condition or any other unlawful basis.

C. The captions appearing at the commencement of the sections hereof, and in any paragraph thereof, are descriptive only and for convenience in reference to this Agreement. Should there be any conflict between such heading, and the section or paragraph at the head of which it appears, the section or paragraph hereof, as the case may be, and not such heading, shall control and govern in the construction of this Agreement. Masculine or feminine pronouns shall be substituted for the neuter form and vice versa, and the plural shall be substituted for the singular form and vice versa, in any place or places herein in which the context requires such substitution(s).

D. The waiver by AGENCY or CONTRACTOR of any breach of any term, covenant or condition herein contained shall not be deemed to be a waiver of such term, covenant or condition or of any subsequent breach of the same or any other term, covenant or condition herein contained. No term, covenant or condition of this Agreement shall be deemed to have been waived by AGENCY or CONTRACTOR unless in writing.

E. Each right, power and remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise shall be cumulative and shall be in addition to every other right, power, or remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise. The exercise, the commencement of the exercise, or the forbearance of the exercise by any party of any one or more of such rights, powers or remedies shall not preclude the simultaneous or later exercise by such party of any of all of such other rights, powers or remedies.

IN WITNESS WHEREOF the parties hereto for themselves, their heirs, executors, administrators, successors, and assigns do hereby agree to the full performance of the covenants herein contained and have caused this AGREEMENT to be executed in duplicate by setting hereunto their names, titles, hands, and seals this Xth day of Month, 2023 (*Council Action Date Here*)

CONTRACTOR: Contractor’s Business Name

Contractor’s Sign Name, Title

Contractor’s License No. XXXXXX

Subscribed and sworn to this _____ day of _____, 20__.

NOTARY PUBLIC _____ (SEAL)

AGENCY: _____
Mayor _____ Date _____
City of Los Alamitos

ATTESTED: _____
Windmera Quintanar, MMC, City Clerk _____ Date _____
City of Los Alamitos

APPROVED AS
TO FORM: _____
Michael S. Daudt, City Attorney _____ Date _____
City of Los Alamitos

(EXECUTE IN DUPLICATE)

PAYMENT BOND

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23**

IN THE CITY OF LOS ALAMITOS, CALIFORNIA

WHEREAS, the City of Los Alamitos, as AGENCY has awarded to Contractor's Business Name, as CONTRACTOR, a contract for the above-stated project;

AND WHEREAS, CONTRACTOR is required to furnish a bond in connection with the contract, to secure the payment of claims of laborers, mechanics, material persons, and other persons as provided by law.

NOW THEREFORE, we, the undersigned CONTRACTOR and SURETY, are held and firmly bound unto AGENCY in the sum of **[DESCRIBE VERBALLY; 100% OF TOTAL CONTRACT AMOUNT—TO BE INSERTED BY CONTRACTOR]**Dollars (\$XXX,XXX.XX) which is one hundred percent (100%) of the total contract amount for the above-stated project, for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH that if CONTRACTOR, its heirs, executors, administrators, successors, assigns or subcontractors, shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor withheld, and to pay over to the Employment Development Department from the wages of employees of the CONTRACTOR and its subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, that the surety or sureties herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, SURETY will pay reasonable attorneys' fees to the plaintiffs and AGENCY in an amount to be fixed by the court.

This bond shall inure to the benefit to any of the persons named in Civil Code Section 3181 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

The SURETY hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the specifications accompanying it shall in any manner affect SURETY's obligations on this bond. The SURETY hereby waives notice of any such change, extension, alteration or addition and hereby waives the requirements of Section 2845 of the Civil Code as a condition precedent to any remedies AGENCY may have.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this day of _____, 20__.

Contractor* Contractor's Signer's Name, Title
Contractor's Business Name
Mailing Street Address
City, State, Zip Code
Telephone #

Surety* _____

*Provide CONTRACTOR and SURETY name, address and telephone number and the name, title, address and telephone number for the respective authorized representatives. Power of Attorney must be attached.

Subscribed and sworn to this__ day of _____, 20__.

NOTARY PUBLIC..... (SEAL)

(EXECUTE IN DUPLICATE)

FAITHFUL PERFORMANCE BOND

COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA

KNOW ALL PERSONS BY THESE PRESENTS That Contractor's Business Name, hereinafter referred to as "CONTRACTOR" as PRINCIPAL, and _____, a corporation duly organized and doing business under and by virtue of the laws of the State of California and duly licensed for the purpose of making, guaranteeing, or becoming sole surety upon bonds or undertakings as Surety, are held and firmly bound unto the CITY OF LOS ALAMITOS, CALIFORNIA, hereinafter referred to as the "AGENCY" in the sum of **[DESCRIBE VERBALLY; 100% OF TOTAL CONTRACT AMOUNT—TO BE INSERTED BY CONTRACTOR]**Dollars (\$XXX,XXX.XX); which is one hundred percent (100%) of the total contract amount for the above stated project; 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, assigns and successors, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that whereas CONTRACTOR has been awarded and is about to enter into a Contract with AGENCY to perform all work required pursuant to the contract documents for the project entitled: COMMUNITY CENTER ROOF REPAIR, SPECIFICATION NO. CIP 22/23 CONTRACT which Contract is by this reference incorporated herein, and is required by AGENCY to give this Bond in connection with the execution of the Contract;

NOW, THEREFORE, if CONTRACTOR and his or her Subcontractors shall well and truly do and perform all the covenants and obligations of the Contract on his or her part to be done and performed at the times and in the manner specified herein including compliance with all Contract specifications and quality requirements, then this obligation shall be null and void, otherwise it shall be and remain in full force and effect;

PROVIDED, that any alterations in the work to be done, or in the material to be furnished, which may be made pursuant to the terms of the Contract, shall not in any way release CONTRACTOR or the Surety thereunder, nor shall any extensions of time granted under the provisions of the Contract release either CONTRACTOR or said Surety, and notice of such alterations of extensions of the Contract is hereby waived by said Surety.

In the event suit is brought upon this Bond by AGENCY and judgment is recovered, said Surety shall pay all costs incurred by AGENCY in such suit, including a reasonable attorney's fee to be fixed by the Court. IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this ____ day of _____, 20__

Contractor*	Name, Title of Signer	SURETY*.....
	Contractor's Business Name	
	Mailing Street Address	
	City, State, Zip Code	
	Telephone #	

*Provide CONTRACTOR and SURETY name, address and telephone number and the name, title, address and telephone number for their respective authorized representatives. Power of Attorney must be attached.

Subscribed and sworn to this ____ day of _____, 20__

NOTARY PUBLIC..... (SEAL)

(EXECUTE IN DUPLICATE)

MAINTENANCE BOND
COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA

KNOW ALL PERSONS BY THESE PRESENTS THAT WHEREAS, the City of Los Alamitos, as AGENCY has awarded to Contractor's Business Name, as CONTRACTOR, a contract for the above-stated project.

AND WHEREAS, CONTRACTOR is required to furnish a bond in connection with the contract guaranteeing maintenance thereof;

NOW, THEREFORE, we, the undersigned CONTRACTOR and SURETY, are held firmly bound unto AGENCY in the sum of **DESCRIBE VERBALLY; 50% OF TOTAL CONTRACT AMOUNT—TO BE INSERTED BY CONTRACTOR**]Dollars (\$XXX,XXX.XX), which is fifty percent (50%) of the total contract amount for the above-stated project to be paid to AGENCY, its successors and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if CONTRACTOR shall remedy without cost to AGENCY any defects which may develop during a period of one (1) year from the date of recordation of the Notice of Completion of the work performed under the contract, provided such defects are caused by defective or inferior materials or work, then this obligation shall be void; otherwise, it shall be and remain in full force and effect. In case suit is brought upon this bond, SURETY will pay reasonable attorneys' fees to the AGENCY in an amount to be fixed by the court.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this____ day of _____, 20__.

Contractor*	Contractor's Signer's Name, Title
	Contractor's Business Name
	Mailing Street Address
	City, State, Zip Code
	Telephone #

SURETY*	_____

*Provide CONTRACTOR and SURETY name, address and telephone number and the name, title, address and telephone number for their respective authorized representatives. Powers of Attorney must be attached.

Subscribed and sworn to this day of....., 20__.

NOTARY PUBLIC..... (SEAL)

(EXECUTE IN DUPLICATE)

NON-COLLUSION AFFIDAVIT

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. 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. All statements contained in the bid are true. 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, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____[date], at _____[city], _____[state].

Signature of Declarant

Printed Name of Declarant

WORKERS' COMPENSATION INSURANCE CERTIFICATE

The Contractor shall execute the following form as required by the California Labor Code, Sections 1860 and 1861:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

DATE: _____ Contractor's Business Name .

(Contractor)

By:

(Signature)

(Title)

Attest:

By:

(Signature)

(Title)

Note: See Section 7 Responsibility of the Contractor, Paragraph 7-3 of the Standard Specifications for insurance carrier rating requirements.

ENDORSEMENTS TO INSURANCE POLICY

Name of Insurance Company:

Policy Number:

Effective Date:

The following endorsements are hereby incorporated by reference into the attached Certificate of Insurance as though fully set forth thereon:

1. The naming of an additional insured as herein provided shall not affect any recovery to which such additional insured would be entitled under this policy if not named as such additional insured, and
2. The additional insured named herein shall not be held liable for any premium or expense of any nature on this policy or any extensions thereof, and
3. The additional insured named herein shall not by reason of being so named be considered a member of any mutual insurance company for any purpose whatsoever, and
4. The provisions of the policy will not be changed, suspended, canceled or otherwise terminated as to the interest of the additional insured named herein without first giving such additional insured twenty (20) days' written notice.
5. Any other insurance held by the additional insured shall not be required to contribute anything toward any loss or expense covered by the insurance, which is referred to by this certificate.
6. **The company provided insurance for this certificate is a company licensed to do business in the State of California with a Best's rating of A+ VIII or greater.**

It is agreed that the City of Los Alamitos, its officers and employees, are included as Additional Insureds under the contracts of insurance for which the Certificate of Insurance is given.

Authorized Insurance Agent

Date: _____

STATEMENT REGARDING INSURANCE COVERAGE

**COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA**

The undersigned representative of Bidder hereby certifies that he/she has reviewed the insurance coverage requirements specified in **7-3 LIABILITY INSURANCE** of Section E, Standard Specifications. Should Bidder be awarded the contract for the work, the undersigned further certifies that Bidder can meet all of these specification requirements for insurance including insurance coverage of his/her subcontractors.

NAME OF BIDDER:

MAILING ADDRESS:

.....

.....

AUTHORIZED SIGNATURE:

TITLE:

DATE:

STATEMENT REGARDING CONTRACTOR'S LICENSING LAWS

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

[Business & Professions Code § 7028.15]

[Public Contract Code § 20103.5]

I, the undersigned, certify that I am aware of the following provisions of California law and that I, or the entity on whose behalf this certification is given, hold a currently valid California contractor's license as set forth below:

Business & Professions Code § 7028.15:

- a) **It is a misdemeanor for any person to submit a bid to a public agency to engage in the business or act in the capacity of a contractor within this state without having a license therefor,** except in any of the following cases:

(1)The person is particularly exempted from this chapter.

(2)The bid is submitted on a state project governed by Section 10164 of the Public Contract Code or on any local agency project governed by Section 20104 [now § 20103.5] of the Public Contract Code.

- b) If a person has been previously convicted of the offense described in this section, the court shall impose a fine of 20 percent of the price of the contract under which the unlicensed person performed contracting work, or four thousand five hundred dollars (\$4,500), whichever is greater, or imprisonment in the county jail for not less than 10 days nor more than six months, or both.

In the event the person performing the contracting work has agreed to furnish materials and labor on an hourly basis, "the price of the contract" for the purposes of this subdivision means the aggregate sum of the cost of materials and labor furnished and the cost of completing the work to be performed.

- c) This section shall not apply to a joint venture license, as required by Section 7029.1. However, at the time of making a bid as a joint venture, each person submitting the bid shall be subject to this section with respect to his/her individual licenser.
- d) This section shall not affect the right or ability of a licensed architect, land surveyor, or registered professional engineer to form joint ventures with licensed contractors to render services within the scope of their respective practices.
- e) Unless one of the foregoing exceptions applies, a bid submitted to a public agency by a contractor who is not licensed in accordance with this chapter shall be considered nonresponsive and shall be rejected by the public agency. Unless one of the foregoing exceptions applies, a local public agency shall, before awarding a contract or issuing a purchase order, verify that the contractor was properly licensed when the contractor submitted the bid. Notwithstanding any other provision of law, unless one of the foregoing exceptions applies, the registrar may issue a citation to any public officer or employee of a public entity who knowingly awards a contract or issues a purchase order to a contractor who is not licensed pursuant to this chapter. The amount of civil penalties, appeal, and finality of such citations shall be subject to Sections 7028.7 to 7028.13, inclusive. **Any contract awarded to, or any purchase order issued to, as contractor who is not licensed pursuant to this chapter is void.**

- f) Any compliance or noncompliance with subdivision (e) of this section, as added by Chapter 863 of the Statutes of 1989, shall not invalidate any contract or bid awarded by a public agency during which time that subdivision was in effect.
- g) A public employee or officer shall not be subject to a citation pursuant to this section if the public employee, officer, or employing agency made an inquiry to the board for the purposes of verifying the license status of any person or contractor and the board failed to respond to the inquiry within three business days. For purposes of this section, a telephone response by the board shall be deemed sufficient.

Public Contract Code § 20103.5:

In all contracts subject to this part where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with the laws of this state. However, at the time the contract is awarded, the contractor shall be properly licensed in accordance with the laws of this state. The first payment for work or material under any contract shall not be made unless and until the Registrar of Contractors verifies to the agency that the records of the Contractors' State License Board indicate that the contractor was properly licensed at the time the contract was awarded. Any bidder or contractor not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractors' State License Board. The agency shall include a statement to that effect in the standard form of pre-qualification questionnaire and financial statement. **Failure of the bidder to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the contract and shall result in the forfeiture of the security of the bidder.**

Contractors License Number: _____

License Expiration Date: _____

Authorized Signature: _____

Date: _____

SECTION E

COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

STANDARD SPECIFICATION

0-1 STANDARD SPECIFICATIONS

Except as hereinafter amended, the provisions of the 2018 Edition of the “Green Book,” Standard Specifications for Public Works Construction (“SSPWC”), with the latest Supplements, prepared and promulgated by the Southern California Chapters of the American Public Works Association and the Associated General Contractors of America, and these modifications thereto are adopted as the “Standard Specifications” for the Agency. These Standard Specifications will be numbered as Sections 0 through 600 per the SSPWC.

Architecture Standards shall conform to Construction Specifications Institute (“CSI”).

0-2 NUMBERING OF SECTIONS

The numbering of sections and subsections in these amendments and modifications are compatible with the numbering of sections in the SSPWC. The Special Provisions stated below will be numbered as Sections 700 through 799. Subsections of architectural work may be numbered according to the Construction Specifications Institute (“CSI”) format.

0-3 AMENDMENTS AND MODIFICATIONS

The following sections of the SSPWC are amended as provided herein. In the event of any inconsistencies between the amendments outlined herein and the SSPWC, these amendments shall control.

1-2 DEFINITIONS

Add the following:

Agent—Shall include persons and companies, other than the Contractor, retained by the City to perform design and construction services in relation to the Work.

Acceptance—The Agency’s formal written acceptance of a project that has been completed in all respects in accordance with the plans and specifications and any modifications thereof.

City—The City of Los Alamitos, California, as the Agency and Owner.

City Council—City Council of the City of Los Alamitos, California.

Construction Manager—Persons and/or company retained by the City to perform construction management services.

Design Engineer—Persons and/or company retained by the City to perform engineering design services.

Due Notice—A written notification, provided in due time, of a proposed action, where the contract requires such notification within a specified time (usually 48 hours or two working days) prior to the commencement of the contemplated action.

Engineer—The City Engineer of the City of Los Alamitos, or his/her authorized representative.

Geotechnical Engineer—Person licensed to practice Soils Engineering or Geotechnical Engineering pursuant to the laws of the State of California and retained by the Agency during construction.

Prompt—The briefest interval of time required for a considered reply, including time required for approval by a governing body.

Standard Plans—“Standard Plans for Public Works Construction” - Latest edition of the Southern California Chapter of the American Public Works Association.

State Standard Specifications (“SSS”)—Standard Specifications prepared by the State of California, Business and Transportation Agency, Department of Transportation.

State Standard Plans (“SSP”)—Standard Plans prepared by State of California, Business and Transportation Agency, Department of Transportation.

Working Days—Any days, except: (1) Saturdays, Sundays, legal holidays on which Los Alamitos City Hall is closed for business; (2) days when work is suspended by the Engineer for reasons unrelated to the performance of the contractor and provided in Subsections 6-3 and 6-3.1; and (3) days determined to be non-working in accordance with Section 6-7 “Time of Completion”.

1-3.3 INSTITUTIONS

Add the following:

ACI	American Concrete Institute
AGCA	Associated General Contractors of America
APWA	American Public Works Association
ASME	American Society of Mechanical Engineers
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
CBC	California Building Code
IEEE	Institute of Electric and Electronic Engineers
NFPA	National Fire Protection Association
SSS	State of California Standard Specifications, latest edition, Department of Transportation
SSP	State of California Standard Plans, latest edition, Department of Transportation.
SSPWC	Standard Specifications for Public Works Construction, as specified in Subsection 0-1
NEMA	National Electrical Manufacturers Association

1-6 BIDDING AND SUBMISSION OF THE BID

1-6.2 GENERAL

Delete the third paragraph and replace with the following:

Subcontracting of more than one-half of one percent of the work for which no Subcontractor was designated in the original Bid will be allowed only in cases of public emergency or necessity and only after the Engineer makes a written finding of circumstances constituting public emergency or necessity.

Delete the fourth paragraph and replace with the following:

The Contractor must obtain written consent of the City Council to substitute a Subcontractor designated in the original Bid, to permit any subcontract to be assigned or transferred, or to otherwise allow a subcontract to be performed by anyone other than the originally designated Subcontractor.

Delete the fifth paragraph and replace with the following:

A violation of any of the above provisions will be considered a violation of the Contract, and the City may cancel the Contract and collect appropriate damages or assess the Contractor a penalty of not more than ten (10) percent of the subcontract involved.

Add the following:

If subcontracted work is not being performed in a satisfactory manner, the City will notify the Contractor of the need to take corrective action and the Engineer may report the facts to the City Council. Upon order by City Council and the Contractor's receipt of written instructions from the Engineer, the Subcontractor shall immediately be removed from the Work and may not again be employed on the Work.

1-7 AWARD AND EXECUTION OF THE CONTRACT

1-7.1 GENERAL

Add the following:

The City reserves the right to reject any or all proposals.

The Contract will be awarded, if at all, to the lowest responsible and responsive Bidder determined as provided on the Proposal Form, whose proposal complies with all the requirements prescribed. Such award, if made, will be made within the number of days stated in the proposal form. Refusal or failure to deliver the executed contract, bonds, or insurance in the form provided in the Contract and approved by the Agency's attorney within the time provided herein shall be cause, at the Agency's option, for the annulment of the award and forfeiture of the bid security. In such event, the Agency may successively award the Contract to the next lowest responsible and responsive Bidder until a properly executed Contract, bonds, and insurance is obtained, or it may at any time reject all remaining bids and proceed as provided by law. The refusal or failure of a successive lowest responsible and responsive Bidder to execute the Contract may, at the Agency's option, result in an annulment of the award to that Bidder and the forfeiture of that Bidder's bid security. The periods of time specified above within which the award of the Contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the Agency and the concerned Bidder.

The Agency reserves the right to waive any irregularities.

Within ten (10) calendar days after the date of the Notice of Award, the Contractor shall execute and return the following contract documents to the Agency:

- Contract Agreement (in duplicate)
- Faithful Performance Bond (in duplicate)
- Maintenance Bond (in duplicate)
- Payment Bond (in duplicate)
- Public Liability and Property Damage Insurance Certificate (two original)
- Additionally Insured Endorsement
- Workers' Compensation Insurance Certificate (two original)

A corporation to which an award is made may be required, before the Contract agreement is executed by the Agency, to furnish evidence of its corporate existence, of its right to enter into contracts in the State of California, and that the officers signing the contract and bonds for the corporation have the authority to do so.

1-7.2 CONTRACT BONDS

Add the following:

The PAYMENT BOND shall remain in force until thirty-five (35) days after the date of recordation of the Notice of Completion. The FAITHFUL PERFORMANCE BOND shall remain in force until the date of recordation of the Notice of Completion. The MAINTENANCE BOND shall remain in force until one (1) year after the date of recordation of the Notice of Completion.

All bonds must be accompanied by a Power of Attorney

SECTION 2 – SCOPE OF THE WORK

2-1 WORK TO BE DONE

Add the following paragraphs and subsections to Section 2-1:

Any plan or method of work suggested by the Agency or the Engineer to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Agency and the Engineer shall assume no responsibility therefore and in no way be held liable for any defects in the work which may result from or be caused by use of such plan or method of work.

The work includes, but is not necessarily limited to, the following items as shown on the plans and specified in these Special Provisions:

2-1.1 COMMUNITY CENTER ROOF REPAIR

Furnish all labor, materials, tools, and equipment for the repair of sloped roofs and flat roof. The work includes removing, salvaging, and re-installing existing roof tiles, installing new roof tiles, installing plywood, repairing fascia board, repairing wood decks, painting surfaces, incidentals, and all other work as specified in the specifications and details to for the repair of roofs complete in place.

2-1.2 COMMUNITY CENTER HALLS INTERIOR PAINTING

Furnish all labor, materials, tools, and equipment for painting the interior of the community center event halls. The work includes surface preparation, applying paint per manufacturers specifications and all other work as specified in the specifications and details to for interior painting.

2-1.3 LIGHTING COMMUNITY CENTER HALLS INTERIOR PAINTING

Furnish all labor, materials, tools, and equipment for replacing light fixtures of the community center event halls. The work includes removal of existing fixtures and installing a new LED light fixtures per manufacturer specifications and applicable local codes.

2-2 PERMITS

Delete the first paragraph and replace with the following:

Prior to the start of any work, the Contractor shall apply for and receive any applicable City, County, State, and Federal permits.

2-3 RIGHT-OF-WAY

Add the following:

When the Contractor arranges for additional work areas and facilities temporarily required by him/her, he/she shall provide the Agency with proof that the additional work areas and/or facilities have been left in a condition satisfactory to the owner(s) of said work areas and/or facilities prior to acceptance of the work.

2-4 COOPERATION AND COLLATERAL WORK

Add the following:

Contractor shall coordinate his/her work so as to minimize disruption to ongoing or scheduled private development projects in the project area.

2-7 CHANGES INITIATED BY THE AGENCY

2-7.1 GENERAL

Add the following:

All final locations determined in the field, and any deviations from the Plans and Specification, shall be marked in red on the documents to show the as-built conditions. Contractor shall maintain a complete and accurate record of all changes of construction from that shown in these plans and specifications for the purpose of providing a basis for construction record drawings. No changes shall be made without prior written approval of the Engineer. Upon completion of the Project, Contractor shall deliver this record of all construction changes to the Engineer along with a letter which declares that other than these noted changes "the Project was constructed in conformance with the Contract Documents". Final payment will not be made until this requirement is met.

As the figured dimensions shown on the drawings and in the specifications of the Contract may not in every case agree with scaled dimensions, the figured dimensions shall be followed in preference to the scaled dimensions, and drawings to a large scale shall be followed in preference to the drawings to a small scale. Should it appear that the work to be performed, or any related matter, are not sufficiently detailed or explained in the Contract documents, the Contractor shall apply to the Engineer for such further

explanations as necessary and shall conform to such further explanations provided by the Engineer as part of the Contract to the extent that it is consistent with the terms of the Contract.

Caution: The engineer preparing these plans will not be responsible or liable for unauthorized changes to or uses of these plans. All changes to the plans must be approved in writing by the Engineer.

SECTION 3 – CONTROL OF THE WORK

3-3 SUBCONTRACTORS

Delete the first paragraph and replace with the following:

All persons engaged in the Work, including Subcontractors and their employees, will be considered employees of the Contractor. The Contractor will be held responsible for their work. The Agency will deal directly and solely with the Contractor and make all payments to the Contractor.

3-5 INSPECTION

Add the following:

The Agency shall inspect for compliance with requirements for 8-hour days and 40-hour weeks on normal working days. The Contractor shall reimburse the Agency, at rates established by the Agency, for any additional inspection, including inspection on legal holidays.

3-12 WORK SITE MAINTENANCE

3-12.2 AIR POLLUTION CONTROL

Add the following Subsection:

3-12.2.1 WORK AREA APPEARANCE

The Contractor shall maintain a neat appearance to the Work.

All unsuitable construction materials and rubbish and debris shall be regularly removed from the job site, be transported to a suitable location, and be disposed of in a proper and legal manner.

In any area visible to the public, the following shall apply:

1. Broken concrete and debris developed during clearing and grubbing shall be disposed of weekly.
2. The Contractor shall furnish trash bins for all debris from structure construction. All debris shall be placed in trash bins daily.

3-12.3 NOISE CONTROL

Add the following:

A noise level limit of 85 dba at a distance of fifty (50) feet shall apply to all construction equipment on or related to the job, whether owned by the Contractor or not. The use of excessively loud warning signals shall be avoided except in those cases where required for the protection of personnel.

The Contractor shall arrange and maintain a secure storage site for all equipment and materials. All equipment and unused materials shall be returned to this site at the end of each workday.

3-13 COMPLETION AND ACCEPTANCE

3-13.3 WARRANTY

Add the following:

The Contractor shall warrant and guarantee the entire Work and all parts thereof, including that performed and constructed by subcontractors, and others employed directly or indirectly on the Work, against faulty or defective materials, equipment or workmanship for the maximum period provided by law. In addition thereto, for a period of one (1) year commencing on the date of acceptance of the Work, the Contractor shall, upon the receipt of notice in writing from the Agency, promptly make all repairs arising out of defective materials, workmanship or equipment and bear the cost thereof. The Agency is hereby authorized to make such repairs and the Contractor and Surety shall bear the cost thereof if, ten (10) days after the giving of such notice to the Contractor, the Contractor has failed to make or undertake with due diligence the repairs; provided, however, that, in the case of an emergency where, in the opinion of the Agency, delay could cause serious loss or damage, repairs may be made without notice being sent to the Contractor or Surety, and all expense in connection therewith shall be charged to the Contractor and Surety.

For the purpose of this article "Acceptance of the Work" shall mean the acceptance of the Work by the Agency in accordance with Subsection 3-13.2 but not for the purpose of extinguishing any covenant or agreement or agreement on the part of the Contractor to be performed or fulfilled under this Contract, which has not in fact been performed or fulfilled at the time of such acceptance all of such covenants and agreements, shall continue to be binding on the Contractor until they have been fulfilled.

The effective date of Acceptance of the Work and commencement of the Guarantee shall be the date of acceptance of the Notice of Completion by the City Council.

The following subsection is added to Subsection 3-13 of the SSPWC.

3-13.4 General Guaranty

The Contractor shall remedy any defects in the Work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the Work unless a longer period is specified. The Agency will give notice of observed defects with reasonable promptness.

SECTION 4 – CONTROL OF MATERIAL

4-1 GENERAL

Add the following:

The Contractor and all subcontractors, suppliers, and vendors shall guarantee that the entire Work will meet all requirements of this Contract as to the quality of materials, equipment, and workmanship. The Contractor, at no cost to the Agency, shall make any repairs or replacements made necessary by defects in materials, equipment, or workmanship that become evident within twenty years after the date of recordation of the Notice of Completion. Within this twenty-year period, the Contractor shall also restore to full compliance with the requirements of this Contract any portion of the Work which is found not to meet those requirements. The Contractor shall defend, indemnify, and hold the Agency, its officers, agents, and employees harmless from claims of any kind due to injuries or damages arising, directly or indirectly, from said defects or noncompliance.

The Contractor shall make all repairs, replacements, and restorations within thirty-five (35) days after the date of the Engineers' written notice.

If, in the opinion of the Engineer, the defective work is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if, in the opinion of the Engineer, the removal of such work is impractical or will create conditions which are dangerous or undesirable, the Agency shall have the right and authority to retain such work instead of requiring it to be removed and reconstructed, but will make such deductions thereof in the payments due or to become due to the Contractor as the Agency may deem just and reasonable.

4-6 TRADE NAMES

Delete the third sentence of the second paragraph and replace with the following:

Approval of equipment and materials offered as equivalents to those specified must be obtained prior to the opening of bids as set forth in the Instructions to Bidders.

Add the following:

Along with information supplied by the Contractor regarding equivalency of the proposed item, the Contractor shall clearly identify all deviations from the specified item. Deviations discovered by the Engineer after acceptance of an "or equal" item which were not identified by the Contractor with his/her submittal shall be cause for rejection of the "or equal" item. Contractor shall be due no additional compensation in time or money for acceptance or rejection of a proposed "or equal" item and subsequent replacement with the item specified. Contractor shall pay cost to Agency for items requiring more than two submittals and analysis of any shop drawing which requires more than a general review of an "or equal" item.

SECTION 4 – LEGAL RELATIONS AND RESPONSIBILITIES

5-3 LABOR

5-3.1 General

Add the following:

The Contractor shall ensure unlimited access to the job site for all Equal Opportunity Compliance officers.

Every Contractor and Subcontractor shall keep an accurate record showing the name, occupation, and the actual per diem wages paid to each worker employed by him/her in connection with the public work. The record shall be kept open at all reasonable hours to the inspection of the body awarding the Contract and to the Division of Labor Law Enforcement.

Add the following Subsection:

5-3.4.1 OVERTIME AND SHIFT WORK

The Contractor may establish overtime and shift work as a regular procedure only with the written permission of the Engineer. Such permission may be revoked at any time. No work other than overtime and shift work established as a regular procedure shall be done between the hours of 4:00 p.m. and 7:30 a.m., nor on Saturdays, Sundays or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or except in case of an emergency.

All costs for overtime inspection, except those occurring as a result of overtime and shift work established as a regular procedure, shall be paid by the Contractor. Overtime inspection shall include inspection required during holidays observed by the AGC and Trade Unions, Saturdays, Sundays, and any weekday between the hours of 4:00 p.m. and 7:30 a.m.. Such costs will include but will not necessarily be limited to engineering, inspection, general supervision and other overhead expenses that are directly chargeable to the overtime work. The Agency shall deduct all such charges from payments due the Contractor.

5-4.2 GENERAL LIABILITY INSURANCE

Section 5-4.2 is replaced in its entirety as follows:

5-4.2.1 GENERAL. CONTRACTOR and AGENCY agree that Agency, its employees, agents and officials should, to the extent permitted by law, be fully protected from any loss, injury, damage, claim, lawsuit, cost, expense, attorneys' fees, litigation costs, defense costs, court costs or any other cost arising out of or in any way related to the performance of this Agreement. Accordingly, the provisions of this indemnity provision are intended by the parties to be interpreted and construed to provide the fullest protection possible under the law to the Agency. CONTRACTOR acknowledges that AGENCY would not have entered into this Agreement in the absence of the commitment of CONTRACTOR to indemnify and protect AGENCY as set forth here.

5-4.2.2 To the full extent permitted by law, CONTRACTOR shall defend, indemnify and hold harmless AGENCY, its employees, agents and officials, from any liability, claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged, or threatened, actual attorney's fees incurred by AGENCY, court costs, interest, defense costs including expert witness fees and any other costs or expenses of any kind whatsoever without restriction or limitation incurred in relation to, as a consequence of, arising out of or in any way attributable actually, allegedly or impliedly, in whole or in part to the performance of this Agreement. All obligations under this provision are to be paid by CONTRACTOR as they are incurred by the AGENCY.

5-4.2.3 Without affecting the rights of AGENCY under any provision of this agreement or this section, CONTRACTOR shall not be required to indemnify and hold harmless AGENCY as set forth above for liability attributable to the sole fault of AGENCY, provided such sole fault is determined by agreement between the parties or the findings of a court of competent jurisdiction.

This exception will apply only in instances where the AGENCY is shown to have been solely at fault and not in instances where CONTRACTOR is solely or partially at fault or in instances where AGENCY's fault accounts for only a percentage of the liability involved. In those instances, the obligation of CONTRACTOR will be all-inclusive and AGENCY will be indemnified for all liability incurred, even though a percentage of the liability is attributable to the conduct of the AGENCY.

5-4.2.4 CONTRACTOR acknowledges that its obligation pursuant to this section extends to liability attributable to AGENCY, if that liability is less than the sole fault of AGENCY. CONTRACTOR has no obligation under this Agreement for liability proven in a court of competent jurisdiction or by written agreement between the parties to be the sole fault of AGENCY.

5-4.2.5 The obligations of CONTRACTOR under this or any other provision of this Agreement will not be limited by the provisions of any workers compensation act or similar act. CONTRACTOR expressly waives its statutory immunity under such statutes or laws as to AGENCY, its employees, agents and officials.

5-4.2.6 CONTRACTOR agrees to obtain executed indemnity agreements with provisions identical to those as set forth here in this section from each and every subcontractor, sub-tier contractor or any other person or entity involved by, for, with or on behalf of CONTRACTOR in the performance or subject matter of this

Agreement. In the event CONTRACTOR fails to obtain such indemnity obligations from others as required here, CONTRACTOR agrees to be fully responsible according to the terms of this section.

5-4.2.7 Failure of AGENCY to monitor compliance with these requirements imposes no additional obligations on AGENCY and will in no way act as a waiver of any rights hereunder. This obligation to indemnify and defend AGENCY as set forth herein is binding on the successors, assigns or heirs of CONTRACTOR and shall survive the termination of this Agreement or this section.

5-4.2.8 CONTRACTOR agrees to provide insurance in accordance with the requirements as set forth here. If CONTRACTOR uses existing coverage to comply with these requirements and that coverage does not meet the requirements set forth herein, CONTRACTOR agrees to amend, supplement or endorse the existing coverage to do so. The following coverages will be provided by CONTRACTOR and maintained on behalf of AGENCY and in accordance with the requirements set forth herein.

5-4.2.9 Commercial General Liability/Umbrella Insurance. Primary insurance shall be provided on ISO-CGL form No. CG 00 01 11 85 or 88. Total limits shall be not less than two million dollars (\$2,000,000.00) per occurrence for all coverages and two million dollars (\$2,000,000.00) general aggregate. AGENCY and its officers, agents and employees shall be named as additional insureds using ISO additional insureds endorsement form CG 20 10 11 85 (in no event will AGENCY accept an endorsement form with an edition date later than 1990). Coverage shall apply on a primary non-contributing basis in relation to any other insurance or self-insurance, primary or excess, available to AGENCY or any employee or agent of AGENCY. Coverage shall not be limited to the vicarious liability or supervisory role of any additional insured. Umbrella Liability Insurance (over primary) shall apply to bodily injury/property damage, personal injury/advertising injury, at a minimum, and shall include a "drop down" provision providing primary coverage above a maximum of \$25,000.00 self-insured retention for liability not covered by primary policies but covered by the umbrella policy. Coverage shall be following form to any underlying coverage. Coverage shall be provided on a "pay on behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross-liability exclusion. Policies shall have concurrent starting and ending dates.

Each policy of insurance shall contain a clause prohibiting cancellation, modification or lapse without thirty (30) days prior written notice having been given to the City. All insurance policies shall be subject to approval by the City Attorney and certificates evidencing such policies shall be provided to the City concurrently with the filing of all required bonds.

5.4.2.10 Business Auto/Umbrella Liability Insurance. Primary coverage shall be written on ISO Business Auto Coverage form CA 00 01 06 92 including symbol 1 (Any Auto). Limits shall be no less than two million dollars (\$2,000,000.00) per accident. Starting and ending dates shall be concurrent. If CONTRACTOR owns no autos, a non-owned auto endorsement to the General Liability policy drafted above is acceptable.

5-4.3 WORKERS' COMPENSATION INSURANCE

Section 5-4.3 shall be replaced in its entirety as follows:

5-4.3.1 Workers' Compensation/Employers' Liability shall be written on a policy form providing workers' compensation statutory benefits as required by law. Employers' liability limits shall be no less than one million dollars per accident or disease. Employers' liability coverage shall be scheduled under any umbrella policy described above. Unless otherwise agreed, this policy shall be endorsed to waive any right of subrogation as respects the AGENCY, its officers, agents or employees.

5-4.3.2 CONTRACTOR and AGENCY further agree as follows:

5-4.3.2.1 This Section supersedes all other sections and provisions of this Agreement to the extent that any other section or provision conflicts with or impairs the provisions of this Section.

5-4.3.2.2 Nothing contained in this Section is to be construed as affecting or altering the legal status of the parties to this Agreement. The insurance requirements set forth in this Section are intended to be separate and distinct from any other provision in this Agreement and shall be interpreted as such.

5-4.3.2.3 All insurance coverage and limits provided pursuant to this Agreement shall apply to the full extent of the policies involved, available, or applicable. Nothing contained in this Agreement or any other agreement relating to the AGENCY or its operations limits the application of each insurance coverage.

5-4.3.2.4 Requirements of specific coverage features, or limits contained in this Section are not intended as a limitation on coverage, limits or other requirements, or a waiver of any coverage normally provided by any insurance. Specific reference to a given coverage feature is for purposes of clarification only and is not intended by any party to be all-inclusive, or to the exclusion of other coverage, or a waiver of any type.

5-4.3.2.5 For purposes of insurance coverage only, this Agreement shall be deemed to have been executed immediately upon any party hereto taking any steps that can be deemed to be in furtherance of or towards performance of this Agreement.

5-4.3.2.6 All general or auto liability insurance coverage provided pursuant to this Agreement, or any other agreements pertaining to the performance of this Agreement, shall not prohibit CONTRACTOR, and CONTRACTOR's agents, officers, or employees from waiving the right of subrogation prior to a loss. Contractor hereby waives all rights of subrogation against AGENCY.

5-4.3.2.7 Unless otherwise approved by AGENCY, CONTRACTOR's insurance shall be written by insurers authorized to do business in the State of California and with a minimum "Best's" Insurance Guide rating of "A:VII." Self-insurance will not be considered to comply with these insurance specifications.

5-4.3.2.8 In the event any policy of insurance required by this Agreement does not comply with these requirements or is canceled and not replaced, AGENCY has the right but not the duty to obtain the insurance it deems necessary, and any premium paid by AGENCY will be promptly reimbursed by CONTRACTOR. Upon CONTRACTOR's failure to make such reimbursement within 30 days of written demand, AGENCY may deduct that sum from any monies due CONTRACTOR hereunder or otherwise.

5-4.3.2.9 CONTRACTOR agrees to provide evidence of the insurance required herein, satisfactory to AGENCY, consisting of certificate(s) of insurance evidencing all of the coverages required and an additional insured endorsement to CONTRACTOR's general liability and umbrella liability policy (if any) using ISO form CG 20 10 11 85. Certificate(s) are to reflect that the insurer will provide 30 days' notice of any cancellation of coverage. CONTRACTOR agrees to require its insurer to modify such certificates to delete any exculpatory wording stating that failure of insurer to mail written notice of cancellation imposes no obligation, and to delete the word "endeavor" with regard to any notice provisions. CONTRACTOR agrees to provide complete copies of policies to AGENCY upon request.

5-4.3.2.10 CONTRACTOR shall provide proof that policies of insurance required herein expiring during the term of this Agreement have been renewed or replaced with other policies providing at least the same coverage. Such proof shall be furnished within 72 hours of the expiration of the coverages.

5-4.3.2.11 Any actual or alleged failure on the part of AGENCY or any other additional insured under these requirements to obtain proof of insurance required under this Agreement in no way waives any right or remedy of AGENCY or any additional insured, in this or any other regard.

5-4.3.2.12 CONTRACTOR agrees to require all subcontractors or other parties hired for this project to provide general liability insurance naming as additional insureds all parties to this Agreement.

CONTRACTOR agrees to obtain certificates evidencing such coverage and make reasonable efforts to ensure that such coverage is provided as required here. CONTRACTOR agrees to require that no contract used by any subcontractor, or contracts CONTRACTOR enters into on behalf of AGENCY, will reserve the right to charge back to AGENCY the cost of insurance required by this Agreement. CONTRACTOR agrees that upon request, all agreements with subcontractors or others with whom CONTRACTOR contracts on behalf of AGENCY will be submitted to AGENCY for review. Failure of AGENCY to request copies of such agreement will not impose any liability on AGENCY, its officers, agents, or employees.

5-4.3.2.13 If CONTRACTOR is a Limited Liability Company, general liability coverage must be amended so that the Limited Liability Company and its Managers, Affiliates, employees, agents and other persons necessary or incidental to its operations are insureds.

5-4.3.2.14 CONTRACTOR agrees to provide immediate notice to AGENCY of any claim or loss against CONTRACTOR that includes AGENCY as a defendant. AGENCY assumes no obligation or liability by such notice but has the right (but not the duty) to monitor the handling of any such claim or claims.

5-7 SAFETY

Add the following:

At the pre-construction meeting, the Contractor shall submit his/her complete construction schedule to the Engineer for approval. The Contractor shall submit requests for changes in the schedule to the Engineer for approval at least forty-eight (48) hours prior to the scheduled Work.

SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

6-1 CONSTRUCTION, SCHEDULE, AND COMMENCEMENT OF WORK

Add the following:

Prior to issuing the Notice to Proceed, the Engineer will schedule and conduct a pre-construction meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination, discuss construction methods, and clarify inspection procedures.

6-2 PROSECUTION OF WORK

Delete the last sentence of first paragraph and replace it with the following:

Should the Contractor fail to take the necessary steps to fully accomplish said purposes, after orders of the Engineer to do so, the Agency may suspend the work in whole or in part, until the Contractor takes said steps at no cost to the Agency.

Add the following:

The Contractor shall submit monthly progress reports to the Engineer by the tenth day of each month. The report shall include an updated construction schedule. Any deviations from the original schedule shall be explained. Progress payments will be withheld pending receipt of any outstanding reports.

6-3 TIME OF COMPLETION

Add the following subsections:

6-3.3 WORKING DAY

Add the following:

The Contractor's activities shall be confined to the hours between 7:30 a.m. and 4:00 p.m. Monday through Friday. In addition, the Contractor shall not perform any Work on Saturday, Sunday, or on Agency-designated holidays. Agency-designated holidays are listed in **TABLE 1 – AGENCY-DESIGNATED HOLIDAYS** below. Deviation from these hours will be permitted upon approval of the Engineer, except in emergencies involving immediate hazard to persons or property.

Deviations from these hours will not be permitted without the prior consent of the Engineer, except in emergencies involving immediate hazard to persons or property. In the event of either a requested or emergency deviation, inspection service fees will be charged against the Contractor. Service fees will be calculated at overtime rates including benefits, overhead, and travel time; and will be deducted from the amounts due the Contractor.

Failure of the Contractor to adhere to working day requirements will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For each OCCURRENCE of a working day or hours violation, as provided herein, the Contractor shall pay to the Agency, or have withheld from monies due to it, the sum of \$1,000.00.

TABLE 1 – AGENCY-DESIGNATED HOLIDAYS

New Year's Day
Martin Luther King, Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Eve
Christmas Day

EXECUTION OF THE CONTRACT SHALL CONSTITUTE AGREEMENT BY THE AGENCY AND CONTRACTOR THAT \$1,000 PER VIOLATION IS THE MINIMUM VALUE OF THE COST AND ACTUAL DAMAGED CAUSED BY FAILURE OF THE CONTRACTOR TO LIMIT PERFORMANCE OF THE WORK BETWEEN THE ALLOTTED TIMES, THAT SUCH SUM SHALL NOT BE CONSTRUED AS A PENALTY, AND THAT SUCH SUM MAY BE DEDUCTED FROM PAYMENTS DUE THE CONTRACTOR IF SUCH DELAY OCCURS.

6-4 DELAYS AND EXTENSION OF TIME

6-4.1 GENERAL

Add the following Subsections:

6-4.1.1 Notice of Delays

Whenever the Contractor foresees any delay in the prosecution of the work, and in any event immediately upon the occurrence of any delay which the Contractor regards as unavoidable, he/she shall notify the Engineer in writing of the probability of the occurrence of such delay and its cause so that the Engineer may take immediate steps to prevent, if possible, the occurrence or continuance of the delay, or, if prevention is not possible, may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent it will delay the prosecution and completion of the work. It will be concluded that any and all delays which have occurred in the prosecution and completion of the work have been avoidable delays, except such delays as shall have been called to the attention of the Engineer at

the time of their occurrence and found by him/her to have been unavoidable. The Contractor shall make no claims for any delay not called to the attention of the Engineer at the time of its occurrence as an unavoidable delay.

6-4.1.2 Avoidable Delays

Avoidable delays in the prosecution or completion of the work shall include all delays which in the opinion of the Engineer would have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor of his/her subcontractors. The following shall be considered avoidable delays within the meaning of the contract: 1) Delays in the prosecution of parts of the work which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work or the completion of the whole work within the time herein specified; 2) Reasonable loss of time resulting from the necessity of submitting samples of materials and drawings to the Engineer for approval and from performing tests of materials, measurements, and inspections; 3) Reasonable interference of other contractors employed by the Agency and/or other contractors working in the area which do not necessarily prevent the completion of the whole work within the time agreed upon; 4) Delays resulting from inaccurate or incomplete shop drawing submittals; and 5) Interference of other contractors performing concurrent work.

6-4.1.3 Extension of Time

In case the work is not completed in the time specified, including such extensions of time as may have been granted for unavoidable delays, the Contractor will be assessed damages for delay in accordance with Paragraph 6-9.1. The Agency, however, shall have the right to grant an extension of time for avoidable delay if it is deemed in his/her best interest to do so. During such extension of time, the Contractor will be charged for engineering and inspection services and other costs as provided in Paragraph 6-6.2.1 but will not be assessed damages pursuant to Paragraph 6-9.

6-4.2 EXTENSIONS OF TIME

Add the following Subsection:

6-4.2.1 Compensation to Agency for Extension of Time

Compensation for extension of time for avoidable delay granted pursuant to Paragraph 6-6.1.3 shall be the actual cost to the Agency for engineering, inspection, general supervision, and overhead expenses which are directly chargeable to the work, and which accrue during the period of such extension, except that the cost of final inspection and preparation of the final estimate shall not be included.

6-4.4 WRITTEN NOTICE AND REPORT

Delete the title and text of Section 6-4.4 and replace it with the following:

Requests for an extension of time must be delivered to the Agency within ten (10) consecutive calendar days following the date of the occurrence that caused the delay. The request must be submitted in writing and must state the cause of the delay, the date of the occurrence causing the delay, and the amount of additional time requested. This shall be included as part of a revised construction schedule required in Section 6-1. Requests for extensions of time shall be supported by all evidence reasonably available or known to the Contractor, which would support the extension of time requested. Requests for extensions of time, which are not received within the time specified above, shall result in the forfeiture of the Contractor's right to receive any extension of time requested.

If the Contractor is requesting an extension of time because of weather, he/she shall supply daily written reports to the Agency's representative describing such weather, and the work that could not be performed

that day because of such weather or conditions resulting therefrom and that he/she otherwise would have performed.

6-9 LIQUIDATED DAMAGES

Delete the title and text of Section 6-9 and replace with the following:

6-9 FORFEITURE DUE TO DELAY

The Contractor shall complete all or any designated portion of the Work called for under the Contract within the time set forth in Part C (Proposal) of these Specifications.

In accordance with Government Code 53069.85, and all other applicable law, the Contractor agrees to forfeit and pay the Agency the amount of Five Hundred Dollars (\$500.00) per day for each and every day of unauthorized delay beyond the completion date, which shall be deducted from any monies due the Contractor. This payment shall be considered liquidated damages. Contractor agrees that such liquidated damages are reasonable under the circumstances existing at the time of execution of the contract, that such liquidated damages are to compensate Agency for losses that are difficult to measure and that such damages are not a penalty.

Failure of the Contractor to perform any covenant or condition contained in the Contract Documents within the time period specified shall constitute a material breach of this Contract entitling the Agency to terminate the Contract unless the Contractor applies for, and receives, an extension of time in accordance with the procedures set forth in Section 5-5.

Failure of the Agency to insist upon the performance of any covenant or conditions within the time period specified in the Contract Documents shall not constitute a waiver of the Contractor's duty to complete performance within the designated periods unless the Agency has executed a waiver in writing.

The Agency's agreement to waive a specific time provision or to extend the time for performance shall not constitute a waiver of any other time provision contained in the Contract Documents.

Failure of the Contractor to complete performance promptly within the additional time authorized in a waiver or extension of time agreement shall constitute a material breach of this Contract entitling the Agency to terminate this agreement.

The Contractor shall not be deemed in breach of this Contract and no forfeiture due to delay shall be made because of any delays in the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor provided the Contractor requests an extension of time in accordance with the procedures set forth in Section 5-5. Unforeseeable causes of delay beyond the control of the Contractor shall include acts of God, acts of a public enemy, acts of the government, acts of the Agency, or acts of another contractor in the performance of a contract with the Agency, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and weather, or delays of subcontractors due to such causes, or delays caused by failure of the owner of a utility to provide for removal or relocation of existing utility facilities. Delays caused by actions or neglect of Contractor or his/her agents, servants, employees, officers, subcontractors, directors, or of any party contracting to perform part of all of the Work or to supply any equipment or materials shall not be excusable delays. Excusable delays (those beyond the Contractor's control) shall not entitle the Contractor to any additional compensation. The sole recourse of the Contractor shall be to seek an extension of time.

6-12 DISPUTES AND CLAIMS

6-12.1 GENERAL

Any and all decisions made on appeal pursuant to this Subsection 6-12 shall be in writing. Any “decision” purportedly made pursuant to this Subsection 6-12 that is not in writing shall not be binding upon the Agency and should not be relied upon by the Contractor.

Nothing in this subsection shall be considered as relieving the Contractor from his/her duty to file the notice required under Subsection 6-13 or other duties required by the Contract Documents.

6-12.2 ADMINISTRATIVE REVIEW

Request for review made to the Construction Inspector or Project Engineer may be either oral or written. Request for review made to the City Engineer shall be made in writing with supporting evidence attached.

The Contractor shall submit each request for review within twenty-one (21) calendar days of receipt of the decision that he/she is requesting.

Prior to demand for arbitration, the Contractor shall exhaust his/her administrative remedies by attempting to resolve his/her dispute or claim with Agency’s staff in the following sequence:

1. Project Engineer
2. City Engineer

Should the Project Engineer fail to address the Contractor’s request for review of a disputed decision within fourteen (14) calendar days after receiving such request, the Contractor may proceed directly to the City Engineer. At the option of the Agency, the person to whom the request for review is directed may elect to take such request to a higher level and the Contractor’s request shall be deemed to be properly submitted to such higher level.

The City Engineer shall address disputes or claims within twenty-eight (28) calendar days after receiving such request and all necessary supporting data. The City Engineer’s decision on the dispute or claim shall be the Agency’s final decision.

6-12.3 ARBITRATION

Claims and disputes arising under or related to the performance of the contract, except for claims that have been released by execution of the “Release on Contract” as provided in Subsection 9-4, shall be resolved in arbitration unless the Agency and the Contractor agree in writing, after the claim or dispute has arisen, to waive arbitration and to have the claim or dispute litigated in court of competent jurisdiction. Arbitration shall be conducted, to the extent feasible, pursuant to Chapter 3 (Sections 301-393, inclusive) of Division 2 of Title 1 of the California Code of Regulations except that references therein to the “State Contract Act” shall be construed to mean “applicable law” and “Public Agency”, or “Department” shall be construed to mean “Agency” as defined in Subsection 1.2. The arbitration decision shall be decided under and in accordance with California law, supported by substantial evidence, and in writing, contain the basis for the decision, findings of fact, and conclusions of law.

Arbitration shall be initiated by a Demand for Arbitration. The Contractor shall request a Demand for Arbitration not later than one hundred eighty (180) calendar days after the date of the final written decision of the Agency on the claim or dispute.

All contracts valued at more than \$15,000 between the Contractor and his/her Subcontractors and Suppliers shall include a provision that the Subcontractors and Suppliers shall be bound to the Contractor to the same extent that the Contractor is bound to the Agency by all terms and provisions of the Contract, including these arbitration provisions.

6-13 NOTICE OF POTENTIAL CLAIM

The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the Engineer, or the happening of any event, thing or occurrence, unless the Contractor shall have given the Engineer due notice in writing, of the potential claim as hereinafter specified, provided, however, that compliance with this Subsection 6-12 shall not be a prerequisite as to any claim that is based on differences in measurements or errors of computation as to the Contract quantities.

Additionally, this Subsection 6-13 shall not supersede the specific notice and protest requirements of Subsection 2-9 "Changed Conditions" and Subsection 6-3.2 "Contract Time Accounting" respectively.

A written notice of potential claim shall set forth the reasons the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. A notice as above required must have been given to the Engineer prior to the time that the Contractor shall have performed the Work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Engineer, or in all other cases within fifteen (15) days after the happening of the event, thing or occurrence giving rise to the potential claim.

It is the intention of this Subsection 6-13 that differences between the parties arising under and by the virtue of the Contract be brought to the attention of the Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he/she shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was filed.

7-3 PAYMENT

7-3.2 PARTIAL AND FINAL PAYMENT

Delete the last paragraph of this subsection and replace with the following:

The closure date for period progress payments will be the twenty-fifth day of each month. Authorization to pay is commonly received on the second Wednesday of the following month. The Agency requires four to six weeks to review all progress payments, issue payment checks, present progress payment to Council for approval, and release payment to contractor. However, payments will be withheld pending receipt of any outstanding reports required by the Contract Documents. In addition, the final progress payment will not be released until the Contractor returns the control set of plans and specifications showing the as-built conditions.

The full five (5) percent retention will be deducted from all payments. The final retention will be authorized for payment thirty-five (35) days after the date of recordation of the Notice of Completion.

The Contractor may substitute securities for any monies withheld by the Agency to ensure performance under the Contract as provided in Public Contract Code Sections 10263 and 22300.

7-3.3 DELIVERED MATERIALS

Delete the text of section 7-3.3 and replace with the following:

Materials and equipment delivered but not incorporated into the Work will not be included in the estimate for progress payment.

400 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

Delete the second paragraph and replace with the following:

The Contractor shall relocate, repair, replace or reestablish all existing improvements within the project limits (e.g., curbs, sidewalks, driveways, fences, walls, sprinkler systems, signs, utility installations, pavements, structures, survey monuments, landscaping, etc.) that are damaged or removed as a result of the Contractor's operations or as required by the plans and specifications.

All existing improvements, either within the right-of-way or not, that are damaged by actions of the Contractor, shall be restored by the Contractor to their original or better condition at the Contractor's expense.

403-3 PAYMENT

Add the following:

All costs to the Contractor for protecting, removing, restoring, relocating, repairing, replacing, or reestablishing existing improvements shall be included in the Bid.

402 UTILITIES

Add the following Subsections:

402-1.1.1 ACCURACY OF UTILITIES INFORMATION

The locations of known existing major utilities, whether above ground or underground, are indicated on the plans. Information and data reflected in the Contract Documents with respect to underground and above ground utilities at or contiguous to the site is based upon information and data furnished to the City and the Engineer by the owners of such utilities, and the City does not assume responsibility for the accuracy or completeness thereof. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

The Contractor shall be responsible for determining the location and depth of all underground facilities, including service connections, which may affect or be affected by his/her operations, and he/she shall include the cost to pothole all utilities within the limits of work in his/her bid. If an existing utility line, which has been marked by Underground Service Alert or is shown on the plans, is damaged by the Contractor, the Contractor shall repair the line and bear the cost thereof.

Contractor shall be aware that electrical conduits between street and traffic lights may exist beneath pavement and/or sidewalk in areas where such lights are in place and that said conduits are not shown on these plans.

In the event that the Contractor damages any existing utility lines that are not shown, shown incorrectly or the locations of which are not made known to the Contractor prior to excavation, a telephone call and written report shall be made immediately to the Utility owner, the Engineer, and to the City. If directed by the City, the Contractor shall make repairs under the provisions for changes and extra work contained in **SECTION 3 – CONTROL OF THE WORK** of the SSPWC Standard Specification.

600 ACCESS

600-1 General

Add the following:

The Contractor shall not impede daily activities and operations of the community center. Contractor shall coordinate all stages of construction with the Community Center Director. A staging plan shall be submitted showing proposed locations for storage of material and equipment. The plan is a required submittal for review at the pre-construction meeting.

All open trenches shall be covered with non-skid steel plates or temporary asphalt pavement before and after work hours, unless otherwise directed by the Engineer.

Add the following Subsection:

600-1.1 Parking Restrictions and Posting for Tow Away

No Parking signs, posted by the Contractor, shall be of heavy card stock and not less than 1.75 square feet of surface area on the face. Background color shall be white and letters shall be printed in red water resistant ink except day, date, and time of restriction may be printed in black water resistant ink. The signs shall be printed with the words "Tow Away" and "No Parking" with a character height of not less than 2.75 inches and a stroke width of not less than 0.5 inches. The day, date, and time of the particular restriction shall be printed or attached below the above-mentioned wording in characters of not less than 2.0 inches in height and 0.4 inches in stroke width. The day of the week shall be written out or properly abbreviated with three to four letters; date or dates or restriction shall be listed completely; the beginning and ending times shall be clearly listed on the sign.

Signs shall be mounted such that the wording "No Parking" are at an elevation at least three feet above the adjacent flowline. Signs may be tied with string to trees and power poles, taped to existing sign poles, or mounted to stakes or barricades as provided by the Contractor. The signs shall be placed as needed to control the parking of cars within the construction zone; signs shall be placed at intervals of 75 feet or less along each side of the roadway.

Signs shall be posted and maintained by the Contractor for a period of 72 hours prior to the restrictions becoming effective. The Contractor may only post parking restrictions that are effective for the duration of the Work. Upon completion of the Work, the Contractor shall promptly and completely remove and dispose all signs, stakes, and barricades. The Contractor shall promptly reset or replace all damaged or defective signs.

The Contractor shall be fully responsible for the adequate removal of all parked cars. The Contractor shall coordinate the removal of all vehicles with the Sheriff Department. The Contractor shall notify the Sheriff Communications Center upon posting of the parking restrictions for a particular street. For removal of parked vehicles, the Contractor shall notify the Sheriff Communications Center not less than two hours prior to the needed removal, stating the address nearest the parked vehicle, make, model, color, and license number. The City shall not be responsible for any delay or additional costs associated with the removal of parked cars that obstruct the construction operation.

If a vehicle owner successfully contests a towing citation in court, and their citation is dismissed for causes related to the Contractor's failure to perform the requirements of this section, the Contractor shall reimburse the City for the cost of any claims associated with the towing citation.

DEVIATIONS FROM THE REQUIREMENTS OF THIS SUBSECTION WILL BE PERMITTED ONLY ON PRIOR CONSENT OF THE ENGINEER. FAILURE OF THE CONTRACTOR TO ADHERE TO THE REQUIREMENTS OF THIS SUBSECTION, OR FAILURE OF THE CONTRACTOR TO COMPLETE HIS DAILY SCHEDULE ONCE "TEMPORARY NO PARKING" SIGNS HAVE BEEN POSTED, WILL RESULT IN DAMAGES BEING SUSTAINED BY THE CITY. SUCH DAMAGES ARE, AND WILL CONTINUE TO BE, IMPRACTICABLE AND EXTREMELY DIFFICULT TO DETERMINE. FOR EACH OCCURRENCE OF A VIOLATION, AS PROVIDED HEREIN, THE

CONTRACTOR SHALL PAY TO THE AGENCY, OR HAVE WITHHELD FROM MONIES DUE TO IT, THE SUM OF \$1,000.00.

EXECUTION OF THE CONTRACT SHALL CONSTITUTE AGREEMENT BY THE AGENCY AND CONTRACTOR THAT \$1,000.00 PER VIOLATION IS THE MINIMUM VALUE OF THE COST AND ACTUAL DAMAGE CAUSED, THAT SUCH SUM SHALL NOT BE CONSTRUED AS A PENALTY, AND THAT SUCH SUM MAY BE DEDUCTED FROM PAYMENTS DUE THE CONTRACTOR.

SECTION E

STANDARD SPECIFICATIONS COMMUNITY CENTER ROOF REPAIR SPECIFICATION NO. CIP 22/23 IN THE CITY OF LOS ALAMITOS, CALIFORNIA

0-1 STANDARD SPECIFICATIONS

Except as hereinafter amended, the provisions of the 2018 Edition of the “Green Book,” Standard Specifications for Public Works Construction (“SSPWC”), with the latest Supplements, prepared and promulgated by the Southern California Chapters of the American Public Works Association and the Associated General Contractors of America, and these modifications thereto are adopted as the “Standard Specifications” for the Agency.

Architecture components shall conform to the Construction Specifications Institute (“CSI”) standards and American Society for Testing and Materials (“ASTM”)

SECTION F
SPECIAL PROVISIONS
COMMUNITY CENTER ROOF REPAIR
SPECIFICATION NO. CIP 22/23
IN THE CITY OF LOS ALAMITOS, CALIFORNIA

Bid Items listed below correspond to the Bid Schedule in Section C

Item No. 1– Remove and Dispose of Existing Angled Roof Tiles and Repair (Roof B-1, B-3, B-4, C-1, D, E per Appendix A – Roof Location Map)

Disposal and recycling of removed material shall be included in this item of work.

Contractor shall coordinate construction with the Community Center Director to minimize disruptions to the Center's operations. Contractor shall not perform any roof repairs until the rooms underneath have been vacated. It is the responsibility of the contractor to ensure acoustic ceiling tiles are protected from damage during construction.

Contractor shall provide detailed schedule showing construction start and finish dates at each building where space below will be closed to the public and city staff.

Contractor must inspect the complete area where repairs will be performed. All measurements and dimensions must be confirmed by the contractor.

Contractor shall remove the existing roof tiles in the entire area of the building (B-1, B-3, B-4, C-1, D and E).

Due to the large area of roof tiles to be removed, the contractor shall install a plastic cover at the end of each day of work to prevent the entry of dust, insects and bats by night while the repair work lasts.

Contractor shall perform the corrective maintenance for the metal structure, includes, remove dust, rust, sand, patch and paint with SHERWIM WILLIAMS (or Approved Equal) painting products. Universal metal primer white color for coat and anticorrosive paint for finish. white color is preferred. See attached technical data.

Contractor will be in charge of transportation of materials and labor force to and from the working spaces, painting of all premises, cleaning areas in premises where work was performed, removal of all materials, leftovers and garbage from premises.

Contractor will protect all furnishings in the premises, included but not only, floors, doors, door frames, windows, outlets, gardens.

Contractor will also be responsible of any damage of premises resulting of this job, and restoration of the damages will be expected to occur within the 5 calendar days of the period given to complete the job.

Install new composite roof tiles Quarrix (or Approved Equal) including all accessories and fittings for a correct installation per manufacture. See attached technical data. Color by owner's representative.

Repair of Angled Roof shall conform to all special provisions hereon and details in Appendix B.

Payment for Remove and Dispose of Damaged Angled Roof Tiles shall be paid for at the contract Lump Sum (LS) price and shall be considered full compensation and include but not be limited to, furnishing

labor, materials, plywood, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Bid Item No. 2 – Remove and Dispose of Existing Flat Roof and Repair (Roof B-2, C-2 per Appendix A – Roof Location Map)

Disposal and recycling of removed material shall be included in this item of work.

Contractor must inspect the complete area where repairs will be performed. All measurements and dimensions must be confirmed by the contractor.

Contractor shall remove the existing roof tiles in the entire area of the building (B-2, C-2).

Due to the large area of roof tiles to be removed, the contractor shall install a plastic cover at the end of each day of work to prevent the entry of dust, insects, and bats by night while the repair work lasts.

Contractor shall perform the corrective maintenance for the metal structure, includes, remove dust, rust, sand, patch and paint with SHERWIM WILLIAMS (or Approved Equal) painting products. Universal metal primer white color for coat and anticorrosive paint for finish. white color is preferred. See attached technical data.

Contractor will be in charge of transportation of materials and labor force to and from the working spaces, painting of all premises, cleaning areas in premises where work was performed, removal of all materials, leftovers and garbage from premises.

Contractor will protect all furnishings in the premises, included but not only, floors, doors, door frames, windows, outlets, gardens.

Contractor will also be responsible of any damage of premises resulting of this job, and restoration of the damages will be expected to occur within the 5 calendar days of the period given to complete the job.

Contractor will protect all existing roof penetrations (roof/attic vents, plumbing vents, rooftop fans, HVAC equipment, etc.)

Install cold adhesive SBS Modified Bitumen Roofing Systems per manufacture. See attached technical data.

Repair of Flat Roof shall conform to all special provisions hereon and details in Appendix B. Contractor shall upgrade HVAC curb/anchors and other equipment installed on the roofs.

Contractor shall coordinate construction with the Community Center Director to minimize disruptions to the Center's operations. Contractor shall not perform any roof repairs until the rooms underneath have been vacated. It is the responsibility of the contractor to ensure acoustic ceiling tiles are protected from damage during construction.

Payment for Repair Flat Roof shall be paid for at the contract Lump Sum (LS) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, plywood, lumber at underside of exposed flat roof, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Bid Items No. 3 -8 – Furnish and Install Roof Elements

3. Furnish and Install Fascia Board

Contractor shall identify locations and quantity of damaged fascia board required to be repaired. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of fascia board installed. Removal of existing damaged fascia board shall be included in this item of work.

4. Furnish and Install Rigid Insulation

Contractor shall identify locations and quantity of damaged rigid insulation required to be repaired. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of rigid insulation installed. Removal of existing damaged rigid insulation shall be included in this item of work.

5. Furnish and Install Roof Gutters

Contractor shall identify locations and quantity of damaged roof gutters required to be replaced. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of roof gutters installed. Removal of existing damaged roof gutters shall be included in this item of work.

6. Replace Ceiling Panels

Contractor shall replace damaged ceilings panels needed to be repaired. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of ceiling panels installed.

7& 8 Replace Drainpipe System & Drain to existing Outlet

Contractor shall identify locations and quantity of damaged Drainpipe System required to be repaired. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of Drainpipe System & Drain to existing Outlet replaced. Removal of existing damaged drainpipes shall be included in this item of work.

Payment for **Furnish and Install Roof Elements** shall be paid for at the contract Lump Sum (LS) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, plywood, lumber, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Bid Item No. 9 Add Interior Ceiling Paneling to Bottom of Truss Joist Ceiling

Contractor shall install ceiling paneling to bottom of truss joists. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of ceiling panels installed.

Payment for **Add Interior Ceiling Paneling to Bottom of Truss Joist Ceiling** shall be paid for at the contract Square Foot (SF) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, plywood, lumber, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor

Bid Item No. 10 Remove and Replace Shade Structures

Contractor shall remove and replace shade structures to match existing as identified in the bid schedule. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of remove and replace shade structures.

Payment for Remove and Replace Shade Structures shall be paid for at the contract Each (EA) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, plywood, lumber, paint, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Bid Items No. 11A AND 11B - Inspect and Repair Interior Walls for Water Damage

Contractor shall identify locations and quantity of water damaged interior walls required to be repaired. The Contractor will require the Engineer's approval prior to removing and reconstructing. Measurement and payment will be made based on the final quantities of damaged interior walls. Removal of existing damaged interior walls shall be included in this item of work.

Payment for **Add Interior Ceiling Paneling to Bottom of Truss Joist Ceiling** shall be paid for at the contract Square Foot (SF) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, plywood, lumber, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor

Bid Item No. 12 – Paint Community Center Interior Rooms With City Approved Color Paint

Contractor shall paint entire interiors, which include Walls, Ceilings, Doors, and other surfaces, at of Community Center rooms as identified in the bid schedule and directed by the Engineer, per manufacture's instruction.

Payment for **Paint Community Center Interior Rooms** shall be paid for at the contract Lump Sum (LS) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Bid Item No. 13 – Remove and Replace Existing Lighting and Lighting Appurtenances

Contractor shall remove and replace existing lighting fixtures in the Community Center event halls as identified in the bid schedule, these special provisions, and directed by the Engineer (Sample Lighting fixture Technical Specifications attached for reference,). The Contractor will submit engineered lighting calculation and plan for the city review.

Payment for **Remove and Replace Existing Lighting and Lighting Appurtenances** shall be paid for at the contract Lump Sum (LS) price and shall be considered full compensation and include but not be limited to, furnishing labor, materials, equipment, and disposal to complete the work, and no additional compensation will be allowed therefor.

Applicable Construction Institute (“CSI”) Specifications

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 REFERENCE STANDARDS

- A. E84—2018B - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. PS 20-20 - American Softwood Lumber Standard.

1.02 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP);
<https://www.airbarrier.org/qap-overview/>:
 - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
 - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.
- B. Rough Carpentry Lumber: Visible grade stamp on all products required.
- C. Grade Stamp: Association under whose rules it was graded, or official grade mark of other recognized grading agencies using grading rules, equivalent to WHPA or WCLIB.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Do not deliver rough carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified. Lumber fabricated from old growth timber is not permitted.

2.02 ROUGH CARPENTRY MATERIALS

- A. Lumber: Graded in accordance with WHPA or WCLIB; maximum moisture content of 19 percent. Provide Douglas Fir Larch for structural and framing lumber, surfaced four sides to standards of the grading association. Provide Appearance Grade: SELECT wood for all exposed roof framing, eave sheathing and fascia members.
 - 1. Lumber shall reach the specified moisture content maximum prior to being covered with exterior wall finish or other material.

2. Contractor shall provide evidence of moisture content testing, when required by the Architect or designated City representative.
- B. Lumber Applications:
1. Structural Light Framing: Select structural unless otherwise noted on Drawings. All exposed lumber shall also be Appearance Grade: SELECT.
 2. Joists, rafters, bracing, lintels, horizontal framing and stress members: No. 1 unless otherwise indicated or noted on Drawings. All exposed lumber shall also be Appearance Grade: SELECT.
 3. Studs, vertical framing, non-structural furring, concealed blocking, stripping and miscellaneous nailers and backing: No. 2.
- C. Douglas Fir Plywood Sheathing: 2303.1.5 Wood Structural Panels; PS 1, APA structural 1 rated sheathing, exterior, thickness to match existing being replaced, span rating sized for spacing. Plywood sheathing shall only be used where replacing same.
- D. Nails, Spikes and Staples: Galvanized for exterior locations, high humidity locations and treated wood, plain finish for other interior locations, size and type to suit application. Comply with 2304.10 Connectors and Fasteners. For roof and floor sheathing use screw-shank nails only. For roof sheathing use galvanized finish.
- E. Drift Bolts or Pins, Wood Screws and Lag Screws: CBC 2304.10 Connectors and Fasteners, sized to suit application, galvanized for exterior locations, high humidity locations and treated wood, plain finish for other interior locations.
- F. Fasteners: Expansion shield or powder actuated type for anchorage to solid masonry or concrete. Refer to Section 05500 for approved types.
- G. Stock Framing Connectors: CBC 2304.10 Connectors and Fasteners, types indicated on Drawings, galvanized, with nails fully driven in all holes in each face of connector.
1. Approved Manufacturer: Simpson Strong Tie Co., Inc., San Leandro CA.
 2. Equivalent products by other manufacturers must be approved by Architect.
- H. Non-Stock Framing Connectors: Comply with details.
- I. Preservative (Pressure) Treated Lumber: Comply with AWPA manual of recommended practice and Standard C22-03. Use preservative complying with P1/P13-19. Comply with Rule 1113, SCAQMD.
1. Douglas Fir or Western Hemlock, used shall comply with the following:
 - a. Lumber shall be WWPA or WCLIB grade stamped.
 - b. Lumber shall be No. 2 grade or better.
- J. Waterproof Membrane: Grace Ice and Water Shield.
- K. Fire-Retardant Lumber: Chemically treated and pressure impregnated, as defined in CBC 2303.2 Fire-Retardant-Treated Wood, maximum flame spread of 25, in accordance with ASTM E84—2018B.
1. Lumber shall be grade stamped by an approved agency at the factory and shall bear identification indicating the fire performance rating thereof.
- L. Fire Retardant Plywood: AWPA C27-02; thickness as indicated on Drawings, Interior Type A fire retardant treated, maximum flame spread of 25, labeled or marked by an approved independent testing agency, dried to an average moisture content of 15 percent or less prior to installation.

PART 3 EXECUTION

3.01 FRAMING, FURRING AND STRIPPING

- A. Erect wood framing, furring, stripping and nailing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch.
- B. Construct members of continuous pieces of longest possible lengths.
- C. Construct and erect required headers and lintels.
- D. Cutting and Notching: Comply with CBC Section 2308.5.9 Cutting and Notching.

- E. Bored Holes: Comply with CBC Section 2308.5.10 Bored Holes.

3.02 STRUCTURAL SHEATHING

- A. Thickness to match existing sheathing being replaced or as on the Drawings.
- B. Boundary Nailing: Not less than 3/8 inch from edge, spaced not more than 6 inches oc.
- C. Blocking: Panel edges shall bear on framing members and solid blocking. Allow minimum 1/8 inch clear space between edges.
- D. Minimum Size Vertical Panel: 12 inches wide.
- E. Minimum Size Horizontal Panel: 24 inches wide.

3.03 HORIZONTAL FRAMING

- A. Bearing: 1-1/2 inch minimum on wood or metal, 3 inches on masonry. Lay framing members with crown up.
- B. Lateral Support: Use solid blocking or other approved means.
- C. Lap joists a minimum of 3 inches when framed from opposite sides of a beam.
- D. Openings: Double joists required for trimmer and headers for openings 4 ft. or larger.
- E. Provide ties, purlins and blocking in conformance with CBC Section 2308.7.7 Purlins.

3.04 WOOD DECKS REPAIR

- A. Loose or void knot holes and cracks less than 3/8" shall be neatly covered with 24-gauge galvanized sheet metal.
- B. Any loose boards or unsupported boards shall be securely fastened. All decking shall be inspected and any rotten or damaged decking shall be removed for a minimum of 2 spans and replaced with new decking matching the existing and securely nailed using a minimum 2 nails at each rafter. Extreme care shall be taken to ensure the ends are tightly secured so there is no differential movement between boards. In addition, securely nail all loose decking and verify the decking conforms to the manufacturer's recommendations.
- C. All damaged rafters shall be repaired by securely bolting another rafter of the same dimension onto the existing so the new rafter extends at least 2' in both directions beyond the damaged area and spans across a support (or) replace the damaged rafter.
- D. Holes less than 12" in Diameter: Install 18-gauge galvanized sheet metal plate over the opening and spanning a minimum of 4" beyond the opening in all directions. Secure the sheet metal plate to the deck.

END OF SECTION

SECTION 09 29 00

GYPSUM BOARD

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: 1. Gypsum board wall and ceiling systems. 2. Trim accessories, Joint compound, control joints, fasteners, reveal moldings, and sealants. 3. Schedule - Level of Finish for gypsum board surfaces.

B. Related Sections:

1. Section 054000 - Cold Formed Metal Framing
2. Section 061000 - Rough Carpentry
3. Section 072116 - Batt and Blanket Insulation
4. Section 078400 - Firestopping
5. Section 079200 - Joint Sealers
6. Section 092216 - Non-Load Bearing Metal Wall Framing Systems
7. Section 092226 - Ceiling Suspension Systems
8. Section 092600 - Veneer Plaster
9. Section 091813 - Cementitious Backer Board
10. Section 092810 - Gypsum Backer Board
11. Section 092800 - Backing Boards and Underlayments
12. Section 092117 - Shaft Wall
13. Section 09622 - Fabric Wall Systems
14. Section 099000 - Paints and Coatings
15. Division 22 - Plumbing
16. Division 23 - Heating, Ventilating, and Air Conditioning (HVAC)
17. Division 26 – Electrical

1.2 REFERENCES

A. Reference Standards: Current edition at date of Bid.

B. ASTM International (ASTM):

1. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
3. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
4. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base

5. ASTM C1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
6. ASTM C1396 - Standard Specification for Gypsum Board.
7. ASTM C1629 - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels
8. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
9. ASTM D4977 - Standard Test Method for Granule Adhesion to Mineral Surfaced Roofing by Abrasion
10. ASTM D5420 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact)
11. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
12. ASTM E695 - Standard Method for Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading
13. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
14. ASTM C 1658 - Standard Specification for Glass Mat Gypsum Panels

C. Gypsum Association (GA): Web Site <http://www.gypsum.org/>

1. GA-201 - Gypsum Board for Walls and Ceilings.
2. GA-214 - Recommended Levels of Levels of Gypsum Board Finish.
3. GA-216 - Specifications for the Application and Finishing of Gypsum Board.
4. GA-226 - Application of Gypsum Board to Curved Surfaces.
5. GA-235 - Gypsum Board Typical Mechanical and Physical Properties.
6. GA-236 - Joint Treatment under Extreme Weather Conditions.
7. GA-238 - Guidelines for Prevention of Mold Growth on Gypsum Board.
8. GA-600 - Fire Resistance Design Manual.
9. GA-801 - Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors

D. Wall and Ceiling Bureau (WCB); Website <http://wallandceilingbureau.org>

1. TB-52010 - Control Joints for Gypsum Board
- E. UL Fire Resistance Directory (UL): Fire Resistance Volume 1 – with Hourly Ratings for Beams, Floors, Roofs, Columns, Walls and Partitions.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Conform to Section 013113 for coordination with work of other Sections.
2. Coordinate with Wall Type Schedule, Section 092600, Section 09255, and Section 092117 for gypsum board systems used in conjunction with work of this Section.

B. Preinstallation Conference: Arrange, in accordance with Section 013119 two weeks prior to beginning work of this Section.

1. Walk job and determine full extent level of quality for work.
2. Coordinate gypsum board pre installation conference with veneer plaster pre installation conference as specified in Section 092600.

1.4 SUBMITTALS

A. Submit under provisions of Section 013300.

B. Product Data: Manufacturer's published descriptive literature for gypsum board types, trim accessories, and control joints pertinent to this Section.

1. Recycled Content: Indicate recycled content; indicate percentage of pre-consumer and postconsumer recycled content per unit of product.
2. Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.

C. Test Data: ASTM E 119 Certified testing lab Design for each proprietary fire-resistive wall and ceiling assembly listing manufacturers and products. Unlisted manufacturers and products not accepted.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Company with minimum 5 years documented experience.
2. Able to supply complete and tested systems conforming to code.

B. Installer Qualifications:

1. Company specializing in work of this section with documented experience in commercial quality work of comparable scope.
2. Recommended as qualified installer by WCB prior to Bid, or accepted by Architect.

C. Mock-Up: Conform to provisions of Section 014300.

1. Install 8 square foot minimum mock-ups of gypsum board finish and control joints.
2. Approved mock-ups may be incorporated into Work and become standard for approved workmanship and finishes.

D. Sustainability Standards Certifications: Conform to Section 018113 for documentation of LEED Credits contributing to Certification of Project under USGBC LEED-NC 3.0 Green Building Rating System California Green Building Standards Code.

1. Recycled Content: Indicate recycled content; indicate percentage of pre-consumer and postconsumer recycled content per unit of product.
2. Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Conform to Section 016510, GA-238, GA-801, and manufacturer's instructions.

B. Deliver materials in original unbroken containers or bundles bearing name of manufacturer and brand.

C. Verify products undamaged before acceptance at Project Site. Do not use products with visible signs of mold growth and damage.

1.7 FIELD CONDITIONS

A. Temperature, Ventilation and Moisture: Conform to GA - 216 and manufacturer's instructions. Maintain temporary controls to regulate heating, ventilating, moisture, and humidity levels. Do not begin taping and finishing until following conditions are achieved.

1. Building: Fully enclosed and free of standing water. Watertight roofing and wall envelope systems in place, except where Architect accepts water and mold resistant gypsum board.

2. Temperature: Between 50 and 95 degrees F for minimum 48 hours.

3. Gypsum Board Moisture Content: 0.4 percent on gypsum scale (12 percent on wood scale).

4. Wood Substrate Moisture Content: Maximum 16 percent.

B. Lighting: Sufficient temporary lighting to perform work to achieve specified finishes.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Georgia Pacific Corp. (GP)

1. Web Site <http://www.gpgypsum.com>).

B. United States Gypsum Corp. (USG)

1. Web Site <http://www.usg.com>

C. CertainTeed Gypsum, Inc.

1. Web Site <http://www.certainteed.com>

D. Temple-Inland Gypsum Products

1. Web Site <http://www.templeinland.com/BuildingProducts/Gypsum>

E. National Gypsum

1. Website <http://www.nationalgypsum.com>

F. Pabco Gypsum

1. Website <http://www.pabco gypsum.org>

G. Substitution Requests: Submit for approval under provisions of Section 012500.

2.2 REGULATORY REQUIREMENTS

A. Conform with Section 014100 for code compliance requirements related to this Section.

B. Conform to requirements for tested fire rated assemblies.

1. GA 600, Fire Resistance Design Manual.

2. UL, Fire Resistance Directory , or Intertek Testing Services (WHI).

3. IBC Chapter 25, including Section 2506, 2508, 2509 and related tables.

4. ICC Evaluation Reports and Standards.

2.3 PERFORMANCE / DESIGN CRITERIA

A. Gypsum Board Products: Conform to general provisions of ASTM C1396.

1. Ends square cut and edges tapered.
2. Gypsum Board at Non-Rated Assemblies: 1/2 inch thick.
3. Gypsum Board at Fire-Resistive Rated Assemblies: 5/8 inch thick, UL labeled, and conforming to ICC ES Report for Type X or Type C.
4. [Mold-Resistant Interior Panels: Conform to general provisions of ASTM C1658 or ASTM C1396. Test to ASTM D3273 with Rating of 10 or Test to ASTM G21 with Score of 0. B. Abuse-Resistant and Impact Resistant Interior Panels:
 1. Surface Abrasion Resistance: Test to ASTM C1629 and ASTM D4977 for maximum surface damage:
 - a. Level 1: 0.126 inch (3.2mm).
 - b. Level 2: 0.059 inch (1.5mm).
 - c. Level 3: 0.010 inch (0.3mm).
 2. Surface Indentation: Test to ASTM C1629 and ASTM D5420 for indentation resistance.
 - a. Level 1: 0.150 inch (3.8mm).
 - b. Level 2: 0.100 inch (2.5mm).
 - c. Level 3: 0.50 inch (1.3mm).
 3. Soft Body Impact: Test to ASTM C1629 and ASTM E695 until failure.
 - a. Level 1: 90 ft-lbs (122 J).
 - b. Level 2: 195 ft-lbs (265 J).
 - c. Level 3: 300 ft-lbs (408 J).
 4. Hard Body Impact: Test to ASTM C1629 until failure.
 - a. Level 1: 50 ft-lbs (68 J).
 - b. Level 2: 100 ft-lbs (136 J).
 - c. Level 3: 150 ft-lbs (204 J).

2.4 MATERIALS

A. Paper Faced Gypsum Board: Conform to ASTM C1396.

1. GP ToughRock.
2. USG Sheetrock.
3. CertainTeed Gypsum, Inc, ProRoc Gypsum Board.
4. Temple-Inland, Inc. Gypsum Board
5. Pabco Gypsum Flame Curb

B. Moisture and Mold-Resistant Gypsum Board:

1. GP Dens-Armor Plus, glass mat facings on front and back and moisture-resistant core.
2. GP ToughRock Mold-Guard
3. USG Fiberock Aqua Tough, unfaced, solid moisture-resistant core.
4. USG Sheetrock Mold Tough
5. CertainTeed Gypsum, Inc.: ProRoc Moisture and Mold Resistant with M2Tech

6. Temple-Inland GreenGlass Interior Board, glass mat facings on front and back and moisture-resistant core.

7. Pabco Gypsum Mold Curb

C. Moisture, Mold, and Abuse-Resistant Gypsum Board: Tested for mold resistance in conformance to ASTM D3273 (Rating of 10) or ASTM G21 (Score of 0), and conforming to ASTM C1629 Classifications for abuse-resistance (Levels I, II, or III).

1. GP Dens-Armor Plus AbuseGuard.

a. Surface Abrasion: Level 3.

b. Indentation Resistance: Level 1.

c. Soft-Body Impact: Level 1.

2. USG Sheetrock Mold Tough AR

a. Surface Abrasion: Level 2

b. Indentation Resistance: Level 2

c. Soft-Body Impact: Level 1

3. USG Fiberock Aqua Tough Interior Panel.

a. Surface Abrasion: Level 2.

b. Surface Indentation: Level 2.

c. Soft Body Impact Test: Level 2.

4. CertainTeed Gypsum, Inc.: ProRoc Extra Abuse Type X Gypsum Board with M2Tech

a. Surface Abrasion: Level 2.

b. Indentation Resistance: Level 1.

c. Soft Body Impact: Level 3.

d. Hard Body Impact: Level 1

5. Temple-Inland, Inc.: ComfortGuard Abuse-Resistant Mold-Resistant board

a. Surface Abrasion: Level 2.

b. Indentation Resistance: Level 1

c. Soft Body Impact: Level 1

d. Hard Body impact: Level 1

D. Moisture, Mold, and Impact-Resistant/Mold-Resistant Enhanced Gypsum Board: ASTM C1629 and ASTM D3273 level 10.

1. GP Dens-Armor Plus Impact-Resistant.

a. Surface Abrasion: Level 3 (0.126 inch abraded depth)

b. Surface Indentation: Level 1 (0.150 inch indentation)

c. Soft Body Impact: Level 3 (300 ft-lbs)

d. Hard Body Impact: Level 2 (100 ft-lbs)

2. USG Fiberock Aqua Tough with Tuff Hide Primer Sealer

a. Surface Abrasion: Level 3

b. Surface Indentation: Level 2

c. Soft Body Impact: Level 3

- d. Hard Body Impact: Level 2
- 3. Temple-Inland, Inc.: ComfortGuard Impact-Resistant Mold-Resistant board
 - a. Surface Abrasion: Level 2
 - b. Surface Indentation: Level 1
 - c. Soft Body Impact: Level 3
 - d. Hard Body Impact: Level 3
- E. High Impact Hard Body Impact Gypsum Board Panel: ASTM C1278.
 - 1. USG Fiberock Very High Impact (VHI)
 - a. Surface Abrasion: Level 2
 - b. Surface Indentation: Level 2
 - c. Soft Body Impact: Level 3
 - d. Hard Body Impact: Level 3
- F. Ceramic Tile Backer Board: As specified Section 092810 091813.

2.5 ACCESSORIES

- A. Joint Materials: As recommended by gypsum board manufacturer for intended purpose.
 - 1. Tape: Manufacturer's standard paper tape. Fiberglass tape not accepted.
 - 2. Compound: Manufacturer's standard.
 - 3. Conform to GA-201 and GA-216 for reinforcing tape, joint compound, adhesive, and water.
 - 4. Do not use topping compounds for embedding tape or as first coat over trims and fasteners.
- B. Primer/Surfacer for Level 5 Finish: USG Tuff-Hide Primer-Surfacer.
- C. Thermal and sound-attenuation insulation: As specified Section 072116.
- D. Joint Sealant at Exposed Joints: Paintable, Non-setting, non-staining, and as specified Section 079200.
- E. Acoustical Sealant at Exposed Joints: Nonsag, paintable, nonstaining, latex sealant conforming to ASTM C834. Tested to ASTM E90 for reduction of airborne sound transmission through perimeter joints and openings in building construction at representative assemblies. Specified for type and quality:
- F. Acoustical Sealant at Concealed Joints:
 - 1. Synthetic Rubber Joint Sealant: Single component, non-skinning, non-hardening, 90 percent solids, acoustical properties conforming to ASTM C919 and to ASTM E90.
 - 2. Water Based Siliconized Acrylic Latex:
 - 3. Install 2 beads under steel stud framing channel and wood plates and into 1/2 inch space between top of floor and bottom of gypsum board and plaster systems.
- G. Firestopping and Smoke Sealants: As specified Section 078400. 2.6 TRIM
 - A. Provide trim shapes as required to cover and make neat edges.
 - B. Paper Faced Metal Bead and Trim: ASTM C1047, electro-galvanized steel with paper face and flanges, USG Beadex specified for type and quality.
 - 1. Outside corner beads
 - 2. Inside corners.
 - 3. L-type edge trims.

4. J-shaped edge trim
 5. 3/4 inch radius corner beads.
- C. Metal Trim Shapes: ASTM C1047,
1. Galvanized steel Expanded Flange Corner Bead, L-Trim, and J-Trim
 2. Galvanized one-piece L-Trim, and J-Stop.
3. Zinc Control Joint No. 093. 2.7 REVEAL MOLDINGS
- A. Reveal Moldings: Aluminum 6063 T5 alloy with chemical conversion coating.
- B. 1/2 Inch F Reveal Moldings: Fry Reglet, DRMF-625-50, 5/8 inch deep by 1/2 inch wide.
- C. 3/4 Inch F Reveal Moldings: Fry Reglet, DRMF-625-75, 5/8 inch deep by 3/4 inch wide.

2.8 FASTENERS

- A. Screws conforming to ASTM C1002. Bugle or pan head, and lengths as required for securing materials in place.
1. Wood Framing and Backing: Type W
 2. Light Gauge Metal Framing: Type S.
 3. 18 Gauge or Heavier Metal Framing: Type S-12.
- B. Pneumatic Fasteners:
1. Minimum 0.100 inch diameter.
 2. Length to penetrate minimum 1/4 inch beyond steel stud framing.
 3. Aerocote 1000 corrosion-resistant coating.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify installation conditions as satisfactory to receive work of this Section before beginning.
- B. Verify framing systems, including backing, insulation, vapor barriers, work of Division 15 and 16, and other systems ready for work of this Section.
- C. Verify work of Section 054000, Section 072116, Section 092216, and Section 09120 for metal framing, insulation installation, and vapor barrier requirements prior to beginning work of this Section.
- D. Building Envelope: Except where moisture and mold-resistant gypsum board panels are installed and accepted by Architect, conform to following:
1. Do not begin work until building envelope is fully enclosed and temperature, ventilation, and humidity are controlled.
 2. Do not begin work under conditions that gypsum board installation may be exposed to contact with water.

3.2 PREPARATION

- A. Protect surrounding areas and surfaces to preclude damage.
- B. Avoid soiling, spatter, and damage to work of other trades. Use cover cloths, or other means of protection. Remove, clean, and repair soiled or damaged work.

3.3 INSTALLATION

A. Conform to ASTM C840, GA-216, and manufacturer's instructions.

B. Corner Trim: Reinforce external corners with specified corner beads.

C. Edge Trim: Install square edged metal trim bead at exposed edges and boundaries of areas and where abutting dissimilar materials.

D. Reveal Trim:

1. Install with screws at 12 inch on center in 10 foot lengths, except where shorter lengths are sufficient for dimension of wall plane.

2. Make butt joints tight and in alignment.

3. Miter corners.

4. Promptly remove excess joint compound.

E. Control Joints: Conform to WCB Tech Bulletin Control Joints and GA-234, except as otherwise indicated. Verify that required double framing is in place before installing control joints.

1. Door and Other Openings: Install control joints at each side of wall opening and at both sides of wall, except alcoves and similar wall configurations.

2. Continuous Wall Planes: Install control joints floor to ceiling at each 30 lineal foot of wall.

3. Ceilings: Install across ceiling at each 50 lineal foot distance and each 2500 square foot of ceiling area.

4. Joints with Other Materials: Install where gypsum board meets masonry, concrete, and other materials, except where joints are concealed under horizontal chair rails or other trim.

F. Other Trim: Install as indicated or required for complete and finished installation.

G. Panel Joints:

1. Layout: Design to reduce joints to minimum.

2. Install board in maximum lengths to minimize horizontal and vertical joints.

3. Start installation of panels at exterior wall to position butt joints as far away from exterior wall as possible.

4. Place edges in contact and fit neatly, without forcing into place.

5. Stagger joints on opposite sides of partitions and on same side of wall surface at adjacent joints.

6. Maintain 1/2 inch clearance from bottom of wall panel and top of floor. Seal with acoustical sealant.

7. In order to prevent wicking of moisture, do not let gypsum board rest on floor after installation.

H. Single Layer Systems: Install in accordance with ASTM C840. Where modified, amended, or required by fire resistive or sound isolation system, conform to the requirements of the manufacturer's tests, as approved.

I. Double Layer Systems: Install in accordance with ASTM C840, including System VIII for double layer gypsum wallboard installations applied with screws. Conform to required fire resistance standards.

J. Moisture and Mold Resistant Gypsum Board: Install at restrooms, kitchen, janitorial closets, and areas where moisture is present. Do not install as backer board for ceramic tile.

K. Ceramic Tile Backerboard: Install under provision of Section 092810 Section 091813 behind ceramic tile wall installations. Moisture resistant (green board) gypsum board not accepted as backer for ceramic tile.

L. Joint Sealant and Acoustical Sealant: Install to completely fill void between wallboard edges and adjacent surface.

M. Firestopping and Smoke Sealants: Install in accordance with Section 078400.

N. Plumbing, HVAC, and Electrical: Coordinate with Division 22, Division 23 and Division 26. Provide for installations and penetrations of ductwork, equipment, receptacles, and other work.

3.4 TRIM AND JOINT FINISHING

A. Joints and Interior Angles: Embed tape in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads, and accessories. Tool joint compound smooth and free of tool marks and rides.

1. Center reinforcing tape over joint and coat into compound leaving approximately 1/64 inch to 1/32 inch under tape to provide proper bond.
2. Follow with skim coat to embed tape, but not to function as second coat.
3. Allow embedding coat to thoroughly dry prior to application of second coat.
4. Allow second coat to thoroughly dry.
5. Apply third coat evenly over and extending beyond second coat on joints, feathering to smooth uniform finish.

B. Beads, Trim, Fastener and Joint Depressions:

1. Cover with three coats of taping and joint compound. Apply in different directions making smooth transitions with adjacent surfaces.
2. Allow sufficient drying time between coats.
3. Leave depressions flush with surface plane.

3.5 TOLERANCES

A. Shim panels as necessary to conform to tolerances.

B. Between Board Faces: 1/16 inch offset.

3.6 ADJUSTING

A. Remove and replace following gypsum board installations:

1. Board in contact with water for over 18 hour time period.
2. Gypsum core exhibiting dampness or water intrusion.
3. Facing paper exhibiting delamination.
4. Facing or core exhibiting mold growth or turning black.
5. Board sagging or warped.
6. Board directly exposed to water determined to be contaminated.

3.7 CLEANING

A. Clean beads, screeds, metal base, metal trim, mechanical and electrical items, and other work. B. Wipe clean, leaving work ready for finish specified under other Sections.

C. As work is completed in each space, clean all rubbish, utensils, and surplus materials from the space. Leave floors broom-clean.

3.8 SCHEDULE - LEVEL OF FINISH FOR GYPSUM BOARD SURFACES

A. Conform to GA-214, ASTM C840, manufactures instructions, and provisions of Contract Documents.

SECTION 07 32 00
COMPOSITE ROOF TILE
QUARRIX COMPOSITE TILE SPECIFICATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Composite Roof Tiles.
- B. Tile Roof Accessories for Composite System.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry
- B. Section 06 20 00 - Finish Carpentry.
- C. Section 07 53 13 - Chlorinated-Polyethylene Roofing.
- D. Section 07 60 00 - Flashing and Sheet Metal.
- E. Section 07 71 10 – Roof Specialties.
- F. Section 07 72 00 – Roof Accessories.
- G. Section 08 60 00 - Roof Windows and Skylights.
- H. Division 15 - Mechanical: Mechanical work projecting through roof.
- I. Division 16: - Electrical: Electrical work projecting through roof.

1.3 REFERENCES

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
- B. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- C. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- D. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.
- E. ASTM C 290 - Method of Test for Resistance of Concrete Specimens to Rapid Freezing and Thawing in Water.
- F. ASTM C 387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
- G. ASTM C 887 - Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar.
- H. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and

Waterproofing.

- I. ASTM D 635 - Rate of Burn and Rate of Burn – Weathered.
- J. ASTM D 638 - Tensile and Tensile – Weathered.
- K. ASTM D 1929 – Ignition Temps and Ignition Temps - Weathered.
- L. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- M. ASTM D 2822 - Standard Specification for Asphalt Roof Cement.
- N. ASTM D 2843 – Smoke Density
- O. ASTM E 108 – Class C Fire
- P. ASTM G 155 – 2000 Hours – Xenon Weathering
- Q. Temperature Cycling per AC-07
- R. FS SS-S-153C - Sealants used with EPDM.
- S. FS TT-S-00230C - Chlorosulfonated polyethylene sealants.
- T. ICBO-ES AC48 - Acceptance Criteria for Roof Underlayment for Use in Severe Climate Areas.
- U. ICC-ES -AC07 - Acceptance Criteria for Special Roofing Systems.
- V. FM 4473 - Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls.
- W. TAS 100 - Test Procedure For Wind And Wind Driven Rain Resistance.
- X. Canadian Standard 19-HP-5M - Sealing Compound, One Component, Acrylic Base, Solvent Curing.
- Y. NRCA - Steep Roofing Manual; National Roofing Contractors of America.
- Z. SMACNA - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors National Association.
- AA. WSRCA/TRI Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions.
- BB. WSRCA/TRI Standard Installation Guide for Concrete and Clay Roof Tile in Cold Weather Applications.
- CC. FRSA/TRI Concrete and Clay Roof Tile Installation Manual for Florida High Wind Applications

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Roofing tile materials and installation was tested to ICC-ES -AC07 Acceptance Criteria for Specialty Roofing Systems.
 - 1. ASTM G155 – 2000 Hours – Xenon Weathering
 - 2. ASTM D638 – Tensile & Tensile - Weathered
 - 3. Wind resistance
 - 4. Uplift bend
 - 5. Penetration
 - 6. ASTM E108 – Class C Fire

7. ASTM D1929 – Ignition Temps & Ignition Temps - Weathered
8. ASTM D635 – Rate of Burn & Rate of Burn – Weathered
9. ASTM D2843 – Smoke Density
10. Temperature Cycling
11. FM 4473 – Ice Hail Impact – Hail impact test for Class 4 Hail

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
- C. Shop Drawings: Indicate metal flashing profiles, joint locations, fastening locations, and installation details. Indicate tile layout with location of cut and special shaped tiles identified.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two full size samples, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Warranty documents, issued and executed by manufacturer of roof tile, countersigned by roof tile installer.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum three years documented experience producing composite roof tile.
- B. Installer Qualifications: Minimum five years documented experience installing products specified in this section and/or supervision by a manufacturer authorized installation representative.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 1. Finish areas designated by Architect.
 2. Do not proceed with remaining work until workmanship is approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.
- D. Pre-Installation Meeting:
 1. Convene at job site seven calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
 2. Require attendance by representatives of the following:
 3. Installer of this section.
 4. Other entities directly affecting, or affected by, construction activities of this section.
 5. Notify Architect four calendar days in advance of scheduled meeting date.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site in manufacturer's unopened pallets, labeled with data indicating compliance with specified requirements.

- B. Storage and Protection:
 - 1. Store products in manufacturer's unopened packaging until ready for installation.
 - 2. Maintain dry storage area for products of this section until installation of products

1.8 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

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

1.10 WARRANTY

- A. Manufacturer's Warranty: Furnish roof tile manufacturer's 50 year limited warranty against defects in product workmanship and materials.
- B. Tile will be free from manufacturing defects not to rot, split, splinter or suffer structural damage from normal weather conditions and termite or fungal decay when subject to normal use for a period of fifty (50) years from date of original purchase or will not blow off or otherwise become damaged by winds less than eighty (80) miles per hour for a period of ten (10) years from the date of original purchase.
- C. Warranty does not provide protection against any failure, defect or damage caused by situations and events beyond Quarrix's control, including but not limited to: (i) natural disasters, hail over 1.0" in diameter, fire, smoke, chemicals, earthquakes, lightning or static electricity, (ii) falling, thrown or blown objects, (iii) the neglect, abuse, misuse (including faulty installation, repair or maintenance), improper transportation, handling or storage of the Quarrix Products or other failure to comply with the instructions set forth in the documentation and/or manual accompanying the Quarrix Products, (iv) a modification of the Quarrix Products not provided by Quarrix, (v) a malfunction of any product not provided by Quarrix with which the Quarrix Products are used or combined, (vi) use, modification or other treatment of the Quarrix Products in a manner for which it was not designed or intended, (vii) defects or damage due to inferior building practices, ventilation, drainage issues or roof slopes inconsistent with snow and ice control, (viii) replacement under or subjection to abnormal use conditions, (ix) normal wear and tear including the natural effects of progressive aging on the color and surface of the tile, (x) discoloration and variations in color or uniformity caused by weathering and/or UV exposure, staining due to shade or sap, ash or proximity to metals that might cause discoloration; (xi) foot traffic, (xii) vandalism or other malicious actions, or (xiii) Quarrix Products blown off by winds in excess of 80 mph.
- D. Refer to the Quarrix Composite Tile Limited Warranty & Certificate of Warranty for complete details.

1.11 EXTRA MATERIALS

- A. See Section 01 60 00 - Product Requirements.
- B. Provide an additional one percent of installed roof tiles, but not less than one full square, for Owner's use in roof maintenance.
- C. Furnish extra materials packaged with protective covering for storage and identified with labels clearly describing contents.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Quarrix Building Products, A Division of Liberty Plastics Inc an LDI Company, which is located at: 705 Pennsylvania Ave. S.; Minneapolis, MN 55426; Toll Free Tel: 800-438-2920; Tel: 763-540-9700; Fax: 763-540-9709; Email to request info (Info@quarrix.com); Web: <http://www.quarrix.com>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 COMPOSITE ROOF TILE

- C. Roof Tiles: Quarrix Composite Tile, Double Roman Lightweight Tile; Profile similar to a high barrel Spanish tile and 67% less weight than traditional tile or concrete eliminating the need to reinforce roof structures. Made of HDPE colored resin with textured appearance and two pre-drilled factory fastening locations in each tile.
 - 1. Size: 16-1/2 inches (419 mm) long by 13 inches (330 mm) wide.
 - 2. Material: High Density Polyethylene Polymer
 - 3. Exposure per Tile: 13-1/2 inches (343 mm) long by 11-19/32 inches (394 mm) wide with an overall height of 2-1/4 inches.
 - 4. Weight/Tile 3.38 lb. (1.50 kg).
 - 5. Weight/Square 304 lbs. (137.9 kg).
 - 6. Fire Rating: Class C
 - 7. Certification testing completed to ICC-ES AC-07 Acceptance Criteria for Special Roofing Systems:
 - a. ASTM G155 – 2000 Hours – Xenon Weathering
 - b. ASTM D638 – Tensile & Tensile – Weathered
 - c. Wind resistance
 - d. Uplift bend
 - e. Penetration
 - f. ASTM E108 – Class C Fire
 - g. ASTM D1929 – Ignition Temps & Ignition Temps – Weathered
 - h. ASTM D635 – Rate of Burn & Rate of Burn – Weathered
 - i. ASTM D2843 – Smoke Density
 - j. Temperature Cycling
 - k. FM 4473 – Ice Hail Impact – Hail impact test for Class 4 Hail
 - 8. Color:
Black
- D. Trim: Supply manufactured shapes of same material, style, color, and texture as roof tile for indicated hips, ridges, and rakes.

2.3 TILE ROOF ACCESSORIES

- A. Underlayment:
 - 1. Synthetic Self Sealing Roof Underlayment: For roof slopes 4:12 and above underlayment shall meet or exceed ICC-ES AC 48 and AC 207 criteria to meet UBC, IBC and IRC requirements for Roofing Underlayment.
 - 2. Asphalt Saturated Organic Felt: No. 30 Asphalt Saturated Organic Felt, to meet requirements of ASTM D 226, Type 2 or equal.
 - 3. Rubberized Self Sealing Underlayment: ASTM D 1970 sheet barrier of self-adhering rubberized asphalt membrane underlayment having internal reinforcement, and "split" back plastic release film.

- E. Tile Battens: Quarrix Tile Battens, manufactured of corrosion-free, laminated high-density polyethylene corrugated plastic. Layers of corrugated plastic must be glued, not stapled.
1. Tile Battens: Quarrix Tile Battens.
 - a. Color: Black.
 - b. Dimensions: 1-1/2 inches (38.1 mm) wide by 8 feet (2.4 m) long by 3/4 inch (19 mm) high.
- F. Upper and Lower Metal/Eave Closures: Quarrix coated steel Eave Closure (birdstop) friction fits between the weather checks on the lower edge of the tile. Closure is formed to match the contour of the tile and fits on top of the drip edge under the first course of tile to raise the lower edge to the correct height as well as keep out birds and insects.
1. Color:
 - a. Black
 - b. Canyon Earth
 - c. Desert Red
 - d. Golden Rod
 - e. Saddle Brown
- G. Universal Tile Ridge Vent: Combines tile ventilation and expandable weather blocking with an aluminum closure system to attach to tile with a peel-off butyl adhesive.
1. Color / Width:
 - a. Black / 15-3/4 inch by 16 feet (400 mm by 4.87 m)
 - b. Terra Cotta / 15-3/4 inch by 16 feet (400 mm by 4.87 m)
 - c. Venetian Red / 15-3/4 inches by 16 feet (400 mm by 4.87 m)
 - d. Brown / 15-3/4 inches by 16 feet (400 mm by 4.87 m)
- H. Quarrix Universal Tile Flashing: Fully adhered, expandable aluminum flashing with a width of 11-3/4 inches, can be used as a primary flashing and counter flashing, in combination with bent metal flashings, or as a weather block wherever mortar would be required.
1. Color:
 - a. Black
 - b. Terra Cotta
 - c. Venetian Red
 - d. Brown
- I. Fasteners:
1. Tile Fasteners:
 - a. Quarrix Tile Fasteners: Corrosion resistant exterior grade screws specially engineered for special roof applications and recommended with Quarrix composite tile. Tested to SAE J78 standard with 2-3/4 inch overall length, 1-1/2 inch thread length, #10 pan-head (.40 inch) screws, 2 per tile.
 - b. Screw Fasteners: use screws for maximum wind resistance. Two 2-3/4 inch (6.98 cm), non-corrosive No. 10 coarse thread, .344 inch – diameter (8.74 mm) pan-head screws. This will allow for 1/4 inch (6.35 mm) penetration through sheathing.
 - c. Nails: two non-corrosive, 2-3/4 inch (5.08 cm), 10/11-gauge, ring-shank (18 rings/inch), 3/8 inch-diameter (9.53 mm) head nails. This will allow for 1/4 inch (6.35 mm) penetration through sheathing, when using Quarrix tile battens.
 2. Batten Fasteners: Battens should be fastened every 10 inch using nails or screws that are non-corrosive and of sufficient length to fully penetrate the roof sheathing.
 3. Underlayment Fasteners: Fasteners for underlayment shall be 11-gauge roofing nails with 3/8 inch (9.53 mm) heads with sufficient length to penetrate into the sheathing 3/8 inch (9.53 mm) or through the sheathing 3/4 inch (19.05 mm) or through the sheathing, whichever is less.
 4. Flashing Fasteners: Flashing shall be fastened with 11-gauge, ring-shank, corrosion-resistant nails compatible with the flashing material with sufficient length to penetrate the sheathing 3/4 inch (19.05 mm) or thorough the sheathing, whichever is less.

5. Fasteners for Hip/Ridge/Rake trim and Hip/Ridge Starter: Quarrix Tile Fasteners for hip and ridge trim shall be No. 10, coarse-thread, 0.344 inch-diameter (8.74 mm), corrosion-resistant pan-head screws (same as the tile fasteners). Use 2-3/4" (6.98 cm) long for ridges and 2-3/4" (6.98 cm) long for the hips. A 3" (7.62 cm) non-corrosive, ring-shank nail in combination with an approved adhesive under the nose of each trim piece can also be used.
- J. Snow Guard: Roof tile manufacturer's fabricated unit for protection over entrances, lower roof areas, or other areas where falling snow is not desired. Fabricated from metals and profiles from Alpine Snow Guards (Alpinesnowguards.com).
- K. Mortar/grout for hips, open valleys and saddles shall be a combination of 50 lb. mix of Quickwall Surface Bonding Cement and 120 lb. Mason Mix to meet or exceed strength requirements of ASTM C 387 for Type "N" mortar and Concrete Acrylic Fortifier to meet or exceed ASTM C 887 standard specifications as manufactured by Quikrete, Atlanta, GA. Grout and colored mortar to match field tile as manufactured by Flexim is recommended by the Tile Manufacturer.
- L. Adhesives to secure cut pieces of field tile along hips, valleys, flying gables, and protrusions and to install hip/ridge/rake trim shall be Titebond as manufactured by Franklin International, Columbus, OH; RT-600 as manufactured by Ohio Sealant Inc., Mentor, OH, or 3500 Roof Tile Adhesive/Sealant by Geocel, Elkhart, IN, or equal.
- M. Metal Flashings:
1. General Requirements: Form flashings to profiles indicated on Drawings, in accordance with manufacturer's printed instructions, and as recommended by SMACNA Architectural Sheet Metal Manual to protect materials from physical damage and to shed water.
 - a. Form flashing lengths square, accurate to profile, in maximum possible lengths; form flashing lengths free from distortion or defects detrimental to appearance or performance.
 - b. Hem edges of flashings exposed to view a minimum 1/4 inch (6 mm) on underside.
 2. Eave Flashings and Other Metal Flashings: Copper sheet, ASTM B 370, cold rolled, natural finish; 16 ounces per square foot minimum thickness.
 3. Eave Flashings and Other Metal Flashings: Copper sheet, ASTM B 370, cold rolled, natural finish; 20 ounces per square foot minimum thickness.
 4. Eave Flashings and Other Metal Flashings: Stainless Steel Sheet for Flashings: ASTM A 666, Type 304 alloy, soft tempered; 24 gauge minimum thickness.
 5. Eave Flashings and Other Metal Flashings: 24 gauge galvanized steel sheet, ASTM A 653/A 653M, minimum G90/Z275 hot-dip zinc coating.
 6. Eave Flashings: Aluminum sheet, ASTM B 209; 0.019 inch minimum thickness.
 7. Concealed sealants along gable rakes, ridge/hip trim and flashings with asphalt saturated felt underlayment shall be non-running, heavy body Plastic Roof Cement that meets or exceeds the requirements of ASTM D 2822 and Federal Specifications SS-S-153C (Type 1) or equal. Sealants used with EPDM or Synthetic Underlayment shall be per manufacturer's recommendation.
 8. Exposed sealants, such as those used on counter flashings or non-soldered joints, should be high quality sealants to meet or exceed requirements of U.S. TT-S- 00230C, U.S. Fed Cat. No 8030-965-2397, Canadian 19-HP-5M, ASTM C 290 or equal.

PART 3 EXECUTION

3.1 EXAMINATION

- N. Verification roof deck structure to meet roof tile manufacturer's installation requirements.
1. Verify roof penetrations are in place and flashed to deck surface.
 2. Verify roof openings are correctly framed prior to installing Work of this section.
 3. Verify deck is of sufficient thickness to accept fasteners.
 4. Verify deck surfaces are dry, unfrozen, and free of ridges, warps, and voids

- O. Notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation. Broom clean deck surfaces prior to installation of underlayment.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Coordinate with installation of gutters, vents, skylights and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and securely fastened.

3.3 INSTALLATION

- A. General: Install in accordance with manufacturer's instructions.
 - 1. Arrange three or more stacks of roof tile at installation area; mix tile from stacks as installation progresses for consistent color blend.
 - 2. Do not overload roof surface with staged materials.
- P. Install roof tile in accordance with shop drawings, manufacturer's printed installation instructions for specified project conditions and the following:
 - 1. ICC-ES -AC07.
 - 2. WSRCA/TRI Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions.
 - 3. WSRCA/TRI Standard Installation Guide for Concrete and Clay Roof Tile in Cold Weather Applications.
 - 4. FRSA/TRI Concrete and Clay Roof Tile Installation Manual for Florida High Wind Applications.
 - 5. NRCA Steep Slope Roofing Manual.
 - 6. SMACNA Architectural Sheet Metal Manual.
- B. Eave Flashings: Install metal eave flashing 1/8 inch (3 mm) beyond the fascia; lap end joints minimum 3 inches (76 mm), with plastic cement seal between overlapping metal surfaces.
 - 1. Apply self-seal membrane over eave flashing parallel to eave edge in accordance with manufacturer's printed instructions.
 - 2. Extend self-seal membrane up roof slope minimum 2 feet (610 mm) beyond interior face of exterior wall or as required by code, whichever is greater.
 - 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
- C. Valley Flashings: Install 24 inch (610 mm) to 28 inch (711 mm) standing seam, double rib (for closed valleys) or 24 inch (610 mm) double rib valley flashing (for open grouted valleys).
 - 1. Form flashings in accordance with manufacturer's instructions for valley type indicated.
 - 2. Apply flashing over 36 inch (914 mm) full width vertical underlayment centered in all valley areas.
 - 3. Install flashings centered on valley; nail in place at 12 inches (305 mm) on center, 1 inch (25 mm) from metal edges.
 - 4. Roof Pitch 4 in 12 or Greater: Lap flashing end joints minimum 4 inches (102 mm).
 - 5. Roof Pitch Less Than 4 in 12: Lap flashing end joints minimum 6 inches (152 mm).
 - 6. For slopes below 3:12 or 4:12 in severe weather areas, install flashings and EPDM underlayment per details provided by the Manufacturer.
- D. Sidewall Flashings: Coordinate with the installation of sidewall flashings specified in Section 07 60 00 - Flashing and Sheet Metal Flashing and Sheet Metal.
- E. Synthetic underlayment
 - 1. Use self-sealing membrane that meets or exceeds requirements of ICC-ES 48 along roof

perimeters and protrusions. Underlayment should be installed parallel to the roof eave with a 6 inch (15.24 cm) lap on the ends, a 3 inch (7.62 cm) side lap and a minimum 1/4 inch (6.35 mm) lap over eaves.

2. Class C: ICC-ES, self-sealing membrane is required up the roof deck at least 2 feet (60.96 cm) inside the exterior wall, 6 feet (1.83 m) in the valleys and 3 feet (91.44 cm) around protrusions, gables, walls and under valley flashings. For better protection, smaller roofs, and lower slopes, self-sealing membrane may be used on the entire roof deck. High temperature underlayment is not required, but may enhance performance. Heavy granulated underlayment is not recommended.
- F. Asphalt Saturated Organic Felt No.30 Underlayment or approved synthetic underlayment: Install 2 plies underlayment over entire roof area, parallel to eaves.
1. Place first ply 18 inches (457 mm) wide at eave edge, with bottom edge extending 1/4 inch (6 mm) over lower edge of eave flashing; seal to eave flashing.
 2. Place second ply 36 inches (914 mm) wide over first ply flush at bottom and sealed to first ply.
 3. Place third ply 36 inches (914 mm) wide 15 inches (381 mm) up from bottom edge of first ply.
 4. Place each successive ply 18 inches (457 mm) up from bottom of each previous ply.
 5. Nail horizontal seams 1 inch (25 mm) from exposed edge of felt; space nails in accordance with manufacturer's printed instructions for roof slope.
 6. Overlap vertical seams minimum 6 inches (457 mm), seal lap with plastic cement, then nail at 3 inches (76 mm) on center; stagger vertical laps of each successive layer so that vertical joints do not align in any two adjacent plies.
 7. Ridges, Except at Ridge Vents: Extend underlayment over ridges 6 inches (152 mm) on each side making a double layer.
 8. Hips: Extend underlayment over hips 6 inches (152 mm) on each side making a double layer.
 9. Valleys: Overlap metal valley flashing 3 inches (76 mm) and seal to metal.
- G. Rubberized Underlayment: Install underlayment over entire roof area, parallel to eaves.
1. Install in accordance with manufacturer's printed instructions.
 2. Place first ply at eave edge, with bottom edge extending 1/4 inch (6 mm) over lower edge of eave flashing; seal to eave flashing.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
 4. Ridges, Except at Ridge Vents: Extend underlayment over ridges 6 inches (457 mm) on each side making a double layer.
 5. Hips: Extend underlayment over hips 6 inches (152 mm) on each side making a double layer.
 6. Valleys: Overlap metal valley flashing 3 inches (76 mm) and seal to metal.
- H. Single Ply Roof Membrane: Install EPDM membrane over entire roof area, parallel to eaves.
1. Install in accordance with manufacturer's printed instructions.
 2. Place first ply at eave edge, with bottom edge extending 1/4 inch (78 mm) over lower edge of eave flashing; seal to eave flashing.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
 4. Bond lapped joints in accordance with EPDM manufacturer's printed instructions.
 5. Ridges, Except at Ridge Vents: Extend membrane over ridges 6 inches (152 mm) on each side making a double layer.
 6. Hips: Extend membrane over hips 6 inches (152 mm) on each side making a double layer.
 7. Valleys: Overlap metal valley flashing 3 inches (75 mm) and seal to metal.
- I. Intersections of Roof Surfaces and Abutting Vertical Surfaces:
1. Install continuous 36 inch (914 mm) wide strips of self-seal membrane to extend 30 inches (762 mm) across roof deck and 6 inches (152 mm) up vertical surface.
 2. Install continuous metal flashing to extend 3 inches (76 mm) up vertical surface.
 3. At locations where vertical surface will abut top edge of tile, install metal flashing to extend 3 inches (76 mm) up vertical surface, form metal flashing to extend minimum 3 inches (76 mm) over tile, and form 1/2 inch (12.5 mm) return hem at edge of metal.
 4. Form saddle flashings for protrusions through roof in accordance with manufacturer's printed

instructions.

- J. Ridge Vent: Install in accordance with manufacturer's printed instructions.
1. Apply Quarrix Universal Tile Ridge Vent (or Quarrix Universal Flashing) to the ridge.
 2. Center vent on the ridge and loosely form the material to the tile roof surface
 3. Determine how much vent you want exposed or concealed and snap horizontal lines accordingly
 4. Overlap any rolls by 3 inch (7.52 cm).
 5. Remove the protective strip and firmly press into the tiles.
- K. Tile Battens:
1. Align the batten along the pre-chalked line.
 2. Never space battens more than 13-1/2 inches apart.
 3. Nail or screw the batten 2 inches from each end.
 4. Nail or screw the battens every 10 inches.
 5. Quarrix Tile Battens are not structural support for the tile.
 6. Tile fasteners need to penetrate the roof deck through the battens by a minimum of 3/4 inch.
 7. A utility knife can be used for cutting the battens.
 8. When applying the battens, it is recommended to install one roof plane at a time and not leave battens exposed an extended time to heat and sun as movement may occur prior to being covered by the tile.
- L. Eave Flashings: Install metal eave flashing 1/8 inch (3 mm) beyond the fascia; lap end joints minimum 3 inches (76 mm), with plastic cement seal between overlapping metal surfaces.
1. Apply self-seal membrane over eave flashing parallel to eave edge in accordance with manufacturer's printed instructions.
 2. Extend self-seal membrane up roof slope minimum 2 feet (610 mm) beyond interior face of exterior wall or as required by code, whichever is greater.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
- M. Fasteners: Install in accordance with manufacturer's printed instructions.
- N. Roof Tile:
1. Install tile right to left, as viewed facing ridge.
 2. Install closure strips in accordance with manufacturer's printed instructions for project conditions.
 3. Fasten tile each tile to battens with two Quarrix High-Low Roofing Screws, 2.75 inch #10 pan-head (.40 inch) screws per tile.
 4. Fasten tile each tile to battens with two 2 inch 10/11 gauge ring shank 3/8 inch diameter nails and 13-1/2 inches (343 mm) exposure.
 5. Cut tile, as tile installation progresses, for hip, valley, and wall conditions.
 6. Partial tiles shall be secured at two points or by two methods; screws, wires, adhesives and clips.
- O. Install venting as tile installation progresses; locate in accordance with manufacturer's instructions.
- P. Trim:
1. Install trim pieces for hips, ridges, and rakes as tile installation progresses; cut shapes, set in bed of plastic roof cement, and secure in place with minimum 2 fasteners per piece for rake trim, and minimum 1 fastener per piece for hip and ridge trim.
 2. Cut special shapes for project conditions as required.
 3. Overlap trim piece ends minimum 3 inches (76 mm); seal overlapping surfaces with approved adhesives.

- Q. Counter flashings:
1. Install counter flashings tight to substrates, with top edge of counter flashing concealing base flashings; lap end joints minimum 3 inches (76 mm).
 2. Fasten counter flashings using specified fasteners; fasten on vertical surfaces only, at maximum spacing 12 inches (305 mm) on center.

3.4 PROTECTION

- R. Protect installed products until completion of project.
- S. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 52 00

MODIFIED BITUMEN MEMBRANE, COLD APPLIED

1 PART 1 - GENERAL

1.01 DESCRIPTION

- A. Completely tear off existing roof, insulation and all other related items to the deck. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 1. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 2. Contractor shall raise mechanical equipment to maintain an 8" curb height and provide design and details for anchorage to the curb including but not limited to anchorage type and size of required hardware and wood/sheet metal screws. The proposed design shall include construction drawings and lateral and gravity calculations.
 - 3. Replace or repair existing drains and install new pitch pans.
 - 4. Replace all damaged, split or deteriorated plumbing support wood blocks.
- B. Install crickets where required to prevent any ponding water. Contractor is solely responsible to determine the number and location of the crickets.
- C. Provide lead flashings on breather pipe, electrical and plumbing penetrations presently without lead.
- D. Install wall and base flashings systems.
- E. Install sheet metal flashing.
- F. Mechanically fasten a tapered rigid insulation with screws and plates. Cover the entire surface with a ½" cover board applied in adhesive.
- G. Fully apply in cold adhesive one layer of smooth interply SBS membrane over the protection board. Fully apply in cold adhesive one layer of granulated fire rated cap sheet over the interply.
- H. Contractor shall raise all equipment curbs such as A/C, mechanical units and sky lights and vent pipes to maintain an 8" (if needed) curb height from field of new roofing system.
- I. All damaged equipment curbs shall be replaced.
- J. Wood Deck Repairs: Repair any structural damage to the deck. Deck repairs shall be performed as a Change Order to the Contract and in accordance with the Change Order Provisions and Unit Price Provisions of the Contract Documents. Lumber for Decking shall match the existing. Framing Lumber shall be number 2 Douglas fir of the same dimension as the existing. Bolts shall conform to ASTM A325.
- K. Paint shall approximately match the existing, be designed to bond to the surface designated, be manufactured by Glidden, Sherwin Williams, (or equal). Primer for Wood shall be a wood primer designed for use with the paint selected. Primer for Metal shall be a metal primer designed for use with the paint selected.

1.02 RELATED SECTIONS: Drawings, General Provisions, Special Provisions and Division 1 apply to the work of this section.

- A. Section 06 10 00 - Rough Carpentry
- B. Section 07 62 00 - Sheet Metal Flashing and Trim

1.03 REFERENCES: References in these specifications to standards, test methods, codes etc., are implied to mean the latest edition of each such standards are adopted. The following is an abbreviated list of associations, institutions, and societies, which may be used as references throughout these specifications.

- A. American Society for Testing & Materials (ASTM):
 - 1. ASTM E96/E96M—2016: Standard for Water Transmission
 - 2. ASTM C1289—2018 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 3. California Title 24 requirements for Cool Roof.
- B. American Wood Preservative Bureau:
 - 1. AWPB LP-2: Water Borne Preservatives (Above Ground)
- C. Industry Publications:
 - 1. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual
 - 2. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).
 - 3. Factory Mutual (FM Global) - Approval Guide.
Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
- D. SMACNA: Sheet Metal and Air Conditioning Contractors National Association
Chantilly, VA
- E. OSHA: Occupational Safety and Health Administration Washington, DC

1.04 COORDINATION

Coordinate with other trades affecting or affected by work of this section.

1.05 QUALITY ASSURANCE

- A. Contractor Qualifications: Prior to award of the contract the contractor shall submit evidence of the following:
 - 1. Contractor shall provide a letter stating that they have at least 4 years experience with TPO roofing systems and a list of 3 jobs over 150 squares.
 - 2. An updated letter from the primary roofing manufacturer they propose to use stating the Contractor has a valid “ Certificate of Eligibility “ and that application done by contractor will qualify for the warranty as required by the specification.
- B. Pre-Roofing Conference: Meet at the project site well in advance of the time schedules for roofing and other related work, and review requirements for the work and conditions which could possibly interfere with successful performance of the work, or required to coordinate with it or to protect it there after with representatives of all firms involved in the work. Require manufacturer's technical representative to participate in the conference. Date shall be determined after project has been awarded.
- C. Final Inspection: Manufacturer's representative shall provide a comprehensive intermediate and final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.
- A. Manufacturer Qualification: Roofing manufacturer shall own and operate their own manufacturing facility for TPO roofing system for a minimum of 7 years. Roofing membranes supplied under a private label agreement are not acceptable. Roofing manufacturer shall submit a letter from their CPA firm confirming compliance with this requirement.
- B. Testing and agency requirements:

1. Fire Testing: Material shall be tested for a minimum of Class A fire rating. The system should pass the said tests without any rock, covering or emulsions thus facilitating maintenance and eliminating excess load on the roof. All modified bituminous sheet roofing systems must bear testing agency (Underwriters Lab, Warnock Hersey etc.) on package or container indicating that materials have been produced under testing agency's classification and follow-up service.
2. Contractor shall obtain all local permits for the application of the roofing system. The contractor prior to the job must obtain necessary permits.

1.06 WARRANTY

- A. Roofing Contractor: Upon completion of work, furnish a written five-year workmanship guarantee. This warranty shall cover all leaks due to defective workmanship for a period of 5 years. Manufacturer shall conduct an audit at no cost to owner within 3 years of project completion date. All deficiencies identified in the report shall be fixed and brought up to specification at no cost to the owner.
- B. Manufacturer: Manufacturer shall provide owner with a 30 year non-prorated Roofing System Guarantee. Warranty should cover all leaks caused by faulty workmanship or material. Warranty will be in effect on the date of substantial completion of the project.

1.07 SUBMITTALS

- A. Pursuant to the provisions of the General Provisions. "Submittals" the Contractor shall submit the following:
 1. Product specification sheet for each roofing component within the specified system. Data should substantiate that materials comply with the specifications.
 2. Test results as outlined in Article 1.05.B above.
 3. Final warranty per Article 1.06.
 4. Samples (3" x 5") of each roofing component which is specified..
 5. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
 6. Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.
 7. As part of the submittal package, contractor shall submit a letter from the manufacturer agreeing to perform the maintenance services identified in section 1.06 C at no cost to the owner.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Roofing material shall be delivered to the job-site in new, dry, unopened containers clearly showing catalog number, product description, manufacturer's name and location. Delivered quantities should be sufficient to assure continuous work.
- B. Assure that materials are kept clean, and away from excessive heat and cold; do not remove labels or tear off protective covering until ready for application; store in an enclosed area where temperature is above 10 degrees C (50 degrees F) and below 32 degrees C (90 degrees F). Material shall not be stored directly on the ground.
- C. Do not double stack membrane. Maintain aisle space between stacks to facilitate fire suppression.
- D. Do not overload structure with building materials.

- E. Strictly follow recommended storage instructions supplied by the manufacturer.
- F. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack TPO systems or lay them on their side. Follow manufacturers' instructions for storage and handling.

2 **PART 2 - PRODUCTS**

3 **PART 3 - EXECUTION**

3.01 EXISTING / GENERAL CONDITIONS

- A. Contractor shall verify that surfaces are smooth, dry, sound, and free from any conditions effecting proper roofing applications. Prior to starting work, owner shall be advised of conditions needing correction. Work will not be started until other trade work required ahead of membrane application is completed. Contractor is responsible for all carpentry work such as wood nailers, wood curbs, wood expansion or contracting members, wood cants and similar items necessary for the completion of the work according to these specifications.

Removal of existing roof

- 1. The existing roofing membrane(s) and insulation shall be removed to the existing deck and shall include but not be limited to, all wall flashings, edge flashings, and all other items incorporated there in.
- 2. Remove only as much roofing as can be replaced with a completely new roofing system and made watertight the same day. Phase roofing application is not allowed.
- 3. All debris shall immediately be removed from the roof surface and deposited into trucks or containers through an enclosed trash chute. Removal of existing roofing materials should be performed in conjunction with the installation of the new roofing system. All exposed areas must immediately be covered and made watertight. No overnight stockpiling of debris on the roof shall be permitted.
- 4. Contractor shall clean all roof surfaces and is responsible for keeping the building and surrounding area neat and orderly.
- 5. Trash container or trucks shall be removed from the premises when they are full.
- 6. Clean the roof deck surfaces of all loose materials and other impediments detrimental to the application of the new roofing materials.

3.02 PROTECTION

- A. Prior to any job shut-down, all seams laid in the preceding time period shall be checked for water tightness. Required precautions should be taken to leave the job in watertight condition. If moisture is present at any location contractor at no expense to the owner or manufacturer will replace all wet material.
- B. All finished work of other trades that is damaged in the execution of work under this section shall be replaced or restored at the expense of the trade who caused the damage.
- C. Ground storage and work shall be confined to the areas designated by the Owner as agreed upon at the pre-bid conference. Do not travel across landscaped areas without the Owner's approval.

3.03 SURFACE PREPARATION

- A. Prior to installing the roofing material, remove from deck all debris, nails, sharp objects, dirt, moisture, petrochemical materials or projections that could in any way damage the systems. Surface shall be prepared such that there is positive and workable drainage. Areas of the roof with ponding water should be corrected and the slope adjusted accordingly so as to prevent future

standing water.

3.04 WORKMANSHIP

- A. Contractors must be thoroughly skilled in the application of specified materials; with all workmanship done in such a manner as to fulfill the requirements of drawings and specifications. Any specific directions furnished by manufacturer, and as published in the manufacturer's manual for modified bitumen roofing systems, regarding the application of roofing materials shall be strictly followed. All deviations from the manufacturer's published instructions shall be secured in writing on the manufacturer's letterhead approved by the "Manager of Technical Services".
- B. Prior to applying TPO system the contractor and his foreman shall review the specifications and the manufacturer's technical manual with the manufacturer's technical representative to make certain all aspects of membrane application is understood. Application will proceed in strict accordance with specifications and detailed drawings and instructions in said technical manual. No verbal/oral deviation will be accepted unless authorized on company's letterhead signed by the company's "Manager of Technical Services".
- C. Maintain constant supervision by a competent foreman.
- D. Contractor must supervise installation of and be responsible for seeing that roof mechanical, electrical equipment, roof drains and other works are properly flashed. Make roof and flashing repairs as necessary; advise the Architect / owner in writing of all potential leaks as may be caused by other trades.
- E. Install only as much roofing material as can be completed and covered with a cap membrane in one day. No section of the roof should be left exposed and unfinished. Phase roofing is not accepted.
- F. Do not roll roofing equipment or stack materials on completed new roofing surfaces, without the adequate protection of a ½" plywood sheets.
- G. Do not apply any roofing materials before sunrise, or at anytime when there are indications of moisture, (rain, mist, dew, frost or snow).
- H. Insure that no heavy objects remain in one place on the portions of the new roofing membrane where the membrane has not yet set or the adhesive has not fully bonded the layers. .
- I. Insure that all fish mouths are cut and patched (do not attempt to walk down the fish mouths). Objects causing separation between reinforcing plies must be removed.
- J. Every attempt shall be made to install flashings at openings, projections, and walls adjoining new roofing during all work periods. If circumstances do not allow this, these areas shall be made watertight at the end of each day or work period.
- K. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, and apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.

3.05 INSULATION APPLICATION

- A. Shall be applied in strict conformance with insulation manufacturer's specification and comply with NRCA and RIC- TIMA recommendations.

Mechanically fasten the tapered polyisocyanurate board over the metal deck / Light Weight Concrete / Wood Deck with 16 fasteners per board per FM –I90 pattern (1.2 meter x 2.43 meter board (4 x 8 foot board). Fasteners shall be of sufficient length to penetrate the board and the metal deck and comply with FM I90 requirement. Use only fasteners with a minimum 3-inch (76 mm) stress plate when mechanically attaching insulation. Do not attach insulation with nails. Adhere the pre primed cover board over the polyisocyanurate insulation in adhesive.

- B. Install insulation boards with staggered board joints in one direction (unless taping joint).
- C. Install insulation boards snug. Gaps between board joints shall not exceed 1/4 inch (6 mm). All gaps in excess of 1/4 inch (6 mm) shall be filled with like insulation material.
- D. Wood nailers shall be 3-1/2 inches (89 mm) minimum width or 1 inch (25 mm) wider than metal flange. They shall be of equal thickness as the insulation with a minimum 1-inch (25 mm) thickness. All nailers shall be securely fastened to the deck.
- E. Cant strips shall be installed at the intersection of the roof and all walls, parapets, curbs, or transitions approaching 90 degrees, to be flashed. They shall be approximately 4 inches (102 mm) in horizontal and 4 inches (102 mm) in vertical dimension. The face of the cant shall have an incline of not more than 45 degrees with the roof.
- F. Do not install any more insulation than will be completely waterproofed each day.

3.06 COLD ADHESIVE

- A. **Smooth Ply & Cap Membrane Application:** Apply roofing in accordance with roofing system manufacturer's specification and the following requirements. Apply the ply and cap sheet in cold adhesive allowing 3.5" side and 6" on end laps. End laps shall be staggered with a minimum spacing of 3". Apply to produce a 1/8" -1/4" outflow of adhesive at all seams. Areas with less than 1/8" outflow will be checked with a trowel and resealed. Turn up 2" above can strip at all vertical surfaces. All layers shall be 100% adhered to each other and to the protection board or base. Areas of partial or loose adhesion shall be redone at contractor's sole cost and expense. The roofing membrane components shall immediately be applied after application of base sheet and/or insulation as a continuous operation.
 - 1. Priming: All metal flanges (all jacks, edge metal, and lead drain flashings) and concrete and masonry surfaces shall be primed with an asphalt primer meeting ASTM D 41.
 - 2. Membrane Adhesive Application: roller, squeegee or spray unit can be used for application of the membranes. Application shall be done in a smooth, even, continuous layer without breaks or voids. Pour the adhesive on the substrate and spread, using a serrated edged squeegee, applied at the rate of 1-1/2 gal per square (6 L/sm).
 - 3. Fill all voids between the penetration and flashing collar with approved caulking.
 - 4. Apply the adhesive so that the substrate is coated in a pattern slightly larger than the first sheet being applied.
 - 5. End laps and selvage laps of the membrane being lapped shall be coated with adhesive so that a visible bead of adhesive appears. Roll all laps with a steel roller to ensure proper adhesion. Alternately, the end laps and side laps may be hot air welded. The hot-air welding method will provide a watertight lap immediately and may be preferable when inclement weather is threatening.
 - 6. Allow 5 to 15 minutes for solvents to evaporate from the adhesive (i.e. tack time or open time) before embedding any sheets into newly applied adhesive. Tack times may vary based on ambient conditions.

7. All rolls (both ply and cap) shall never be put down in full-length rolls (33 lineal feet). They should be cut to the following lengths.

Slopes of	¼" up to 1 ½"	17-foot max
Slopes of	1 ½" to 2"	11-foot max

8. All material must be cut to specified lengths then relaxed or heated until the material lies completely flat before installation. (i.e. no wrinkles, buckles or rigid end strips)
9. Matching granules may be broadcast into the modified bitumen bleed out at seams while hot to enhance the finished appearance of the membrane.
10. All end laps shall be staggered a minimum of 18 inches (457 mm) so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of membrane shall be installed over the end laps. End laps, flashing sheets and other seams formed over granule surfaces require pre-heating of the top surface of the underlying granule surface membrane to a point where the granules just begin to sink into, and the modified bitumen compound comes up through the granules to ensure proper seam construction and adhesion.
11. All laps shall be parallel or perpendicular to the slope of the roof such that the flow of water is not against the lap.

3.07 BASE FLASHINGS

- A. Install all base flashings of roof wall junctures, projections and expansion point curbing per manufacturers specification. Backer sheet for flashing shall be a minimum of one layer of self-adhering smooth-surfaced polymer-modified bitumen sheet, smooth heat welded membrane covered with top surfacing. Base flashing cap sheet shall be applied via heat welding. Cold adhesive application of flashing is not allowed due to possibility of slippage.
- B. Base flashing shall be fused in place so that it extends a minimum 6" onto surface of roof and a minimum of 4" above termination of roofing membrane on wall. When flashing has to be installed over a porous surface, apply asphalt primer at a rate of 1.9 - 2.8 liter / 10 sqm (1/2 to 3/4 gal. per 100 sq. ft) and allow to dry.
- C. Apply pressure to the flashing membrane to obtain maximum contact to surface to which it is applied. There shall be no voids under the base flashing membrane. It is imperative that complete attachment be obtained to the roof surface, roofing membrane over cant, and the wall. A small bead of bitumen should be squeezed out at the edges.
- D. Subsequent strips of base flashing shall be fused in place in the same fashion, overlapping preceding strip by 4". Overlap shall be interply fused to preceding strip. Pressure shall be applied to surfaces to ensure adhesion.
- E. The flashing must not remain open at the end of the workday.
- F. The contractor shall thoroughly inspect the completed flashing system at the end of each day's work.
- G. Mechanically fasten top edge base flashings with approved fasteners 4"-6" on center per manufacturer's specifications.
- H. Install metal counter flashing as required.

3.08 FLASHINGS

- A. Install all base flashings of roof wall junctures, projections and expansion joints per manufacturers' specification. Special care shall be taken to generously preheat the surface to which the flashing is being applied prior to heating the bottom of flashing membranes. Manufacturer's detailed flashing drawing's and application procedures shall be observed and strictly followed.

3.09 SEALANT

- A. All edges of flashing exposed at gravel stops, waste stacks, pitch pans, vent stacks, etc., to be caulked with a smooth continuous bead of approved sealant.

3.10 INSPECTION OF COMPLETED SYSTEM

- A. All cap membrane shall be carefully inspected by the Architect / owner for construction damage and imperfect heat fusion. Any holes or tears shall be patched with the appropriate cap membrane. The patch must extend at least 4" in all directions from the edges of the tear or puncture. The final inspection of the roofing system shall be done prior to application of the coating. Any deficiency identified shall be repaired prior to applying the coating.

3.11 DEFICIENCY ADJUSTMENTS

- A. Deficiencies identified by the Architect / owner during the final inspection shall be corrected within five (5) working days. The warranty will not be issued until the deficiencies are corrected.

3.12 CLEANING AND REPAIRING

- A. The contractor shall be held fully responsible for cleaning, repairing, touch up or replacing (when directed) items or areas which have been soiled, discolored or damaged by the work of this section. Precaution shall be taken against splashing any material on to adjacent areas. The contractor shall immediately remove any trace of such splashes or spills.

3.13 WALKWAYS

- A. Construct walkways prior to the application of coating by adhering it with approved adhesive. Install walkways per architectural drawing. If no drawings are provided then install walkway around the perimeter of all rooftop equipment, at all door and stair landings and pathway between both.
- B. Walkway sections shall be no longer than 3'x4' with a 2" inches minimum gap between each section to allow for drainage.

3.14 DEBRIS DISPOSAL

- A. The contractor shall make his own arrangements for disposal of debris and waste material. All disposals will be done off site and at the contractor's expense. The owner assumes no responsibility for the disposal of any roofing material. Debris from project will be removed daily, and at no time allowed to block any thoroughfare. Premises shall be cleaned to the satisfaction of Architect / owner.

3.15 FIRE WATCH:

- A. Fire watch shall be provided continuously during and for at least 2 hour after the last torch on the roof is extinguished. At least two 2-1/2 gallon containers of water and two 4A60BC extinguishers shall be available during the fire watch. When work is interrupted, or at the end of a section of roofing, and at end of each day's work, areas which had been subjected to torch applications shall

be surveyed with an infra-red sensing device. Hot spots shall be cooled and re-surveyed. If a hot spot persists, the roof shall be cut open and any smoldering shall be extinguished before the foreman leaves the site.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings, counter flashings, gutters, downspouts and other items indicated in Schedule. B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

- A. Section 07 32 16 Concrete Roof Tiles
- B. Section 07 52 00 Modified Bitumen Membrane

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M—2017- Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
- B. ASTM B695—2004(2016) - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel Strip for Building Construction CDA A4050 - Copper in Architecture - Handbook; current edition.
- C. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

- A. See Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Include major counter flashings, trim, fascia units and expansion joint systems, downspouts and scuppers.
- D. Describe material profile, jointing pattern, jointing details, fastening methods and installation details.
- E. Scaled manufacturer's catalog data acceptable.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience in commercial and institutional type construction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Package and protect materials during shipment to avoid dampness and staining. Uncrate and inspect materials for damage, dampness and staining upon delivery to the jobsite. Remove from the site and replace damaged materials that cannot be restored to like-new condition.
- C. Store materials in dry, weather-tight, ventilated areas until immediately before installation. Stack performed and prefinished material to prevent twisting, bending or abrasion and to provide ventilation. Prevent contact with materials during storage which may cause discoloration, staining or damage.
- D. Handle sheet metal items to avoid damage to surfaces, edges and ends.
- E. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M—2017; grade A, commercial quality, with G90/Z275 zinc coating; minimum 24 gage, (0.0239 inch) (0.61 mm) thick base metal or as indicated on the Drawings.
- B. Lead Sheet: ASTM B749-03, 0.047 inch (1.19 mm) minimum thickness; UNS Number L51121.
 - 1. Minimum 4 lbs/sf for split-lead (field soldered) jacks and drains, 2-1/2 lbs/sf for roof jacks.

2.02 GUTTER AND DOWNSPOUT FABRICATION

- A. Seal metal joints.

2.03 ACCESSORIES

- A. Provide accessory materials and other items essential to complete the sheet metal and trim installation, including sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of the work, matching or compatible with material being installed, non-corrosive, size and gage required for performance minimums.
- B. Fasteners: Rivets, nails, sheet metal screws, machine screws, self-tapping screws and stove bolts, of the types and size best adapted to the conditions of use.
 - 1. Provide fasteners of the type specified or indicated.
 - 2. Unless otherwise noted, fasteners shall be galvanized steel or stainless steel, with soft neoprene washers.
 - 3. Open-end type rivets may be used for all applications except where watertight connections are required, in which case use closed-end type only.
 - 4. Fasteners to Wood Substrate: Full threaded screws, galvanized when applied on the exterior, minimum No. 12 size, round head or flat head with neoprene washers as appropriate to surface applied.
 - 5. Fasteners to Concrete, Masonry and Metal Substrates: Galvanized when applied on the exterior, expansion or wedge type as appropriate to surface applied, neoprene washers.
 - 6. Comply with details on Drawings.
- C. Underlayment:
 - 1. ASTM D412; Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers - Tension
 - 2. ASTM D903; Standard Specification for Peel or Stripping Strength of Adhesive Bonds.
- D. Primer: Coordinate primer with finish paint and coating, as applicable, to provide sound foundation for field-applied topcoats despite prolonged exposure during construction.
 - 1. Shop Primer for Galvanized Steel, Exterior: SERIES 66 EPOXYLINE, Two-Part Epoxy Coating, by Tnemec.
 - 2. Shop primer for Ferrous Metal at Concealed Exterior Locations and for Interior Locations: 90E-92, ETHYL SILICATE ZINC-RICH PRIMER, by Tnemec.

2.04 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate materials in accordance with the best trade practices and with all joints and corners accurately machined, filled and fitted and rigidly framed together and connected. C. Carefully match components to produce perfect continuity of line and design.
- D. Make joints and connections in exterior face metal watertight, using approved sealing materials and methods of assembly.
- E. Fit faces of metal in contact with hairline joints, except as otherwise indicate or require for expansion or fitting.
- F. Conceal fastenings, unless otherwise indicated. Conceal required reinforcements within the finished assembly.

G. Provide for expansion and contraction by providing expansion and contraction and building movement capability in the completed work, without over-stressing the materials, breaking connections, or producing wrinkles and distortion in finished surfaces.

1. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of sheet metal work, form metal to provide for proper installation of one-component sealant.

2. Expansion Provisions: Where lapped or bayonet-type expansion provisions in sheet metal work cannot be used or would not be sufficiently waterproof and weatherproof form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with one component polyurethane sealant.

H. Finish sheet metal work water and weather-tight throughout.

I. Form pieces in longest possible lengths, true to shape, accurate in size, square and free from distortion or defects. Typically, provide sheet metal items in 8 to 10 ft lengths. Single pieces less than 8 ft long may be used to connect to factory-fabricated inside and outside corners and at ends of runs.

J. Miter and seam corners. Form exposed sheet metal work without excessive oil-canning, buckling or tool marks, true to line and levels indicated and with exposed edges folded back to form hems on underside 1/2 inch.

K. Form material with flat-lock seams. Sweat full of solder, except where installed to permit expansion and contraction. Lap flat-lock seams and lap seams where soldered, according to pitch, but in no case less than 3 inches. Make seams in direction of flow. Fill expansion joints with sealant.

1. Soldered flat lap seams not permitted.

L. Fabricate corners from one piece with minimum 18 inch long legs; solder for rigidity, seal with sealant.

M. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

A. Comply with details as indicated on the Drawings and included in the NRCA manual. When details or conditions are not indicated, comply with standard details and recommended practices in SMACNA and referenced industry standards. For proprietary products, comply with manufacturer's installation instructions and recommendations.

B. Produce lines, profiles, rises and angles accurate, sharp and true. Make corners square, surfaces true and straight in planes.

C. Exposed surfaces shall be free from visible wave, warp, buckle or tool marks. Fold back exposed edges neatly to form a 1/2 inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

D. Secure flashings in place using concealed fasteners. Provide compatible washers to protect surface of sheet metal and to provide a watertight connection.

1. Restrict screw and nail applications to sheet metal having a maximum width of 18 inches.

2. Space fasteners evenly not over 3 inches O.C. and approximately 1/2 inch from edges.

3. Exposed fasteners in locations open to public view not permitted.

E. Install sheet metal flashing and trim with laps, joints and seams that will be permanently watertight and weatherproof. Provide lapped and sealed joints only where indicated and where approved by the Architect.

F. Apply plastic cement compound between metal flashings and felt flashings.

- G. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- H. Seal metal joints watertight.
- I. Solder metal joints for full metal surface contact.
 - 1. Clean and flux metals in seams before soldering.
 - 2. Pre-tin edges of sheet metal before soldering.
 - 3. Solder immediately after application of flux. Slowly solder with well heated soldering irons so as to thoroughly heat the seams and completely sweat the solder through the full width of the seam.
 - 4. After soldering, wash metal clean with neutralizing solution and rinse with water.
- J. Secure all sheet metal components in place using concealed fasteners.
- K. Seal metal joints watertight. Apply plastic cement compound between metal flashings and felt flashings.
- L. Cleats and Starter Strips:
 - 1. Provide cleats for sheet metal where indicated and also where sheet metal is 18 inches and over in width.
 - 2. Unless continuous cleat is indicated, space cleats evenly not over 12 inches oc, unless otherwise indicated.
 - 3. Unless otherwise indicated, cleats shall be not less than 2 inches wide by 3 inches long and of the same material and thickness as the sheet metal being installed.
 - 4. Secure one end of cleat with two fasteners, with cleat folded back over the fastener head. Lock other end into seam.
 - 5. Pre-tin cleats for soldered seams.
- M. Flanges: Bed flanges of sheet metal fabrications in a thick coat of bituminous roofing cement where required for waterproof performance.
- N. Seams:
 - 1. Provide seams with uniform width and height, with no solder showing on the face.
 - 2. Flat-lock seams. Finish not less than 3/4 inch wide.
 - 3. Lap seams. Overlap seams, not soldered, shall be not less than 3 inches wide.
 - 4. Loose-lock expansion seams shall be not less than 3 inches wide. Provide minimum 1 inch movement within the joint. Completely fill the joints with one-component polyurethane sealant applied in a not less than 1/8 inch bed.
 - 5. Standing seams shall be not less than 1 inch high, double locked without solder.
 - 6. Flat seams shall be fabricated in the direction of the flow.

3.03 EXPANSION CONTROL

- A. Provide for expansion and contraction of sheet metal as recommended in SMACNA.
- B. Sheet metal shall accommodate thermal expansion and contraction resulting from an ambient temperature differential of 120 degrees F, which may result in a metal surface temperature range of 180 degrees F, without causing buckling excessive stresses on structural elements or fasteners, stresses on glazing, failure of seals, reduction of performance or other detrimental effects on appearance and performance.
- C. Provide expansion and contraction control joints at not more than 40 ft intervals typically. Provide joints at 10 ft O.C. for copings, gravel stops and other roof edge terminations. Space joints evenly.
- D. Where the distance between the last expansion joint and the end of the continuous run is more than half the required interval, provide an additional joint.
- E. Attach expansion joint units to curb nailers with appropriate fasteners, at maximum spacing of 6 inches oc. Fabricate seams at joints between units with minimum 3 inch overlap, to form a continuous, waterproof system.

3.04 DISSIMILAR MATERIALS

- A. Coat surfaces in contact with mortar, concrete or other cementitious materials with alkali-resistant bituminous coating.
- B. Apply 7.5 mil minimum dry film thick coating of bituminous paint to each contacting face of dissimilar metals, for net 15 mil minimum thickness of coating.
- C. Paint surfaces of wood or other absorptive materials that may become repeatedly wet and in contact with metal with heavy application of bituminous coating.

3.05 FLASHINGS AND COUNTERFLASHINGS

- A. Fit flashings tight in place. Secure flashings in place using concealed fasteners only.
- B. Install reglets true to lines and levels, located minimum 8 inches above cant at high point of roof decks. Install reglets to receive counterflashing in manner and by methods indicated. Seal top of surface-applied reglets with one-component polyurethane sealant.
- C. Install counterflashing in reglets to form tight fit, either by snap-in seal arrangement or by securing in place with lead wedges spaced 18 inches oc maximum. Pack remaining spaces with lead wool.
- D. Insert counterflashing in reglets, extending down vertical surfaces over upturned vertical leg of base flashings not less than 3 inches.
- E. Form counter flashings to required shapes before installation.
- F. Lengths of metal counter flashings shall not exceed 10 ft. Where stepped counter flashings are required, counterflashing may be installed in short lengths of may be of preformed, one-piece type.
- G. Provide factory or shop formed corners not less than 12 inches from the angle.
- H. Provide end laps in counter flashings not less than 3 inches and make laps weathertight with sealant.
- I. Install edge of counter flashings built into masonry or concrete walls not less than 2 inches into wall.
- J. Fold exposed edges of counterflashing 1/2 inch. Install material to provide a spring action against base flashing.

3.06 ROOF PENETRATIONS

- A. Provide metal flashing for all pipes, ducts and conduits projecting through the roof surface and for equipment supports, and similar items supported by or attached to the roof deck as required for a watertight assembly of new roofing materials.
- B. Vent Pipe Flashing:
 - 1. Construct vent pipe flashing sleeve of 2-1/2 lb lead with minimum 4 inch wide flange.
 - 2. Prior to pipe flashing installation, install roofing plies up to the pipe penetration and cut neatly around the opening.
 - 3. Prime pipe flashing flange on both sides with specified primer.
 - 4. Flanged metal shall be primed, allowed to dry, installed on top of finished plies, in a bed of mastic and nailed 4 inches O.C. staggered and stripped-in with two reinforcing felts (the first 4 inches beyond flange, the second 4 inches beyond first) prior to application of surfacing.
 - 5. Mop over to ensure embedment of top surfacing.
 - 6. Crimp top of lead at least one inch into pipe.
 - 7. Provide draw band and sealant at condensate lines, electrical, gas and similar penetrations.

3.07 CLEANING AND PREPARATION FOR FIELD PAINTING

- A. Neutralize excess flux with 5 to 10 percent soda solution and rinse.
- B. Repair or replace damaged and deformed sheet metal.

- C. Wash down exposed surfaces and remove stains, scrap and debris such that sheet metal is ready to receive field painting and related work.
- D. Remove soiling, dust, contamination from steel wool and drilling residue and other scrap and debris.
- E. Scrub surfaces with detergent solution as necessary to remove grease and oil films, handling marks and stains.

3.08 FIELD PAINTING

- A. Field-paint exposed sheet metal for corrosion resistance and decorative purposes.
- B. Paint all exposed sheet metal under provisions of Special Coatings.

3.09 SCHEDULE

- A. Downspouts:
 - 1. Exposed Type: Rectangular shape and size as indicated on Drawings, gage as indicated on the Drawings, or if not indicated, minimum 20 gage galvanized sheet steel with brackets, reinforcing and internal diverters.
 - 2. Fabricate downspouts in approximately 10 ft lengths.
 - 3. Provide end joints telescoped not less than 1/2 inch and with flat lock seams.
 - 4. Provide downspout terminations at grade. Coordinate installation to ensure that water is directed onto concrete paving or concrete splash block. Provide connection to underground storm drain system where indicated on Drawings.
- B. Reglets and Flashings:
 - 1. Provide formed metal spring-lock type reglets with snap-in metal counterflashing, factory fabricated, with a minimum opening of 1/4 inch and a depth of 1-1/4 inches. Reglets shall be surface-mounted, unless shown otherwise on Drawings.
 - 2. Material: Minimum 24 gage galvanized steel.
 - 3. End Laps: Factory-formed, 1 inch at reglets and 3 inches at flashings.
 - 4. Corners: Provide built-up mitered corner pieces for internal and external angles.
 - 5. Wind Clips: Provide sheet metal clips to be secured to wall prior to installing flashing in reglet and to be bent up over bottom edge of flashing.
 - 6. Provide slotted mounting holes spaced 16 inches O.C. for fastening reglet to vertical substrate.
 - 7. Corners: Factory-manufactured, mitered inside and outside corners.
 - 8. Splices: Factory-manufactured, integral component of reglet and flashing system.
- C. Copings and Cap Flashings
 - 1. Fabricate from minimum 20 gage galvanized steel. Provide all coping and caps of the types and shapes indicated on Drawings.
 - 2. Build-in integral expansion joints, allowing for movement of the metal without resulting in distortion of coping or leaks of any kind. Work shall be watertight.
- D. Gutters:
 - 1. Fabricate from minimum 24 gage galvanized sheet metal.
 - 2. Install an expansion joint every 30 linear feet of gutter. Install cover plates over expansion joints.
 - 3. Fabricate gutter without longitudinal seams.
 - 4. Install cradles of 1/4 inch by 1-1/2 inch galvanized steel at 36 inches oc.
 - 5. Gutters shall rest in cradles but shall not be mechanically fastened, to allow for expansion and contraction.
- E. Scuppers:
 - 1. Fabricate from 20 gage galvanized sheet steel.
 - 2. Apply Type 1 sealant, as specified in Section 07900, in all crevices.
- F. Downspouts and Strainers:

1. Fabricate from 24 gage galvanized steel.
2. Strainers shall be 10 gage galvanized steel wire basket type.
3. Provide all anchor clips and straps as required for installation.
4. Install wire basket strainer in all downspouts at gutter level.

G. Drips:

1. Fabricate from 20 gage galvanized sheet steel at heads of all doors in exterior walls where no roof or overhead protection occurs.
2. Extend drips minimum 2 inches beyond jambs.

H. Pitch Pans:

1. Construct pitch pans of minimum 24 gage galvanized sheet metal, 4 inches high, with minimum 4 inch continuous flange.
2. Prime all surfaces with specified primer, including surfaces of pipe or structural element penetrating the roof system.
3. Flanged metal shall be primed, allowed to dry, installed on top of finished plies, in a bed of mastic and nailed 4 inches O.C. staggered and stripped-in with two reinforcing felts (the first 4 inches beyond flange, the second 4 inches beyond first) prior to application of surfacing.
4. Apply membrane system.
5. Fill pitch pan 2/3 depth with non-shrink grout. Fill top 1/3 depth with specified plastic cement, sloped to drain.

H. Miscellaneous:

1. Provide miscellaneous flashings as shown on the Drawings and required to complete sheet metal flashing and trim work under this Section.
2. Provide shop drawings indicating details for approval.
3. Materials: Not less than 24 gage thickness, and as required to produce firm, solid, structurally sound elements, capable of withstanding wear and external forces normally associated with component or assembly.

END OF SECTION

SECTION 09 90 00

INTERIOR, EXTERIOR AND HIGH-PERFORMANCE PAINTS AND COATINGS

PART 2 GENERAL

2.1 SECTION INCLUDES

- A. Interior paint and coating systems (LEED-V4 and V4.1) including surface preparation.
- B. Interior paint and coating commercial systems including surface preparation.
- C. Interior paint and coating healthcare systems including surface preparation.
- D. Interior high-performance paint and coatings systems including surface preparation.
- E. Exterior high-performance paint and coatings systems including surface preparation.
- F. Exterior paint and coating systems including surface preparation.

2.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 04 20 00 - Unit Masonry: Concrete Masonry Units (CMU) and brick.
- C. Section 05 12 16 - Fabricated Fireproofed Steel Columns.
- D. Section 05 50 00 - Metal Fabrications.
- E. Section 06 20 00 - Finish Carpentry.
- F. Section 06 40 00 - Architectural Woodwork.
- G. Section 08 11 13.16 - Custom Hollow Metal Doors and Frames.
- H. Section 09 21 16.23 - Gypsum Board Shaft Wall Assemblies.
- I. Section 23 05 00 - Common Work Results for HVAC.
- J. Section 26 05 00 - Common Work Results for Electrical.

2.3 REFERENCES

- A. Steel Structures Painting Council (SSPC):
 - 1. SSPC-SP 1 - Solvent Cleaning.
 - 2. SSPC-SP 2 - Hand Tool Cleaning.
 - 3. SSPC-SP 3 - Power Tool Cleaning.
 - 4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
 - 5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
 - 6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
 - 7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.

8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
 9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.
 - C. California Department of Public Health (CDPH):
 1. CDPH v1.1-2010 and V1.2-2017
 - D. LEEDv4 EQ Credit: Indoor Environmental Quality-Low Emitting Materials

2.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 1. Product characteristics.
 2. Surface preparation instructions and recommendations.
 3. Primer requirements and finish specification.
 4. Storage and handling requirements and recommendations.
 5. Application methods.
 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
- E. Coating Maintenance Manual: Upon conclusion of project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams, "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
"
- F. Only submit complying products based on project requirements (i.e. LEED). One must also comply with the regulations regarding VOCs (CARB, OTC, SCAQMD, LADCO). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.
- G. USGBC LEED V4 Submittals:
 1. MRc2 Environmental Product Declaration Product Language: Products shall be selected with a preference to products that have product-specific environmental product declaration documentation.
 2. EQc2 Low Emitting Materials: The VOC content of all adhesives, sealants, paints and coatings in this Section shall not exceed the VOC limits established in Division 01 Sustainable Design sections.

2.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Architect.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Compatibility and Adhesion: Check after one week of drying and curing by testing in accordance with ASTM D3359; Adhesion by tape test. If coating system is incompatible, additional surface preparation up to and including complete removal may be required.
 - 5. Do not proceed with remaining work until the Architect approves the mock-up.

2.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental handling.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

2.7 PROJECT CONDITIONS

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

2.8 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 3 PRODUCTS

3.1 MANUFACTURERS

- A. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: request info specifications@sherwin.com; Web: www.swspeccs.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

3.2 APPLICATIONS/SCOPE

- A. Interior Paint and Coating Systems: LEED v4 EQ Credit: Indoor Environmental Quality-Low Emitting Materials.
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Non-vehicular floors.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.
 - 7. Drywall: Drywall board, Gypsum board.
- B. Interior Paint and Coating Commercial Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Non-vehicular floors.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.
 - 7. Drywall: Drywall board, Gypsum board.
- C. Interior Paint and Coating Healthcare Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Non-vehicular floors.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.
 - 7. Drywall: Drywall board, Gypsum board.
- D. High Performance Interior Paint and Coating Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Exposed ceilings.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.

7. Drywall: Drywall board, Gypsum board.
- E. High Performance Exterior Paint and Coating Systems:
1. Concrete: Cementitious siding, flexboard, transite, and shingles; non-roof.
 2. Masonry: Concrete masonry units, cinder or concrete block.
 3. Metal: Aluminum, galvanized steel.
 4. Metal: Miscellaneous iron, ornamental iron, ferrous metal.
 5. Wood: Siding, trim, shutters, sash, and miscellaneous hardboard.
- F. Exterior Paint and Coating Systems:
1. Concrete: Cementitious siding, flexboard, transite, and shingles; non-roof.
 2. Masonry: Concrete masonry units, cinder or concrete block.
 3. Concrete: Non-vehicular concrete floors, patios, porches, steps and platforms.
 4. Metal: Aluminum, galvanized steel.
 5. Metal: Miscellaneous iron, ornamental iron, ferrous metal.
 6. Wood: Non-vehicular floors, and platforms.
 7. Wood: Siding, trim, shutters, sash, and miscellaneous hardboard.
 8. Architectural PVC, plastic, fiberglass.
 9. Drywall: Gypsum board, and exterior drywall.
 10. Vinyl: Siding, EIFS, synthetic stucco.

3.3 PAINT MATERIALS - GENERAL

- A. Paints and Coatings:
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
 2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufacturer's product instructions for optimal color conformance.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- D. Color: Refer to Finish Schedule for paint colors, and as selected.
- E. LEED Requirements: LEED V4 and V4.1 EQ Credit: Indoor Environmental Quality-Low Emitting Materials.

3.4 INTERIOR PAINT AND COATING SYSTEMS (LEED-V4 AND V4.1 NC/CI/CS COMPLIANT)

- A. Concrete: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.

- 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
- c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
- d. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series.
 - 3) 3rd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series (4 mils wet, 1.7 mils dry per coat.).
- e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
- f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
- g. Eg-Shel / Satin Finish: Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin, A87 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin, A87 Series. (4 mils wet, 1.6 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- i. Low Sheen Finish: High Performance (HP) Upgrade.

- 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- k. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat, A86 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5 mils wet, 2.0 mils dry per coat).
- B. Concrete: Ceilings, Poured Concrete, Precast Concrete, Cement Board, Cast-In-Place including Plaster Ceilings.
 1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series

- (5.8 mils wet, 2.3 mils dry per coat).
- b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6 mils wet, 1.7 mils dry per coat).
- C. Masonry; CMU: - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted.
- 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - d. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Semi-Gloss, A88 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Semi-Gloss, A88 Series (4 mils wet, 1.7 mils dry per coat).
 - e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).

- 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
- 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
- g. Eg-Shel / Satin Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin A87 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin A87 Series (4 mils wet, 1.6 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- i. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- k. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat A86 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat A86 Series (4 mils wet, 1.8 mils dry per coat).
2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.

- 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W150 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- D. Metal: Aluminum and Galvanized.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-

- Series (4 mils wet, 1.5 mils dry per coat).
- c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
3. Urethane System; Waterbased:
- a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 series (4.0 mils wet, 2.0 mils dry per coat).
 - b. Gloss Finish: Single Component
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6-12 mils wet, 1.9-3.8 mils dry per coat).
- E. Metal: Galvanized; Ceilings, Duct work.
- 1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- F. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
- 1. Latex Systems:
 - a. Gloss Finish High Performance:

- 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
- 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
- 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
- b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
- c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
3. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 Series.

- 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 Series (4.0 mils wet, 2 mils dry per coat).
- b. Gloss Finish: Single Component
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6-12 mils wet, 1.9-3.8 mils dry per coat).
4. Dryfall Waterborne Topcoat:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- G. Wood: Walls, Ceilings, Doors, and Trim.
 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Multi-Purpose Int./Ext Primer/Sealer, B51-450 (4 mils wet, 1.44 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi - Gloss Finish:
 - 1) 1st Coat: S-W Multi-Purpose Int./Ext Primer/Sealer, B51-450 (4 mils wet, 1.44 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Multi-Purpose Int./Ext Primer/Sealer, B51-450 (4 mils wet, 1.44 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).

- d. Flat Finish:
 - 1) 1st Coat: S-W Multi-Purpose Int./Ext Primer/Sealer, B51-450 (4 mils wet, 1.44 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series (4 mils wet, 1.6 mils dry per coat).
- H. Drywall: Walls, Ceilings, Gypsum Board and similar items.
 - 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - c. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: ProMar 200 Zero VOC Interior Latex Primer, B28W2600. (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Semi-Gloss A88 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Semi-Gloss A88 Series (4 mils wet, 1.7 mils dry per coat).
 - d. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - e. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel / Satin Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin A87 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Satin A87 Series.(4 mils wet, 1.6 mils dry per coat).

- g. Low Sheen Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- h. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- i. Flat Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat, A86 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
- 2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600

- (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- I. Concrete: Floors, non-vehicular.
 - 1. Epoxy Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ArmorSeal 8100 B70-8100 Series.
 - 2) 2nd Coat: S-W ArmorSeal 8100 B70-8100 Series (5-12 mils wet, 2-5 mils dry).
 - b. Satin Finish:
 - 1) 1st Coat: S-W ArmorSeal 8100 B70-8160 Series.
 - 2) 2nd Coat: S-W ArmorSeal 8100 B70-8160 Series (5-12 mils wet, 2-5 mils dry).

3.5 INTERIOR PAINT AND COATING COMMERCIAL SYSTEMS

- A. Concrete: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings.
 - 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - d. Semi- Gloss Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry)
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50

- (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
- f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
- g. Eg-Shel/Satin Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- i. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- k. Flat Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.

- 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4 mils wet, 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Epoxy Systems; Waterbased:
- a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5 mils wet, 2.0 mils dry per coat).
- B. Concrete Ceilings: Poured Concrete, Precast Concrete, Cement Board, and Cast-In-Place including Plaster Ceilings.
1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182

- Series.
- 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6 mils wet, 1.9 mils dry per coat).
- c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6 mils wet, 1.7 mils dry per coat).
- C. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, and Fluted.
 - 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - d. Semi- Gloss Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
 - g. Eg-Shel/Satin Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-

- Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
 - i. Low Sheen Finish: High Performance (HP) Upgrade
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - j. Flat Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
 - k. Flat Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
2. Alkyd Systems; Waterbased:
- a. Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Epoxy Systems; Waterbased:
- a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:

- 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- D. Metal: Aluminum and Galvanized.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.

- 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 series (4.0 mils wet, 2.0 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane

Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).

- E. Metal; Galvanized: Ceilings and Duct work.
 - 1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- F. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
 - 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 - 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
- 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W -W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 Series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 Series (4.0 mils wet, 2 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).
5. Dryfall Waterborne Topcoat:
- a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- G. Wood: Walls, ceilings, doors, and trim.
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi - Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series (4 mils wet, 1.3 mils dry per coat).
 - c. Semi - Gloss Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - d. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).

- 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series.
- 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series (4 mils wet, 1.2 mils dry per coat).
- e. Eg-Shel / Satin Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry)
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- f. Flat Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series (4 mils wet, 1.6 mils dry per coat).
- g. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series.
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series: 4 mils wet, 1.4 mils dry per coat.
2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Stain and Varnish System:
 - a. Gloss Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils

- wet, 1.0 mil dry per coat).
 - b. Satin Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
- H. Drywall: Walls, Ceilings, Gypsum Board and similar items.
 - 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - c. Semi-Gloss Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - d. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - e. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series.
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).

- g. Low Sheen Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- h. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- i. Flat Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600

- (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- I. Concrete: Floors, non-vehicular.
 - 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series.
 - 2) 2nd Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series. (3.5 mils wet, 1.5 mils dry, per coat).
 - b. Satin Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4 mils wet, 1.5 mils dry per coat).

3.6 INTERIOR PAINT AND COATING HEALTHCARE SYSTEMS

- A. Concrete: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings.
 - 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Semi-Gloss, A88 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Semi-Gloss, A88 Series (4 mils wet, 1.7 mils dry per coat).
 - c. Semi-Gloss Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series: 4 mils wet, 1.2 mils dry per coat.
 - d. Eg-Shel / Satin Finish: Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Satin, A87 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Satin, A87 Series (4 mils wet, 1.6 mils dry per coat).
 - e. Eg-Shel/ Satin Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50

- (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Flat, A86 Series.
 - 3) 3rd Coat: S-W Superpaint Air Purifying Technology Interior Acrylic Series Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
 - g. Flat Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W ProIndustrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4 mils wet, 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-

- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5 mils wet, 2.0 mils dry per coat).
- B. Concrete: Ceilings, Poured Concrete, Precast Concrete, Cement Board, Cast-In-Place including Plaster Ceilings.
- 1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6 mils wet, 1.7 mils dry per coat).
- C. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, and Fluted.
- 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series.
 - 3) 3rd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series: (4 mils wet, 1.7 mils dry per coat.)
 - c. Semi-Gloss Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-

- Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - d. Eg-Shel / Satin Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Satin, A87 Series:.
 - 3) 3rd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Satin, A87 Series: (4 mils wet, 1.6 mils dry per coat).
 - e. Eg-Shel/ Satin Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Flat, A86 Series.
 - 3) 3rd Coat: S-W SuperPaint Air Purifying Technology, Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
- 2. Alkyd Systems; Waterbased:
 - a. Flat Finish Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
 - b. Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - d. Low Sheen Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.

- 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- D. Metal: Aluminum, Galvanized.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310

- Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- 4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 series (4.0 mils wet, 2.0 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).
- E. Metal: Galvanized; Ceilings, Duct work.
1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- F. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).

- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W -W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
 - 4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 Series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 Series (4.0 mils wet, 2 mils dry per coat).

- b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).
 - 5. Dryfall Waterborne Topcoat:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- G. Wood: Walls, Ceilings, Doors, and Trim.
 - 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi-Gloss Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - c. Semi - Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series (4 mils wet, 1.3 mils dry per coat).

- d. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series.
 - 3) 3rd Coat: S-W SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series (4 mils wet, 1.8 mils dry per coat).
- e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series (4 mils wet, 1.2 mils dry per coat).
- f. Eg-Shel / Satin Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- g. Eg-Shel/ Satin Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Satin, A87 Series.
 - 3) 3rd Coat: S-W SuperPaint Air Purifying Technology, Satin, A87 Series (4 mils wet, 1.8 mils dry per coat).
- h. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Flat, A86 Series.
 - 3) 3rd Coat: S-W SuperPaint Air Purifying Technology, Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
- i. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils

- wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - 3. Stain and Varnish System:
 - a. Gloss Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
 - b. Satin Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
- H. Drywall: Walls, Ceilings, Gypsum Board and similar items.
 - 1. Latex Systems:
 - a. Semi-Gloss Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series.
 - 3) 3rd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Semi-Gloss, A88 Series: (4 mils wet, 1.7 mils dry per coat.)
 - b. Semi-Gloss Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series: (4 mils wet, 1.2 mils dry per coat).
 - c. Eg-Shel / Satin Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Satin, A87 Series:.
 - 3) 3rd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Satin, A87 Series: (4 mils wet, 1.6 mils dry per coat).
 - d. Eg-Shel / Satin Finish Microbicidal Latex Finish System: With topcoat EPA registered No. 64695-1:

- 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
- 2) 2nd Coat: S-W SuperPaint Interior Latex Satin with Sanitizing Technology, A87W00001.
- 3) 3rd Coat: S-W SuperPaint Interior Latex Satin with Sanitizing Technology, A87W00001 (4 mils wet, 1.7 mils dry per coat).
- e. Eg-Shel Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- f. Flat Finish Formaldehyde and Odor Reducing:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: Sherwin-Williams SuperPaint Air Purifying Technology, Flat, A86 Series.
 - 3) 3rd Coat: S-W SuperPaint Air Purifying Technology, Flat, A86 Series (4 mils wet, 1.8 mils dry per coat).
- g. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600

- (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- I. Concrete: Floors, non-vehicular:
 - 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series.
 - 2) 2nd Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series. (3.5 mils wet, 1.5 mils dry, per coat).
 - b. Satin Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4 mils wet, 1.5 mils dry per coat).

3.7 HIGH PERFORMANCE INTERIOR PAINT AND COATING SYSTEMS

- A. Concrete; Smooth: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, and Cast-In-Place.
 - 1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - 2. Epoxy Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series.
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet. 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50

- Series (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 - 4. Urethane Systems: Solvent Base Finish.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - 5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- B. Concrete: Exposed Ceilings.
 - 1. MultiSurface Acrylic Coating:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.7-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- C. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, and Stucco.

1. Epoxy System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils wet).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-13.0 mils wet, 10.0-18.0 mils wet).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
2. Epoxy Systems; Solvent Base Finish:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 3) 3rd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
4. Urethane Systems; Solvent Base Finish:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:

- 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
5. Polysiloxane System; Solvent Based:
- a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: : S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- D. Non-Ferrous: Galvanized and Aluminum.
1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10 mils wet, 2.0-4.0 mils dry per coat).
 2. Epoxy Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series.
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
- 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
4. Urethane Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
6. Fluoropolymer System: Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
7. Multi-Surface Acrylic Coating: Exposed Ceilings.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.7-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570

- Series.
- 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- E. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 2. Epoxy System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series. (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series. (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 3. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series. (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series. (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 4. Urethane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).

- 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - 5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
 - 6. Fluoropolymer System: Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- F. Metal Exposed Ceilings: Structural Steel, Joists, Trusses, and Beams.
- 1. MultiSurface Acrylic Coating:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- G. Wood: Doors, Trim, Partitions, and Frames.
- 1. Epoxy System; Waterbased:
 - a. Gloss Finish:

- 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
2. Epoxy System; Solvent Based:
- a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - 3) 3rd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
- H. Drywall: Walls, Ceilings, and Gypsum Board.
1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 2. Epoxy System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:

- 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series
 - 3) 3rd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 4. Urethane Systems; Solvent Base:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
- I. Plaster; Walls, Ceilings:
1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).

3.8 HIGH PERFORMANCE EXTERIOR PAINT AND COATING SYSTEMS

- A. Concrete; Smooth: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, and Cast-In-Place.
1. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 2. Urethane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet, 2.1-3.2 mils dry.)
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet, 2.1-3.2 mils dry.
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 3. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- B. Masonry; CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, and Stucco.
1. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).

- b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 - 2. Urethane Systems; Solvent Base Finish.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - 3. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- C. Non-Ferrous Metal: Galvanized and Aluminum.
 - 1. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish; Single Component:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 - 2. Urethane Systems; Solvent Base:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.

- 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
3. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
4. Fluoropolymer System (Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system):
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- D. Metal - (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, Ferrous Metal).
 1. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series. (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series. (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 2. Urethane System; Solvent Base:

- a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - 3. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
 - 4. Fluoropolymer System: Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet. 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series (5.0-7.0 mils wet. 4.0-6.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet. 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series (5.0-7.0 mils wet. 4.0-6.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet. 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series (5.0-7.0 mils wet. 4.0-6.0 mils dry per coat).
- E. Wood: Doors, Trim, Partitions, and Frames.
- 1. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series. (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).

3.9 EXTERIOR PAINT AND COATING SYSTEMS

- A. Concrete: Cementitious Siding, Flexboard, Transite Board, Non-Roof Shingles, Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement.
 - 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series. (6.0-12.0 mils wet, 2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - 2. Elastomeric System: Not including cementitious siding, Flexboard, Transite board or shingles (non-roof).
 - a. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series.
 - 3) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - b. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, A24W00200 (16.0 mils wet, 8.8

- 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
- 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
- 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series. (6.0-12.0 mils wet, 2.0-4.0 mils dry per coat).
- c. Satin Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
- d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
- e. Flat Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
- f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
2. Elastomeric System:
 - a. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, A24W00200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series.
 - 3) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - b. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series.
 - 3) 3rd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series (10.0-14.0 mils wet, 4.0-6.0 mils dry per coat).
3. Textured Elastomeric System:
 - a. Textured Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50

- Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - 3) 3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, CF15W50 Series (20 mils wet, 9.4 mils dry per coat).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - 4. Textured Masonry System:
 - a. Textured Finish; Waterbased:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Conflex UltraCrete Acrylic Textured Masonry Topcoat CF18W800 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - b. Textured Finish; Solvent Based:
 - 1) 1st Coat: S-W UltraCrete Smooth Waterproofing Masonry Coating, B46 Series (100-160 sq ft/gal).
 - 2) 2nd Coat: S-W Conflex UltraCrete Solvent Textured Waterproofing Masonry Coating, CF18W850 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - c. Smooth Finish; Waterbased:
 - 1) 1st Coat: S-W Loxon XP, LX11W50 Series.
 - 2) 2nd Coat: S-W Loxon XP, LX11W50 Series (14.0-18.0 mils wet; 6.4-8.3 mils dry per coat).
 - 5. Stain System:
 - a. Solid Color Waterborne Finish:
 - 1) 1st Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series.
 - 2) 2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series (50-250 sq/ft gal).
 - 6. Clear Water Repellant:
 - a. Clear Finish:
 - 1) 1st Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7.
 - 2) 2nd Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7 (50-200 sq ft/ gal).
- C. Concrete: Non-Vehicular Floors, Patios, Porches, Steps and Platforms.
 - 1. Acrylic System Water-Based:
 - a. Floor Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4.0 mils wet, 1.5 mils dry per coat).
 - b. Floor Finish:
 - 1) 1st Coat: S-W ConFlex Flexible Concrete Waterproofer-Smooth, CF14W50 Series.
 - 2) 2nd Coat: S-W Conflex Flexible Concrete Waterproofer-Smooth, CF14W50 Series (10.0-12.0 mils wet per coat).
- D. Metal: Aluminum, Galvanized.

1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 - d. Flat Finish:
 - 1) 1st Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- E. Metal: Miscellaneous. Iron, Ornamental Iron, Structural Iron and Steel, Ferrous Metal.
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- F. Wood: Decks, Exterior including pressure treated lumber, non-vehicular Floors, and Platforms.
 1. Acrylic Water-Based Floor System:
 - a. Floor Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4.0 mils wet; 1.5 mils dry per coat).
 2. Stain Systems:
 - a. Solid Color Acrylic Latex:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Solid Color Deck Stain, SD7-Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Solid Color Deck Stain, SD7-Series (200-400 sq ft/gal).
 - b. Semi-Solid Color Acrylic Latex:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Color Deck Stain, SD5-Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Color Deck Stain, SD5-Series (100-350 sq ft/gal).
 - c. Semi-Transparent Stain:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T Series (100 - 350 sq ft/gal).
 - d. Clear Stain:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Clear Sealer,

- SD1T00100.
- 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Clear Sealer, SD1T00100, (150 - 300 sq ft/gal).
- G. Wood: Siding, Trim, Shutters, Sashes, and Hardboard-Bare/Primed.
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 2. Stain; Water Reducible Systems:
 - a. Semi-Transparent:
 - 1) 1st Coat: S-W WoodScapes Exterior Polyurethane Semi-Transparent Stain, A15T00005.
 - 2) 2nd Coat: S-W WoodScapes Exterior Polyurethane Semi-Transparent Stain, A15T00005 (100-350 sq ft/gal).
 - b. Solid Color:

- 1) 1st Coat: S-W WoodScapes Exterior Acrylic Solid Color Stain, A15 Series.
 - 2) 2nd Coat: S-W WoodScapes Exterior Acrylic Solid Color Stain, A15 Series (200-400 sq ft/gal).
- H. Architectural PVC, Plastic, and Fiberglass:
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Extreme Bond Bonding Primer, B51W00150 (3.1 mils wet, 0.9 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Extreme Bond Bonding Primer, B51W00150 (3.1 mils wet, 0.9 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Extreme Bond Bonding Primer, B51W00150 (3.1 mils wet, 0.9 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Flat Finish:
 - 1) 1st Coat: S-W Extreme Bond Bonding Primer, B51W00150 (3.1 mils wet, 0.9 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
- I. Drywall: Gypsum Board and Exterior Drywall.
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).

PART 4 EXECUTION

4.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

4.2 SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
 - 1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
 - 2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
 - 3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
 - 4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.
- B. Aluminum: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
- C. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.
- D. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all

types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

- E. Cement Composition Siding/Panels: Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments.
- F. Copper and Stainless Steel: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.
- G. Exterior Composition Board (Hardboard): Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard) must be cleaned thoroughly and primed with an alkyd primer.
- H. Drywall - Exterior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.
- I. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
- J. Galvanized Metal: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.
- K. Plaster: Must be allowed to dry thoroughly for at least 30 days before painting unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.
- L. Steel: Structural, Plate, And Similar Items: Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
 - 1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.

2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
4. White Metal Blast Cleaning, SSPC-SP5 or NACE 1: A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
5. Commercial Blast Cleaning, SSPC-SP6 or NACE 3: A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
6. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4: A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.
7. Power Tool Cleaning to Bare Metal, SSPC-SP11: Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.
8. Near-White Blast Cleaning, SSPC-SP10 or NACE 2: A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
9. High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials: SSPC-SP12 or NACE 5: This standard provides requirements for the use of high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness. This standard is limited in scope to the use of water only without the addition of solid particles in the stream.
10. Water Blasting, SSPC-SP12/NACE No. 5: Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow

of 4 to 14 gallons per minute.

- M. Vinyl Siding, Architectural Plastics, EIFS and Fiberglass: Clean vinyl siding thoroughly by scrubbing with a warm, soapy water solution. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color unless the paint system features Sherwin-Williams VinylSafe technology. Painting with darker colors that are not Sherwin-Williams VinylSafe may cause siding to warp. Follow all painting guidelines of the vinyl manufacturer when painting. Only paint properly installed vinyl siding. Deviating from the manufacturer's painting guidelines may cause the warranty to be voided.
- N. Stucco: Must be clean and free of any loose stucco. If recommended procedures for applying stucco are followed, and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments such as Loxon.
- O. Wood: Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

4.3 INSTALLATION

- A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

4.4 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

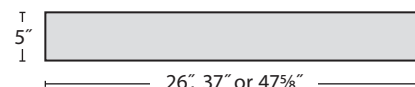
END OF SECTION

Interior Lighting Specifications
Prudential Lighting or Approved Equal



Type:

Job:



LUMEN OUTPUT: Direct (D1)

		LO	MO	SO	HO
O-20:	Lumens	1050	1500	2100	2600
	Watts	20	30	47	63
O-30:	Lumens	1650	2140	3400	3850
	Watts	30	41	75	89
O-40:	Lumens	2200	2800	4600	5100
	Watts	40	53	100	116



CLICK
HERE

Direct/Indirect (D9)

		LO	MO	SO	HO
O-20:	Lumens	1550	2300	3400	4200
	Watts	27	40	63	84
O-30:	Lumens	2200	3000	5500	6500
	Watts	42	57	105	125
O-40:	Lumens	2650	3550	6750	7250
	Watts	51	68	129	149

This is O.

It's essentially the P4000's (way more fun) twin. We've reinterpreted the popular original into a playful ring of light. It's a donut-shaped O — as in the shape your mouth makes when you see it.



Lumen output may vary +/- 5%

See LED Details PDF for more info

SE-RIES	LED COLOR	OUTPUT	SHIELD-ING	COLOR/FINISH	DISTRI-BUTION	CIRCUIT-ING	VOLT-AGE	MOUNTING	CEILING SYSTEMS	CONTROLS	DRIVERS	OPTIONS
O-20 2' Dia. O-30 3' Dia. O-40 4' Dia.	TU Tu Hue Tunable White (2700K to 6500K)	LO Low MO Medium SO Standard HO High	FWA Flat White Acrylic Lens	TMW Textured Matte White YGW Gloss White (Standard) Y____ Premium Color CC Custom Color NOTE: All canopies are painted the same color as the fixture unless specified otherwis	D1 Direct Solid Top NOTE: Only 1 row of LEDs D9 Semi-Direct NOTE: ~17% Uplight, 83% Down. To specify more or less Uplight, see Output NOTE Recom- mended distance to hang from ceiling to top of fixture to avoid hotspots; O-20: 18", O-30: 24", O-40: 30"	SC Single Circuit DC Dual Circuit (Two feeds required, D9 only)	UNV (120- 277)	SUR Surface Mount (1" Standoff from ceiling) CA48", 96" or 144" Aircraft Cable (Adjustable) 3RPM48", 96" or 144" Round Cast Aluminum Canopy (Min from fixture to ceiling 2': 10", 3': 16", 4'; 20") 3SPM48", 96" or 144" Square Cast Aluminum Canopy (Min from fixture to ceiling 2': 10", 3': 16", 4'; 20") MPCA48", 96" or 144" Monopoint Mounting (18" min from fixture to ceiling) SSC____ Top-Swivel Stem Mount (Specify length)	X1 T-Bar 1 5/16" or 5/8" Exposed (Standard) Consult factory for 5/16" Tegular X3 Hard Ceiling X6 Slot Grid or Interlude	O-10V Uses E10V Driver DALI Uses EDALI Driver DMX Uses EDMX Driver nLight Uses EDALI Driver	E10V .1% O-10V DUALdrive, EldoLED (Dim to Dark [Off] Tunable White) EDALI DALI DUALdrive, EldoLED (Dim to Dark [Off] Tunable White) EDMX DMX POWERdrive, EldoLED (Dim to Dark [Off] Tunable White)	EMHE CA T20 Emergency Battery (Remote only; 500 delivered lumens; CA Title 20 compliant) EM Emer- gency Battery (3-4': 400 delivered lumens) PruTune Wall Device (EDALI driver only, one PruTune device for each zone) ETRAN 0-10V to DALI Eldo Translator



D1 — DIRECT

High Output:

O-30-LED4-HO-D1

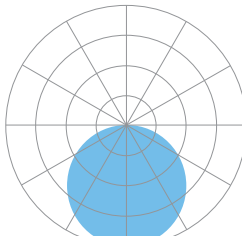
5290 Delivered Lumens

97 Watts

55 lm/w

4000 CCT

Test
#103619833LAX-001



Zonal Lumen Summary:

0-90 = 100%

1848

Vertical Angle	0	25	45	65	90
0	1848	1848	1848	1848	1848
5	1837	1838	1838	1838	1840
15	1766	1763	1765	1769	1772
25	1070	1070	1070	1070	1070
35	937	937	937	937	937
45	1437	1434	1438	1445	1452
55	927	926	935	944	955
65	639	640	648	657	667
75	354	352	362	371	380
85	90	87	92	99	105
90	0	0	0	0	0

D9 — SEMI-DIRECT

Standard Output:

O-20-TW-SO-D9

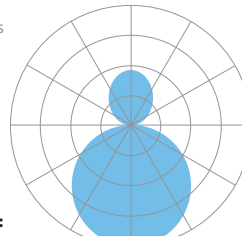
3184 Delivered Lumens

58 Watts

55 lm/w

4000 CCT

Test #L041502002



Zonal Lumen Summary:

0-90 = 61%

90-180 = 39%

635

Vertical Angle	0	25	45	65	90
0	685	685	685	685	685
5	682	682	682	682	682
15	654	654	654	654	654
25	816	816	817	817	817
35	604	604	604	603	603
45	446	446	445	444	443
55	347	346	345	344	344
65	241	241	240	239	239
75	172	172	172	172	172
85	39	39	39	38	39
90	0	0	0	0	0
95	15	15	15	15	16
115	143	144	143	141	141
125	216	217	215	213	212
135	290	290	289	287	286
145	360	360	359	357	356
155	422	422	421	418	416
165	468	469	468	464	463
175	486	486	484	480	479
180	496	496	496	496	496

LUMEN MAINTENANCE

L70 (LO, MO, SO) — 100,000+ Hours

L70 (HO) — 90,000+ Hours

LED SYSTEM

LED modules and drivers are field replaceable.

CONTROLS

Tunable White can be controlled via the following methods:

- **0-10V:** Control brightness and color independently via 2 dimmers.
- **DALI:** For more precise control. Prudential's PruTune wall control includes a color wheel, dimming indicator and six preset color options (2700K, 3000K, 3500K, 4000K, 5000K & 6500K).
- **nLight*:** Similar to DALI but with easier installation.
- **DMX*:** Recommended for dynamic lighting.

* Both nLight and DMX have Plug-n-Play connectors installed on the fixture

NOTE: Independent control of Up and Down light (dual circuit) requires doubling the above controls for 0-10V and DALI (Four dimmers or two PruTune, or similar, devices). Dual circuit on DMX and nLight is handled via addressing of connected components. Mixing control options is not recommended.

LABELS

CSA and ETL damp labeled and I.B.E.W. manufactured.

CONSTRUCTION

Housing

Extruded aluminum, rolled and welded, >25% PC recycled, 100% recyclable

Lens

Flat acrylic, 100% recyclable.

Weights

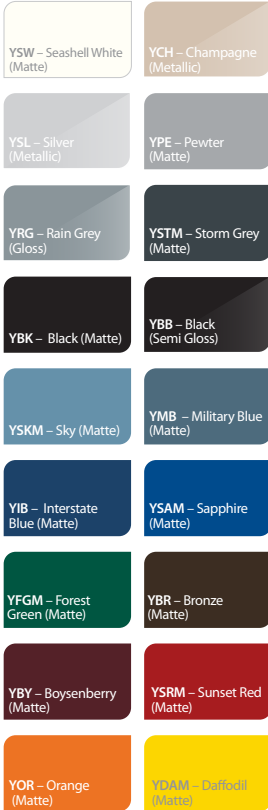
O-20: 17lbs O-30: 27lbs O-40: 34lbs

MOUNTING

Surface or suspended by aircraft cables, top-swivel stems.

WARRANTY

Single-source, 5 year limited warranty covers standard components and construction. See warranty for more details.

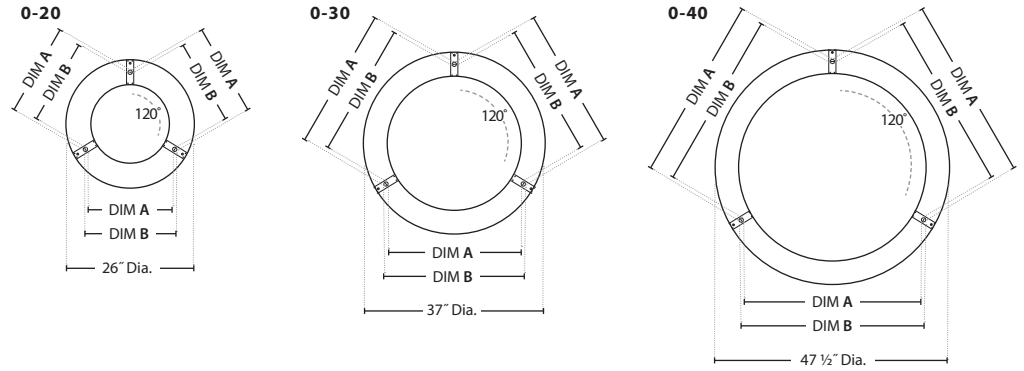


Choose from one of our Premium Colors with no set-up fee.

For paint chip samples, please email: info@prulite.com



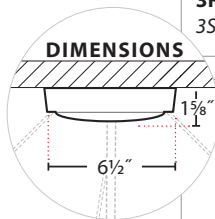
MOUNTING LOCATIONS



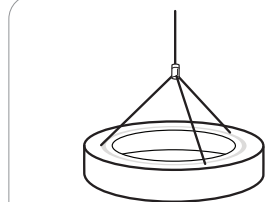
MOUNTING DIMENSIONS

SIZE	DIM. A (SUR / STEM)	DIM. B (CABLE)
"O"-20	18 1/8"	17"
"O"-30	27 23/32"	29 9/16"
"O"-40	36 15/16"	35 25/32"

MOUNTING OPTIONS



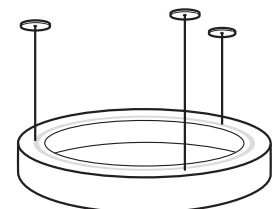
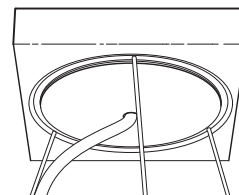
3RPM48", 96" or 144": Round Cast Aluminum Canopy
3SPM: 2', 3', 4' (3 Cables)



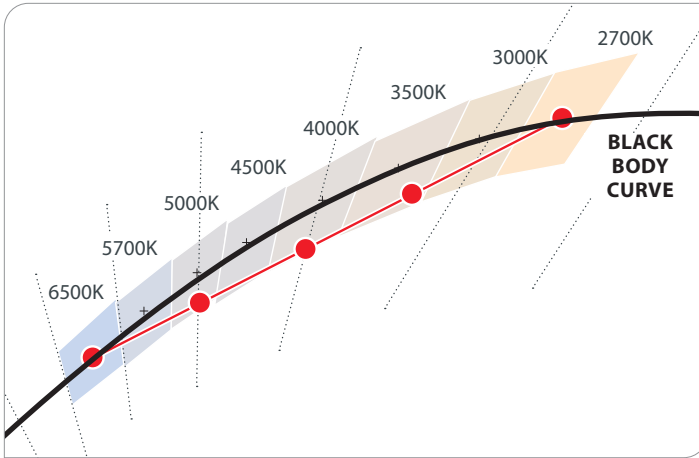
MPCA: 3 Cables min
18" from Ceiling



3SPM48", 96" or 144": Round Cast Aluminum Canopy
3SPM: 2', 3', 4' (3 Cables)



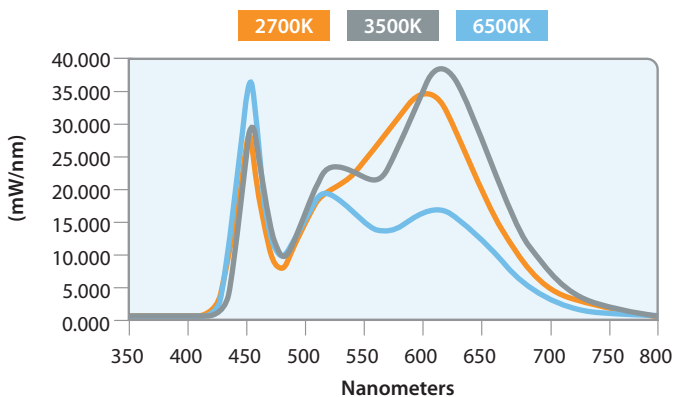
CA or SSC: (3) 5" Canopies



TARGETED CCT	TESTED CCT	LUMEN OUTPUT	TOTAL POWER (W)	CRI	R9	DUV
6500	6100	+ 2%	- 11%	96	96	0
5000	4675	STATED LUMENS ON LUMEN CHART	- 14%	95	96	- 0.005
4000	3675	+ 2%	- 13%	94	85	- 0.007
3500	3225	+ 1%	- 12%	93	74	- 0.006
3000	2875	STATED LUMENS ON LUMEN CHART	- 6%	93	57	- 0.004
2700	2650	- 2%	STATED WATTS ON LUMEN CHART	91	46	- 0.002

LIGHT OUTPUT AND COLOR

- Actual CCT is below targeted, especially in cooler range as a function of LED chip
- Light output is held constant over full color range and output matches static white PRU fixtures for easy specification (Low, Medium, Standard and High output), see spec sheets for delivered lumens for individual fixtures (varies). Lumen output may vary +/- 5%



ELECTRICAL

0-10V:

- Universal Input Voltage (120-277VAC)
- 0.1% Dimming
- Controlled by two individual 0-10V signals, one for light output (to 1%), the other for adjusting CCT (2700K-6500K)
- 50,000 hours rated life at 70°C max driver case temperature
- 87% efficiency — THD <20% — PF >0.9

DALI:

- Universal Input Voltage (120-277VAC)
- DALI control system (by others) or PRUTune DALI wall device to control color temperature and brightness

NOTE: PRUTune wall device only requires Purple & Grey wires common to 0-10v wiring, ideal for control of individual spaces

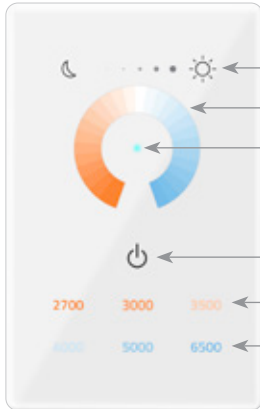
- 50,000 hours rated life at 70°C max driver case temperature
- 87% efficiency — THD <20% — PF >0.9

DMX:

- Universal Input Voltage (120-277VAC)
- DMX control system (by others) for control of CCT and brightness
- DMX drivers have multiple output channels that can be independently addressed at the factory
- 50,000 hours rated life at 70°C max driver case temperature
- 86% efficiency — THD <20% — PF >0.9



PRUTUNE WALL DEVICE



BRIGHTNESS: 0.1%-100%

COLOR WHEEL

POWER INDICATOR

RED : OFF

BLUE : ON

ON / OFF

PRESET COLOR TEMPERATURES

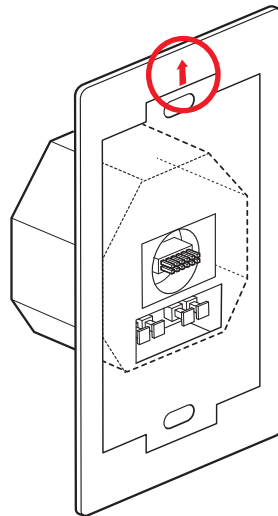
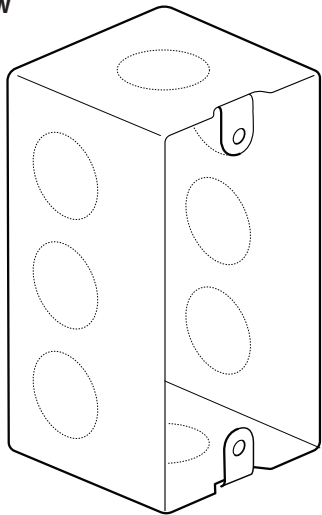
PRUTune DALI device includes:

- Easy-to-understand user control with intuitive design
- Out-of-the-box set-up, no commissioning needed
- Color wheel for color change from 2700K to 6500K
- Dimming to 0.1% (255 Steps)
- Six preset colors (2700K, 3000K, 3500K, 4000K, 5000K, 6500K)
- Must use DALI driver, consult factory to control non-Prudential Ltg Tunable White fixtures
- Control one (1) zone - up to 30 drivers
(Consult factory for fixture quantity dependant upon fixture type, size & output)

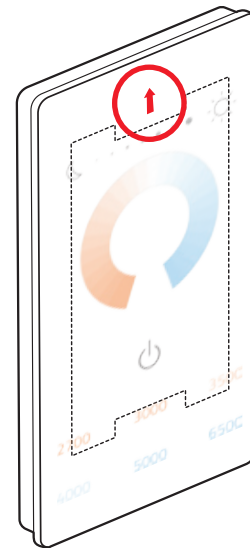
PRUTune + EMHE: — Prutune does not have memory

- Once normal power is restored, the controller sends a signal of 100% intensity and 6500K CCT

EXPLODED VIEW



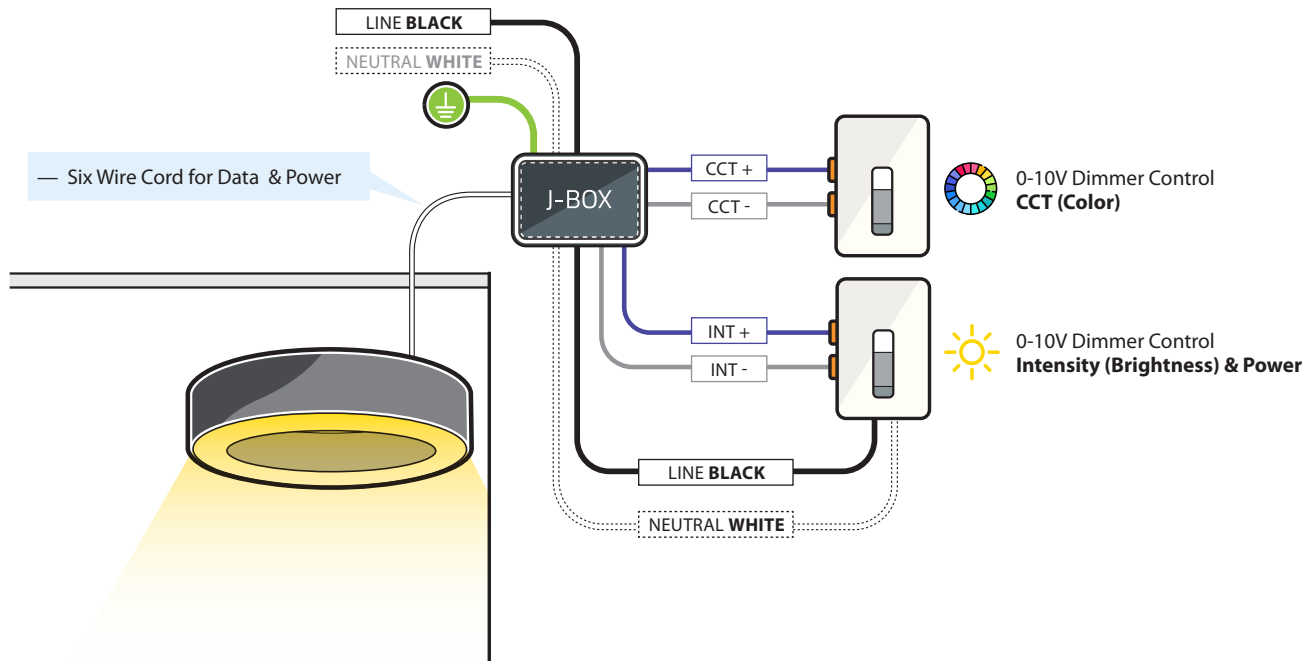
Ensure arrows are aligned when assembling 'Pru wall device'





D1/D9 – SC – 0-10v

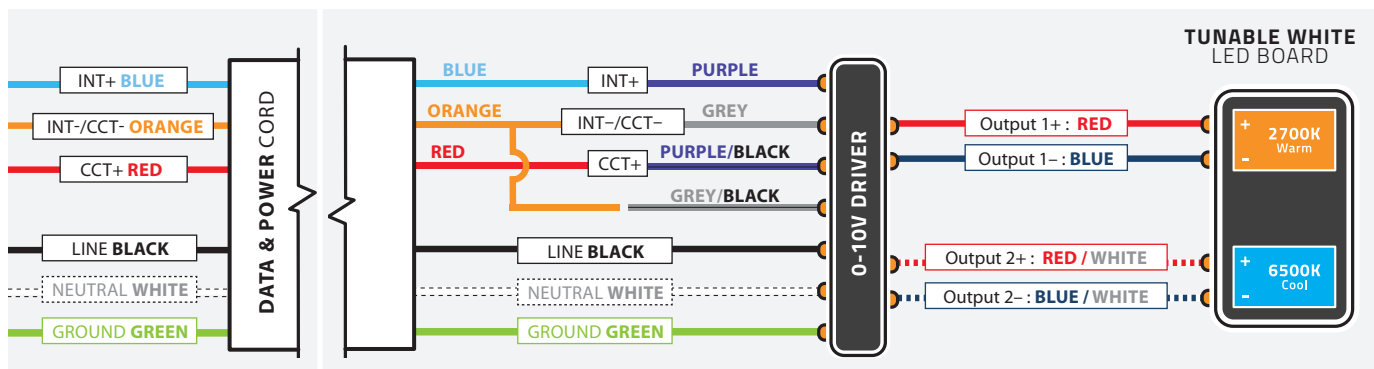
Single Control for Color, Single Control for Intensity



- Cords (Power and Data) between fixture and junction box are supplied by Prudential, but ship separately.
Wire colors shown below are representative of the wires inside the fixture.
- Junction box wiring by others. Wire colors shown are for illustration purposes only.

J-BOX WIRING DETAIL:

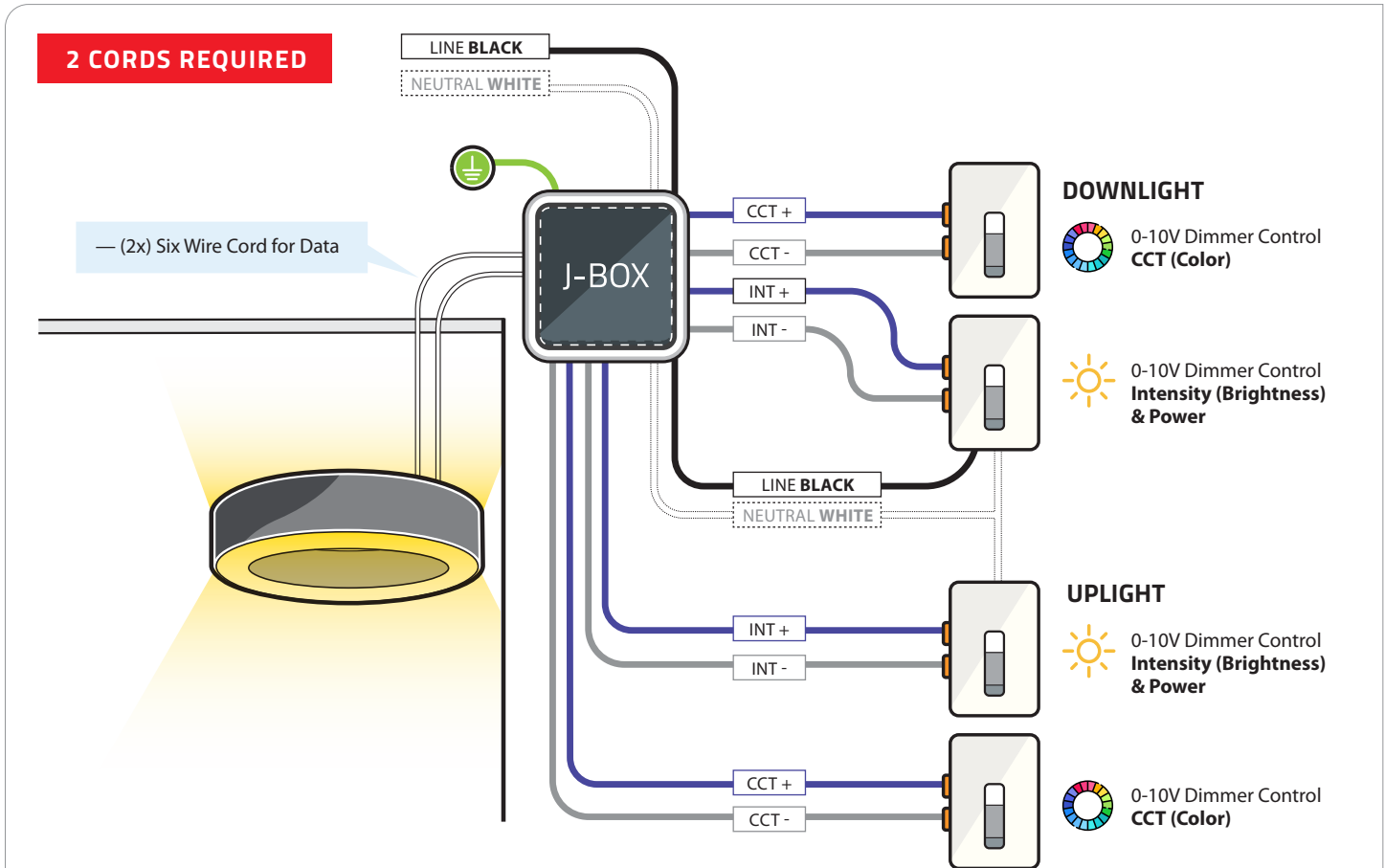
LIGHTING FIXTURE INTERNAL DETAILS:





D9 – DC – 0-10v

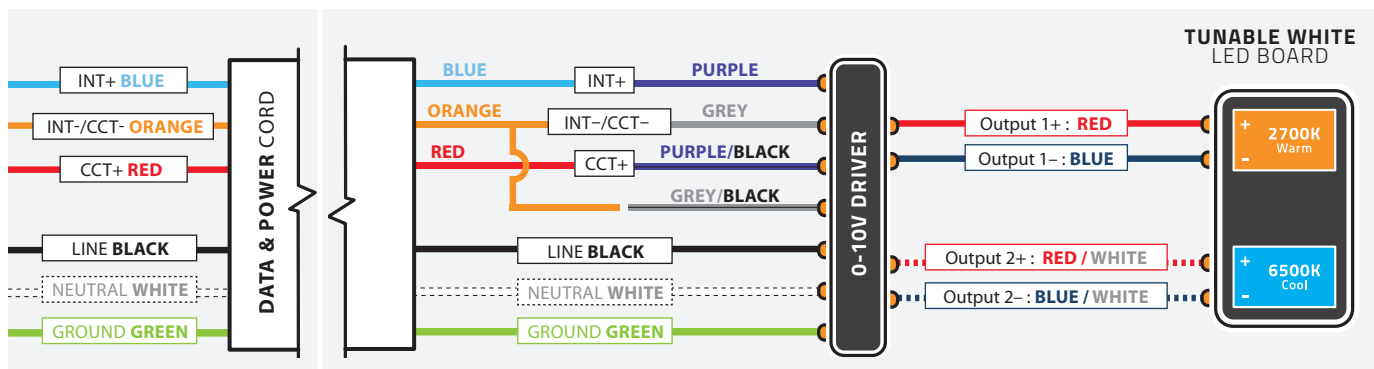
Dual Control for both Color & Intensity (Control Up/Down separately)



- Cord (Power and Data) between fixture and junction box are supplied by Prudential, but ship separately.
Wire colors shown below are representative of the wires inside the fixture.
- Junction box wiring by others. Wire colors shown are for illustration purposes only.

J-BOX WIRING DETAIL:

LIGHTING FIXTURE INTERNAL DETAILS:

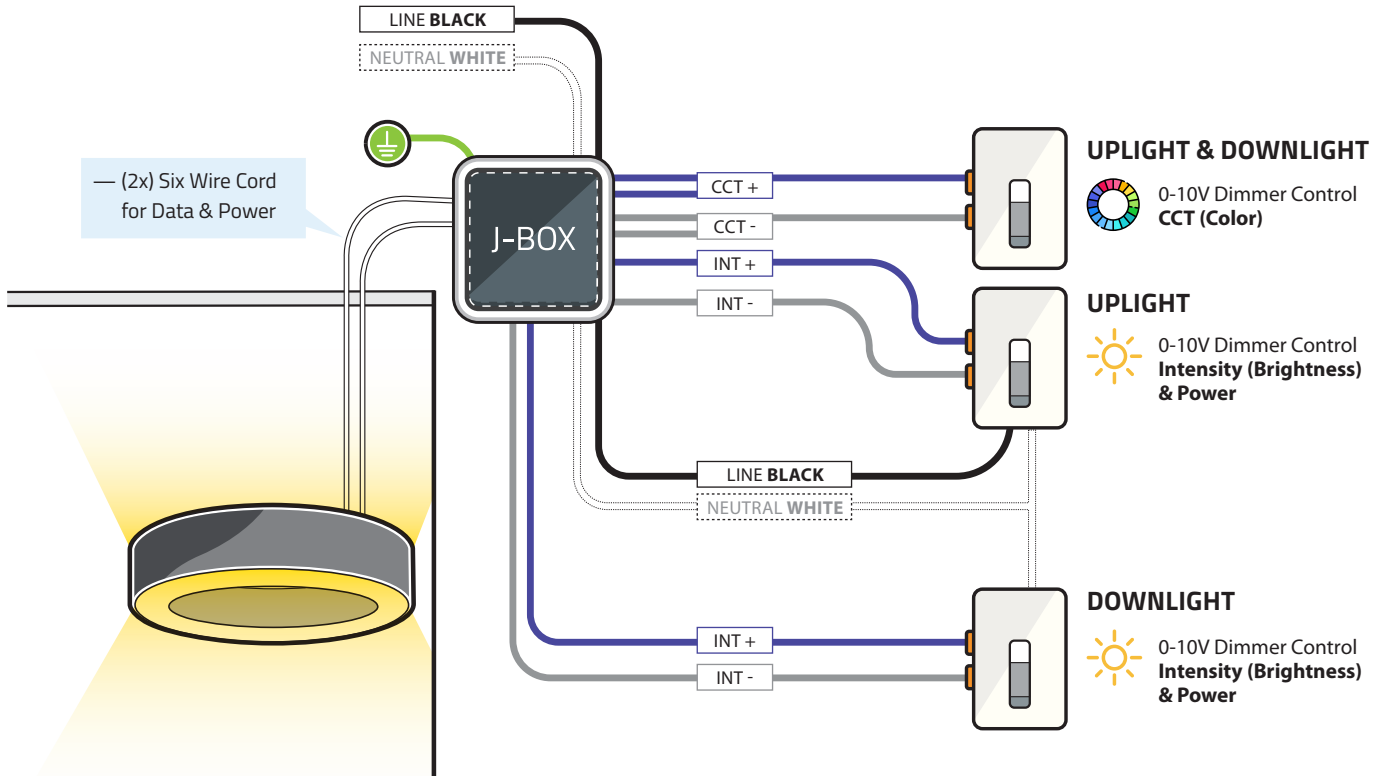




D9 – DC – 0-10v

Single Control for Color, Dual Control for Intensity

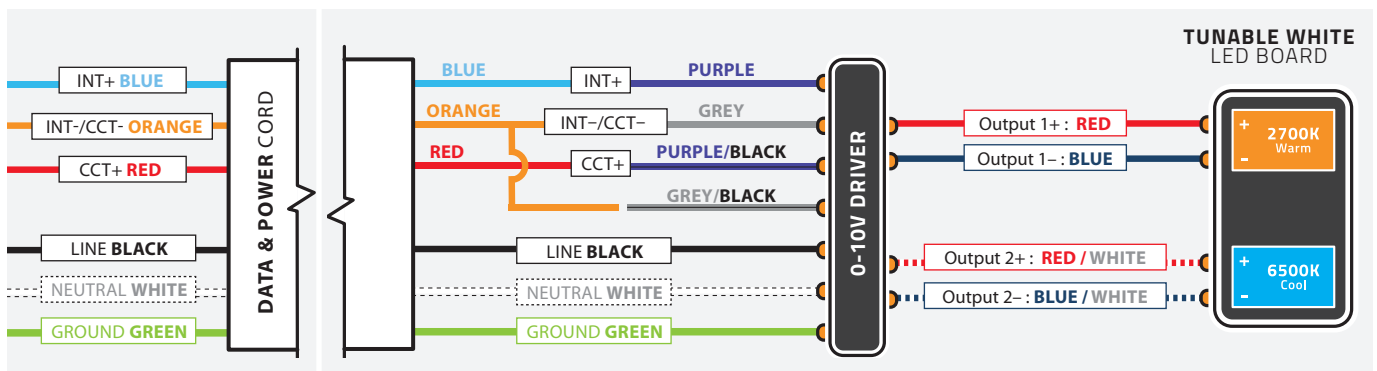
2 CORDS REQUIRED



- Cord (Power and Data) between fixture and junction box are supplied by Prudential, but ship separately. Wire colors shown below are representative of the wires inside the fixture.
- Junction box wiring by others. Wire colors shown are for illustration purposes only.

J-BOX WIRING DETAIL:

LIGHTING FIXTURE INTERNAL DETAILS:

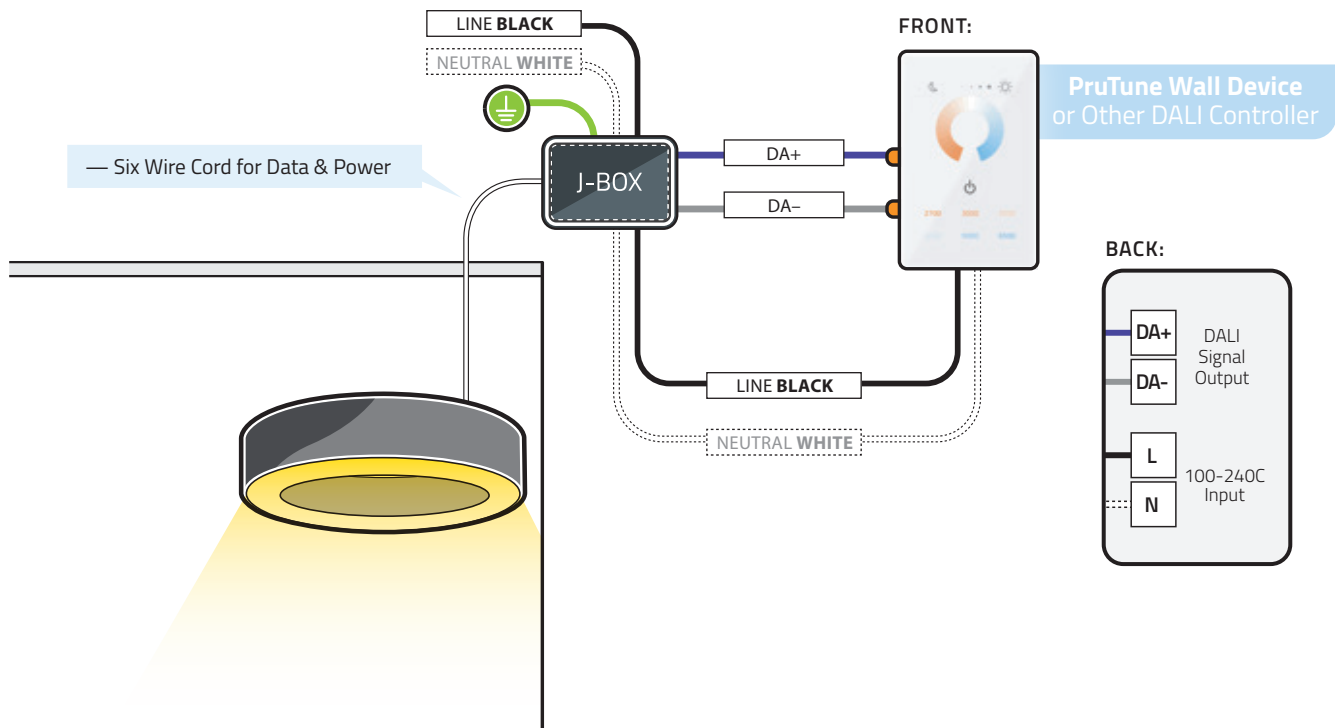




D1/D9 –SC – DALI – PruTune

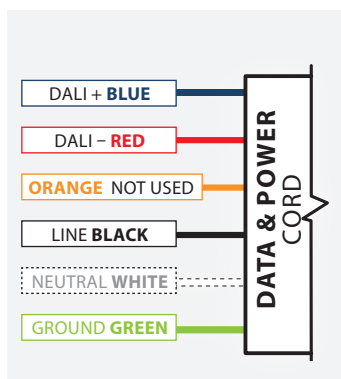
Single Control for Color & Intensity

1 CORD REQUIRED

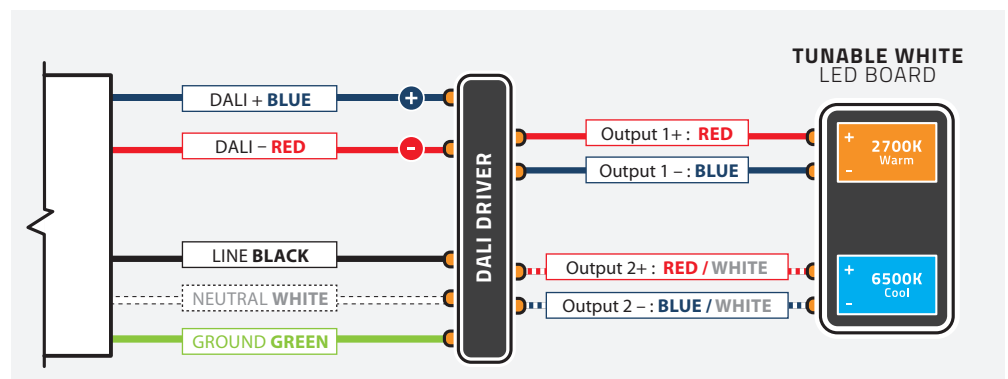


- Cord (Power and Data) between fixture and junction box are supplied by Prudential, but ship separately.
Wire colors shown below are representative of the wires inside the fixture.
- Junction box wiring by others. Wire colors shown are for illustration purposes only.

J-BOX WIRING DETAIL:



LIGHTING FIXTURE INTERNAL DETAILS:

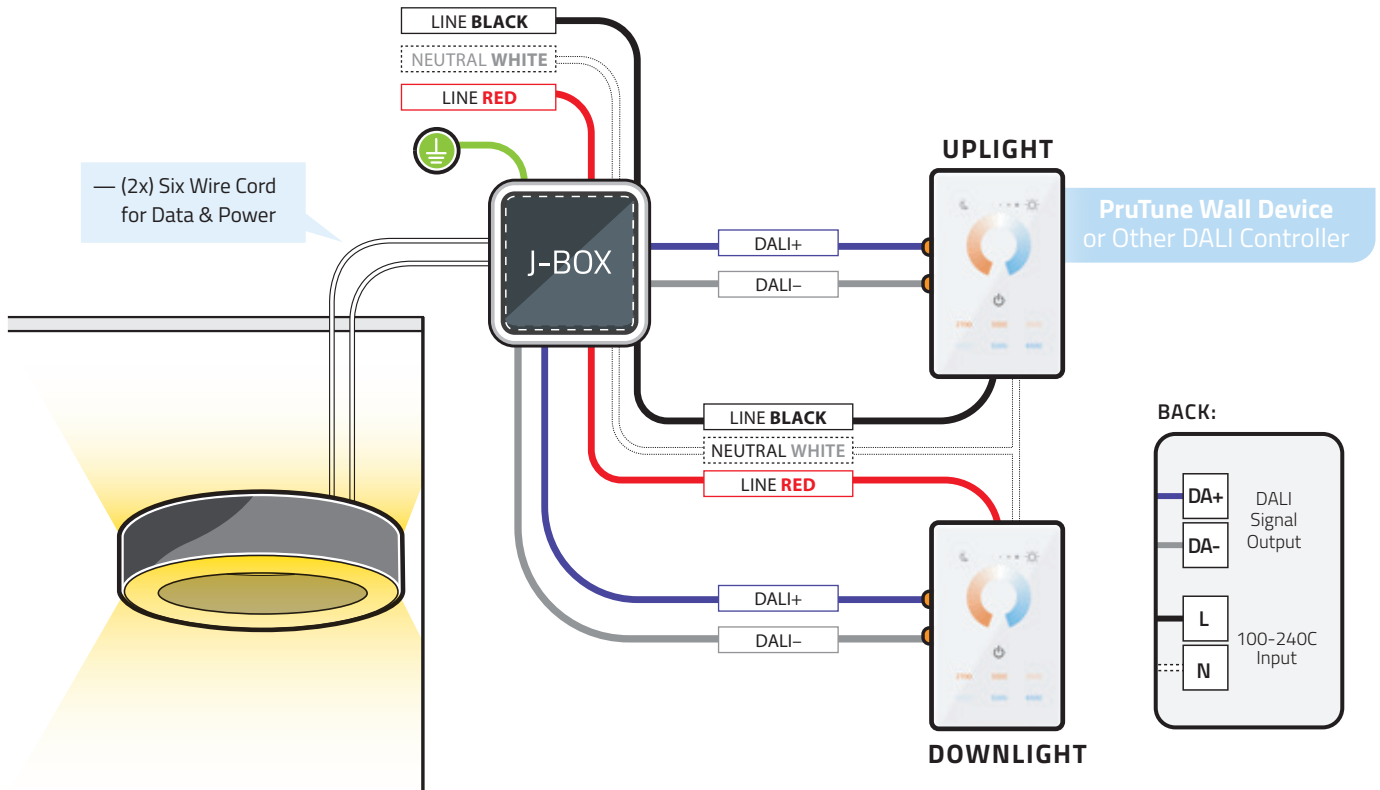




D9 -DC - DALI - PruTune

Single Control for Color & Intensity Down, Separate Control for Color & Intensity Up

2 CORDS REQUIRED

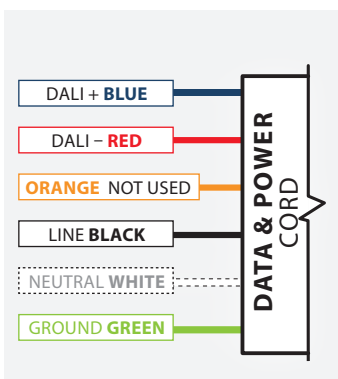


— Cord (Power and Data) between fixture and junction box are supplied by Prudential, but ship separately.

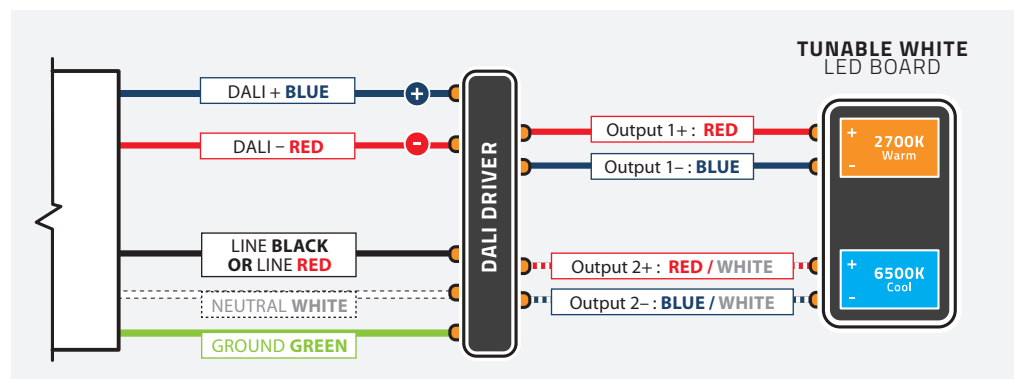
Wire colors shown below are representative of the wires inside the fixture.

— Junction box wiring by others. Wire colors shown are for illustration purposes only.

J-BOX WIRING DETAIL:



LIGHTING FIXTURE INTERNAL DETAILS:

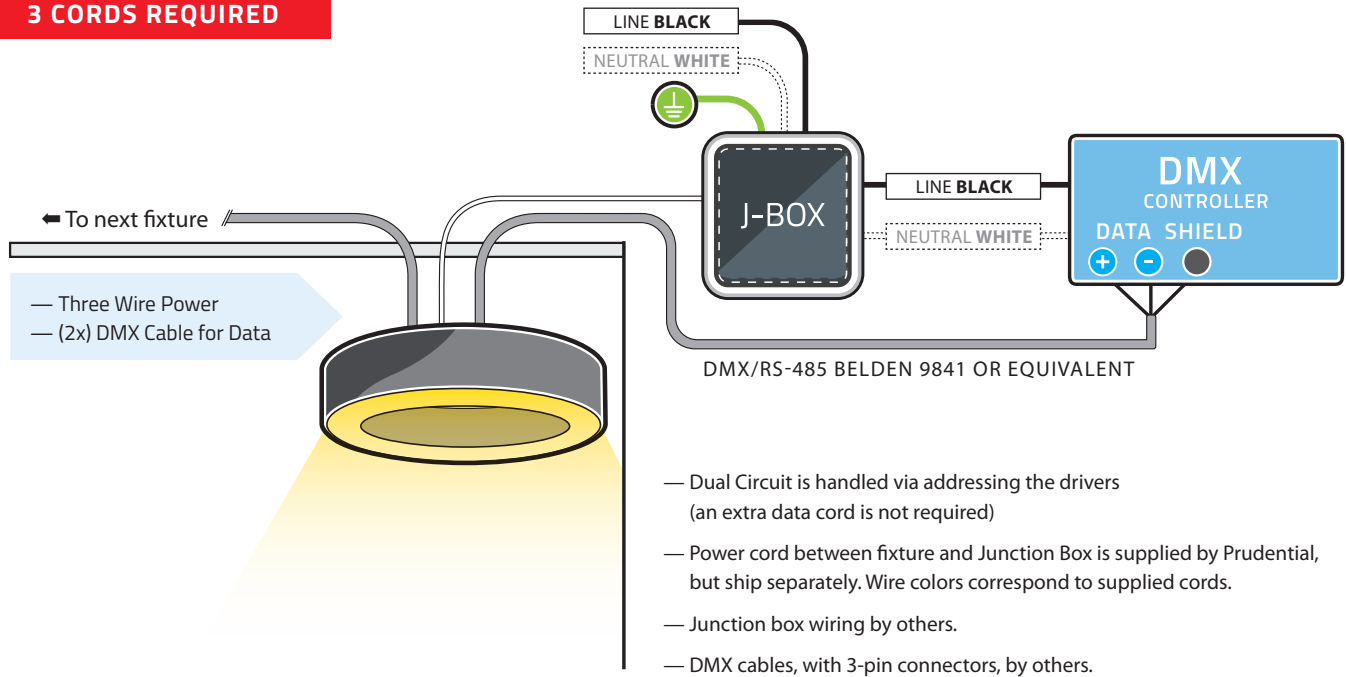




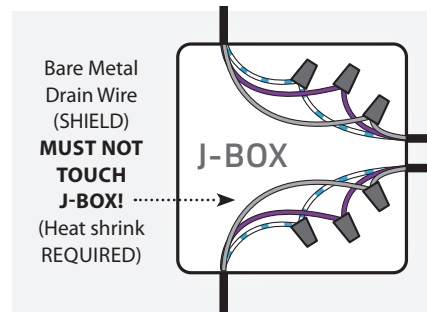
D1/D9 – SC – DMX

DMX Control of Color & Intensity

3 CORDS REQUIRED

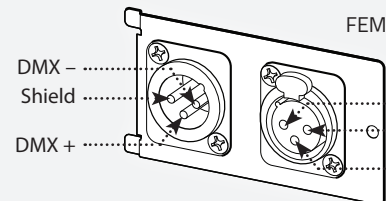


J-BOX WIRING DETAIL: DMX CONNECTIONS



DMX CONNECTOR DETAIL:

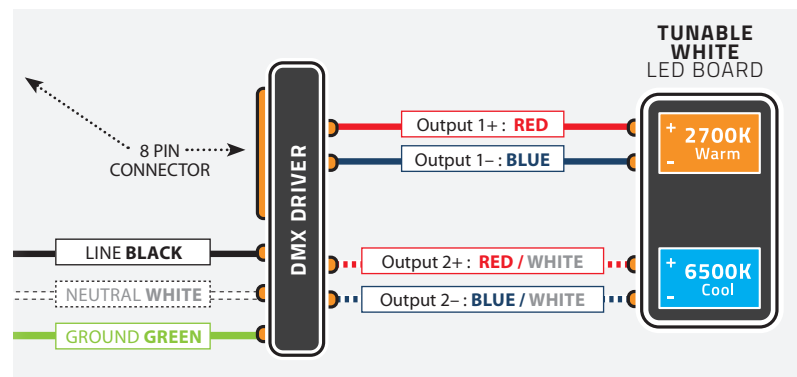
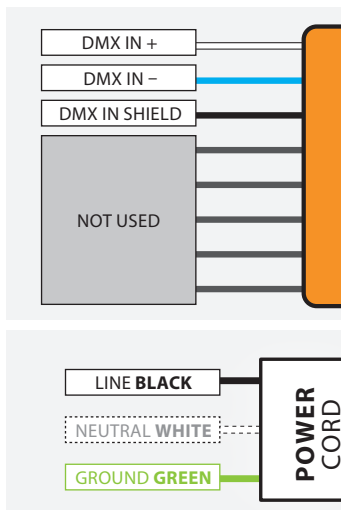
MALE: DMX IN



FEMALE: DMX OUT

DMX -
Shield
DMX +

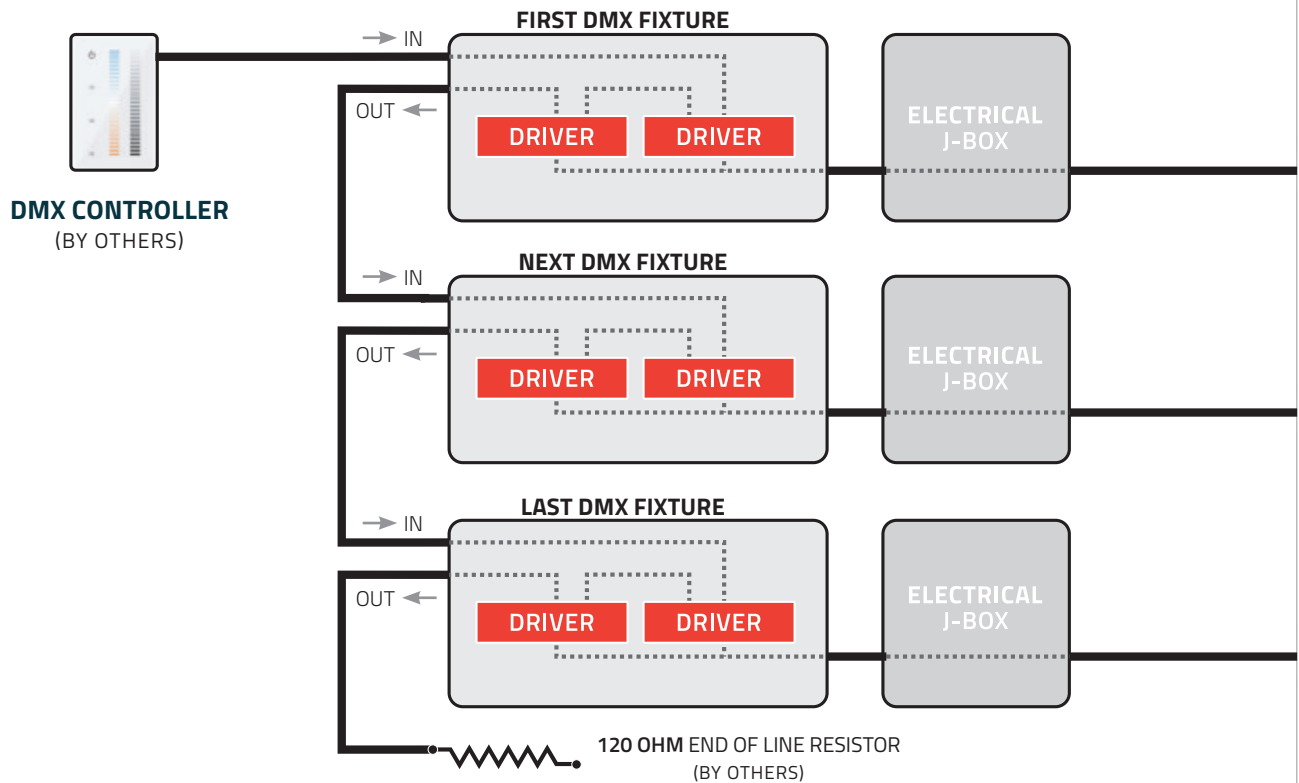
8 PIN CONNECTOR DETAIL:



FOR MULTIPLE
FIXTURES
SEE NEXT PAGE

D1/D9 – SC – DMX

DMX Control of Color & Intensity, Multiple Fixtures



RECOMMENDATIONS

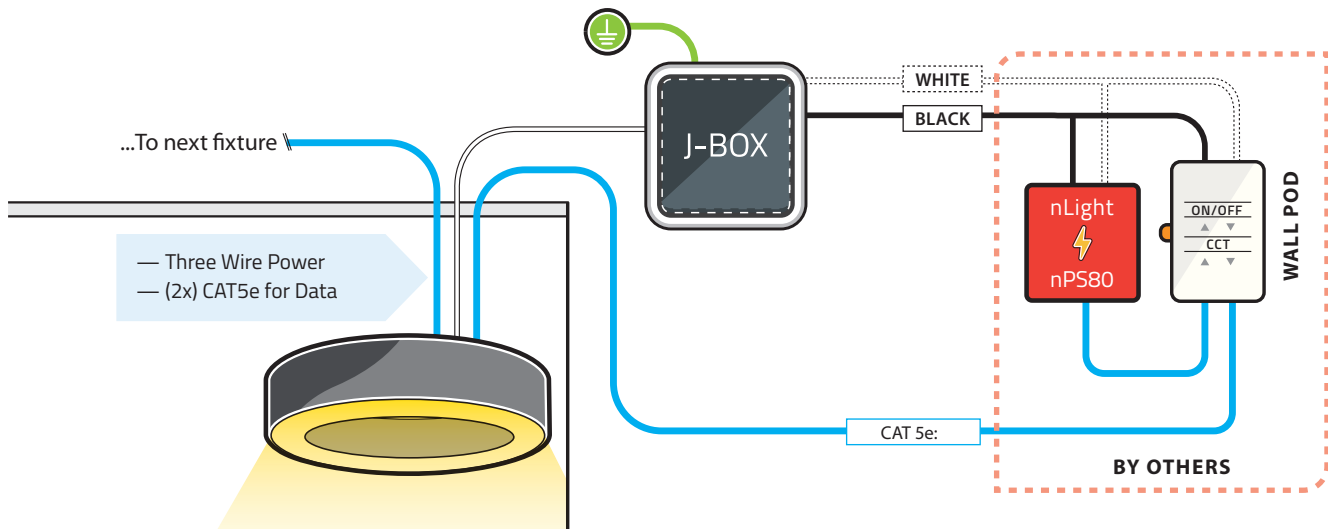
- Fixtures must be daisy chained. (Drivers internal to fixture and daisy chained)
- Maximum 32 drivers per controller, consult factory for quantity of drivers per fixture.
If more than 32 drivers a DMX booster / repeater (by others) must be used.
- Keep DMX cable less than 1000ft between controller and end of line resistor.
- Cables connecting fixtures must be designed for DMX/RS-485, Beldin 9841 or equivalent.
- If more than one zone, fixtures per zone must be specified.



SC – nLight

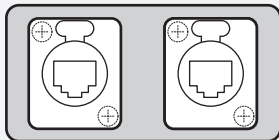
(nLight Control of Color & Intensity, One Fixture)

3 CORDS REQUIRED

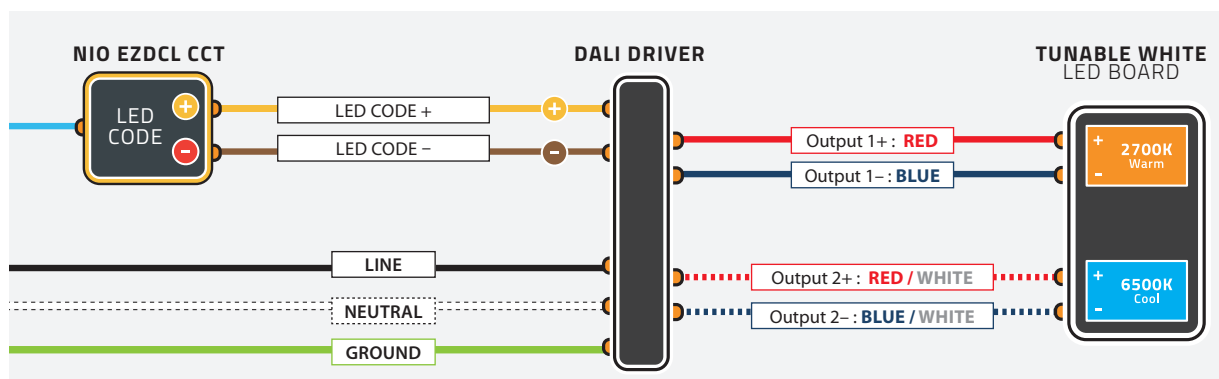


- Cords (Power and Data) between fixture and Junction Box are supplied by Prudential, but ship separately. Wire colors correspond to supplied cords.
- Wiring from Junction Box to Controllers is by others. Wire colors are for illustration purposes only.
- CAT5e cables by others.

RJ45 CONNECTOR DETAIL:



LIGHTING FIXTURE INTERNAL DETAILS:



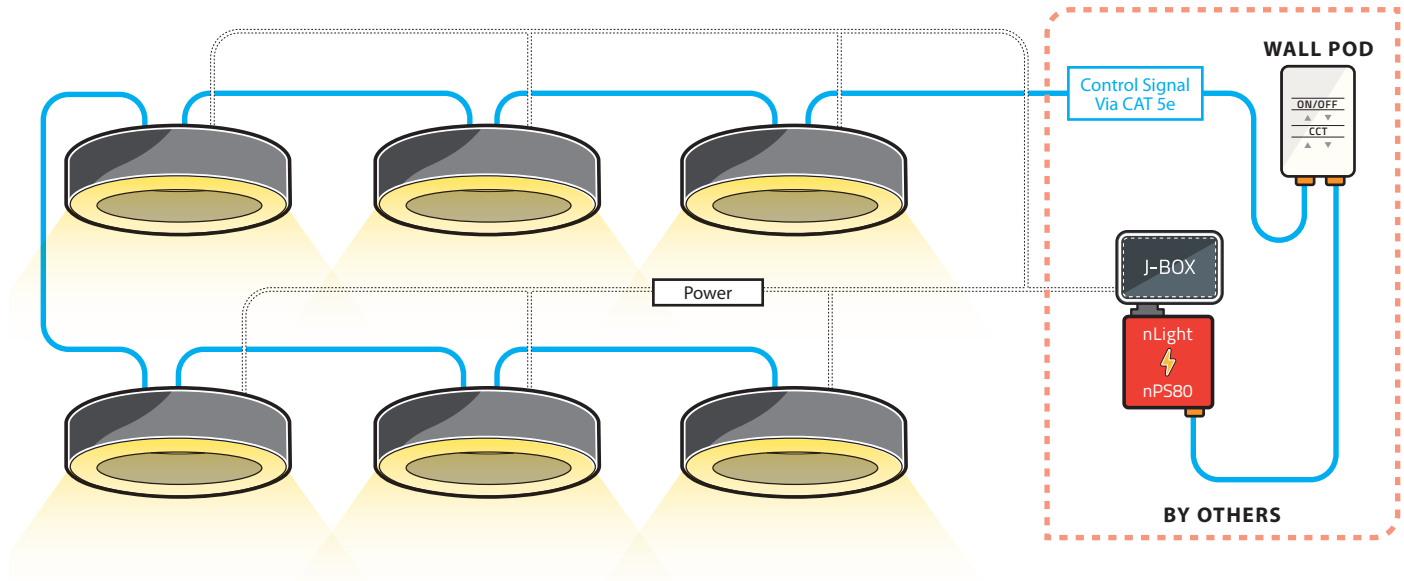


SC – nLight

(nLight Control of Color & Intensity, Multiple Fixtures)

TYPICAL NETWORK LAYOUT

3 CORDS REQUIRED

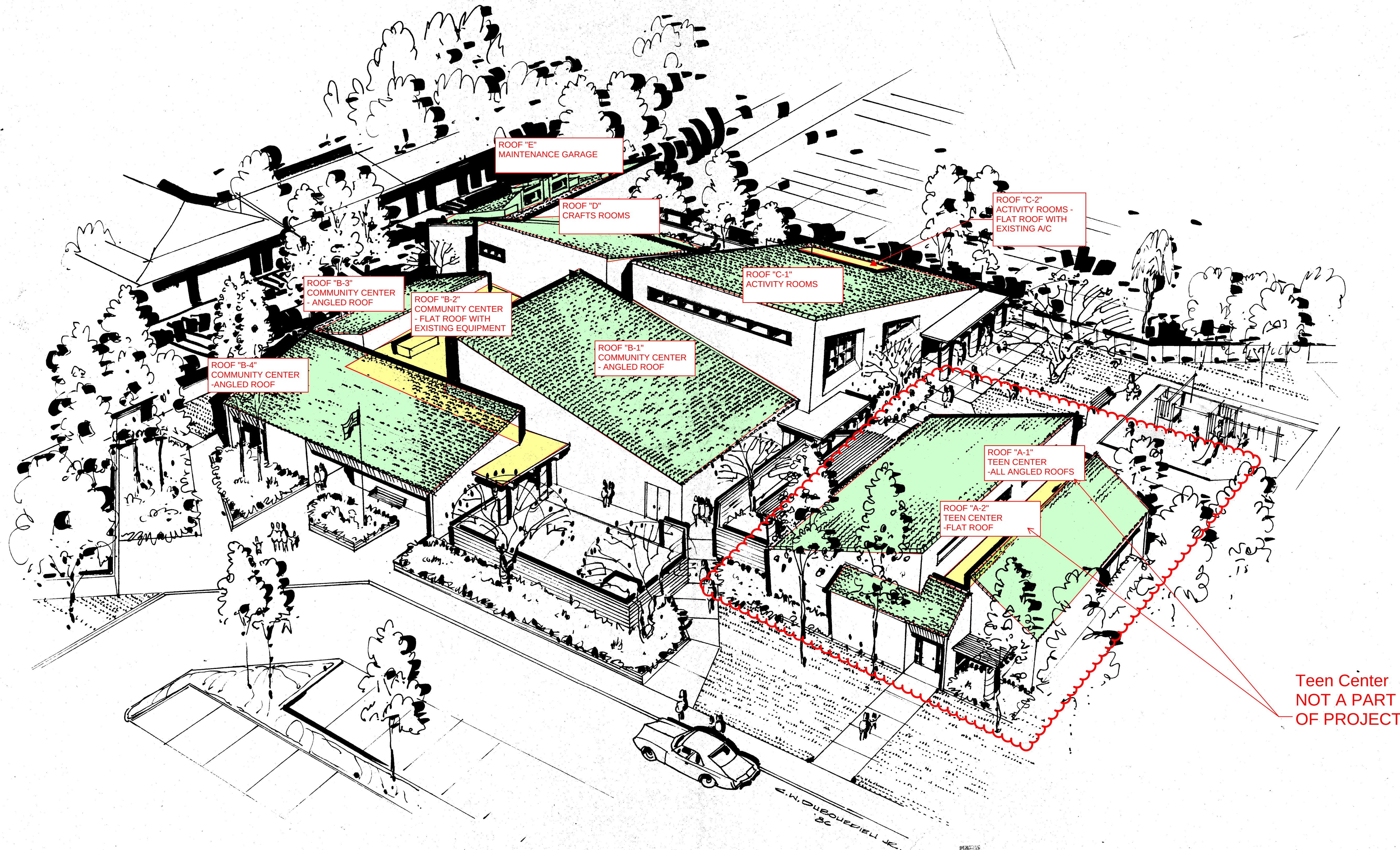


- All nLight RJ45 ports are interchangeable (no dedicated IN or OUT).
- nLight zones must have a net positive amount of bus power. See table below for bus power consumption as a function of fixture size and output. Bus power is supplied by power/relay packs (nPP16 family and nPS80), power supplies (PP20 PL BP and nPANELS), nLight enabled fixtures, and bridges.

BUS POWER CONSUMPTION																
LO				MO				SO				HO				
	D1	D9	SC	DC	D1	D9	SC	DC	D1	D9	SC	DC	D1	D9	SC	DC
O-20	3mA			N/A	3mA			6mA	6mA			6mA	6mA			9mA
O-20				6mA												
O-20																

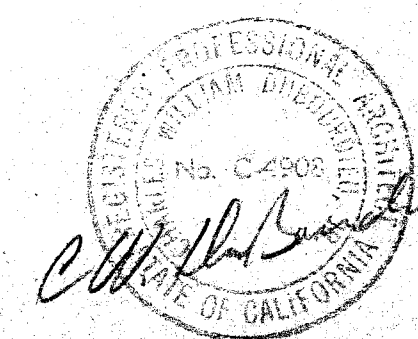
APPENDIX A

ROOF LOCATION MAP



AERIAL VIEW OF THE COMMUNITY CENTER LOOKING SOUTHWEST

Teen Center
NOT A PART
OF PROJECT



TITLE, COVER SHEET

job number 85022
date 7/14/80
drawn C.W.D.
scale
DUBOURDIEU, INC. C 4908

ALTERATIONS AND ADDITIONS FOR:
LOS ALAMITOS COMMUNITY CENTER
10911 OAK ST., LOS ALAMITOS, CA

no	revision	date
1		
2		
3		
4		

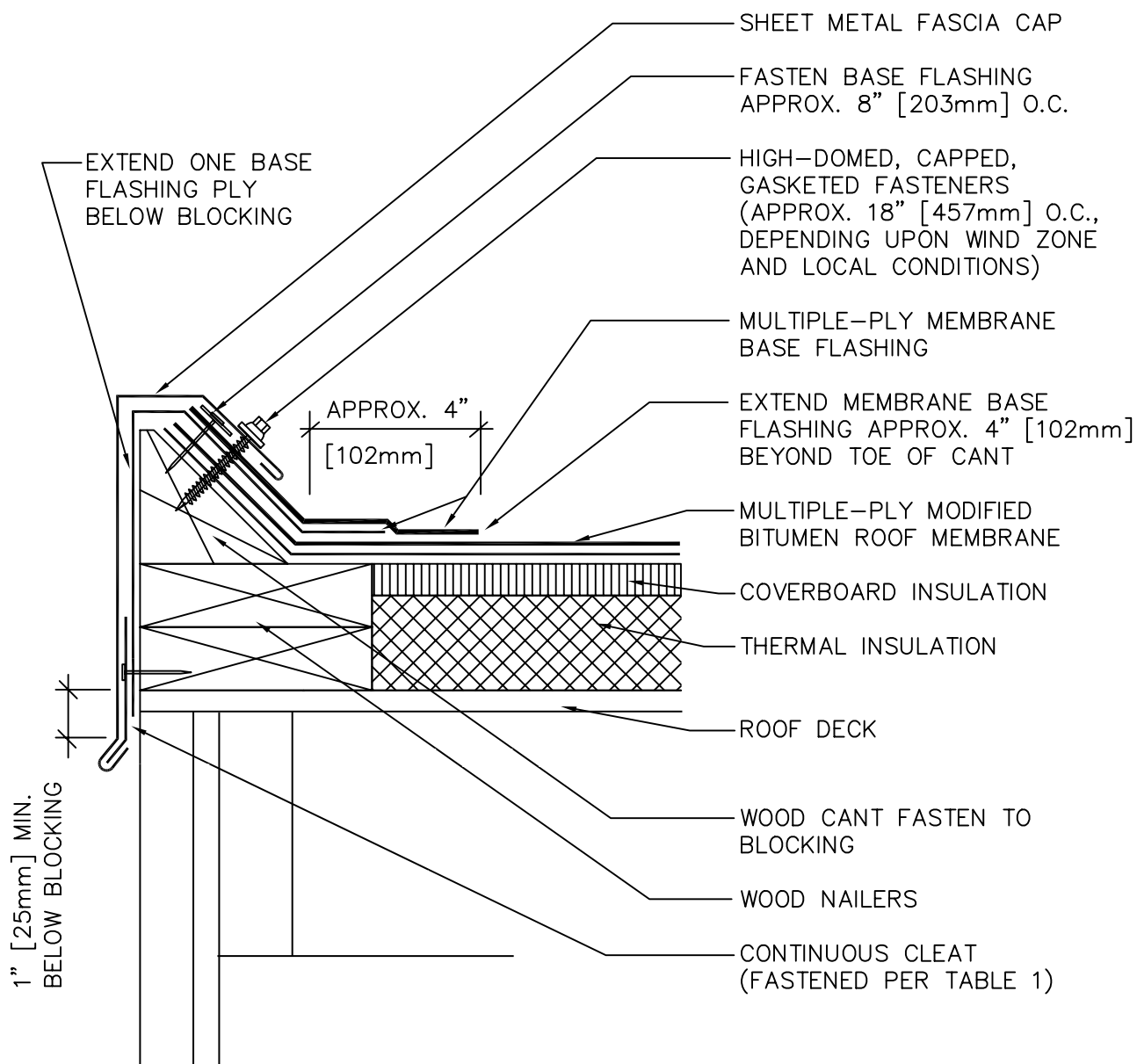
10832 Kyle Street, Suite C
Los Alamitos, California 90720

CHARLES WILLIAM DUBOURDIEU JR. AIA ARCHITECTURE • PLANNING

SHEET
A

APPENDIX B

CONSTRUCTION DETAILS



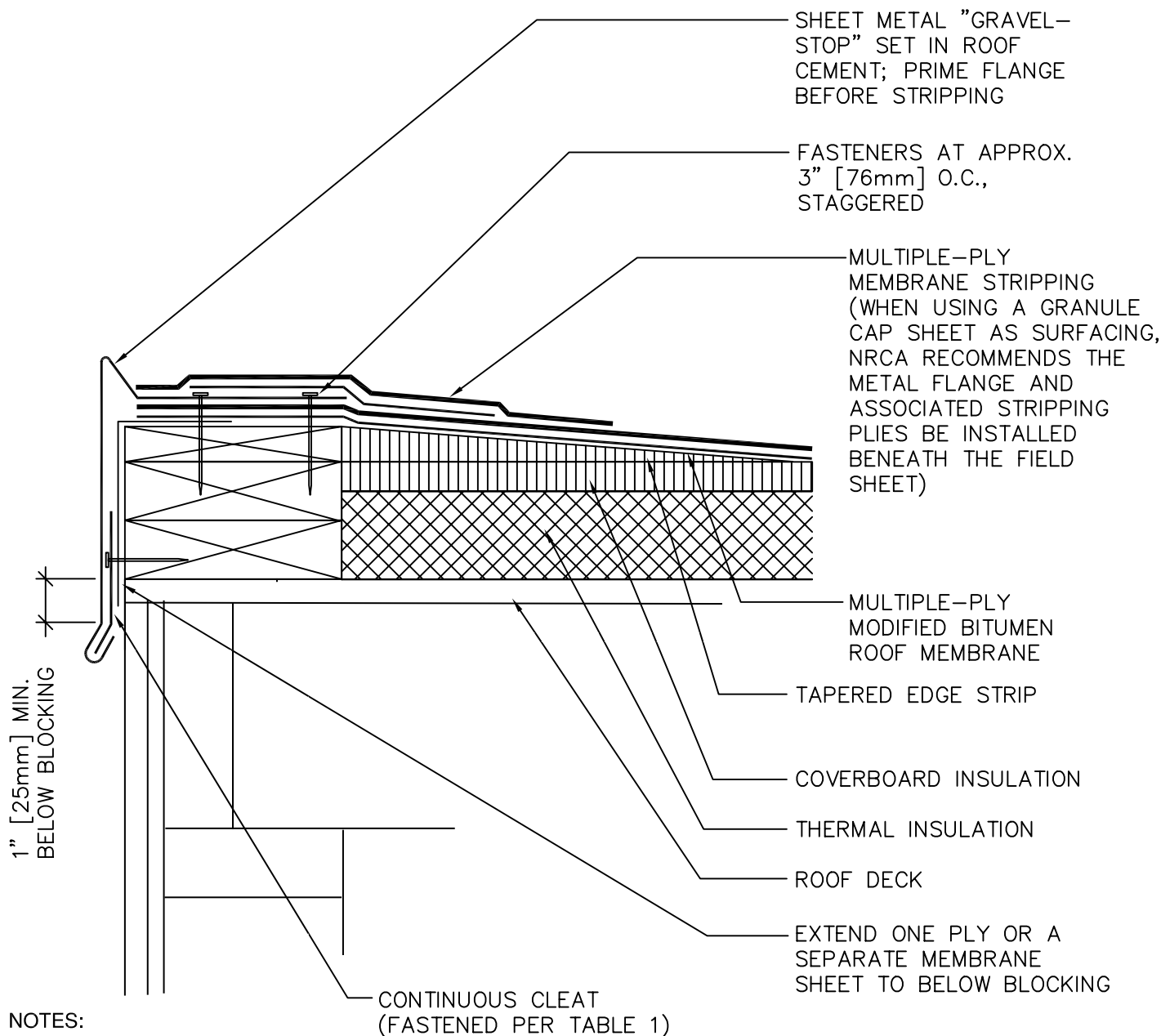
NOTES:

1. ATTACH WOOD NAILER TO WALL/DECK WITH SUITABLE FASTENERS.
2. WOOD BLOCKING MAY BE SLOTTED FOR VENTING OF WET-FILL DECKS OR OTHER CONSTRUCTIONS WHERE APPLICABLE.
3. THIS DETAIL SHOULD BE USED ONLY WHERE THE DECK IS SUPPORTED BY THE OUTSIDE WALL.
4. REFER TO BUR/MB TABLE 1 FOR METAL THICKNESS AND CLEAT SUGGESTIONS.

MEMBRANE ROOFING DETAILS

RAISED PERIMETER EDGE WITH METAL FLASHING
(FASCIA CAP)

MB-1S

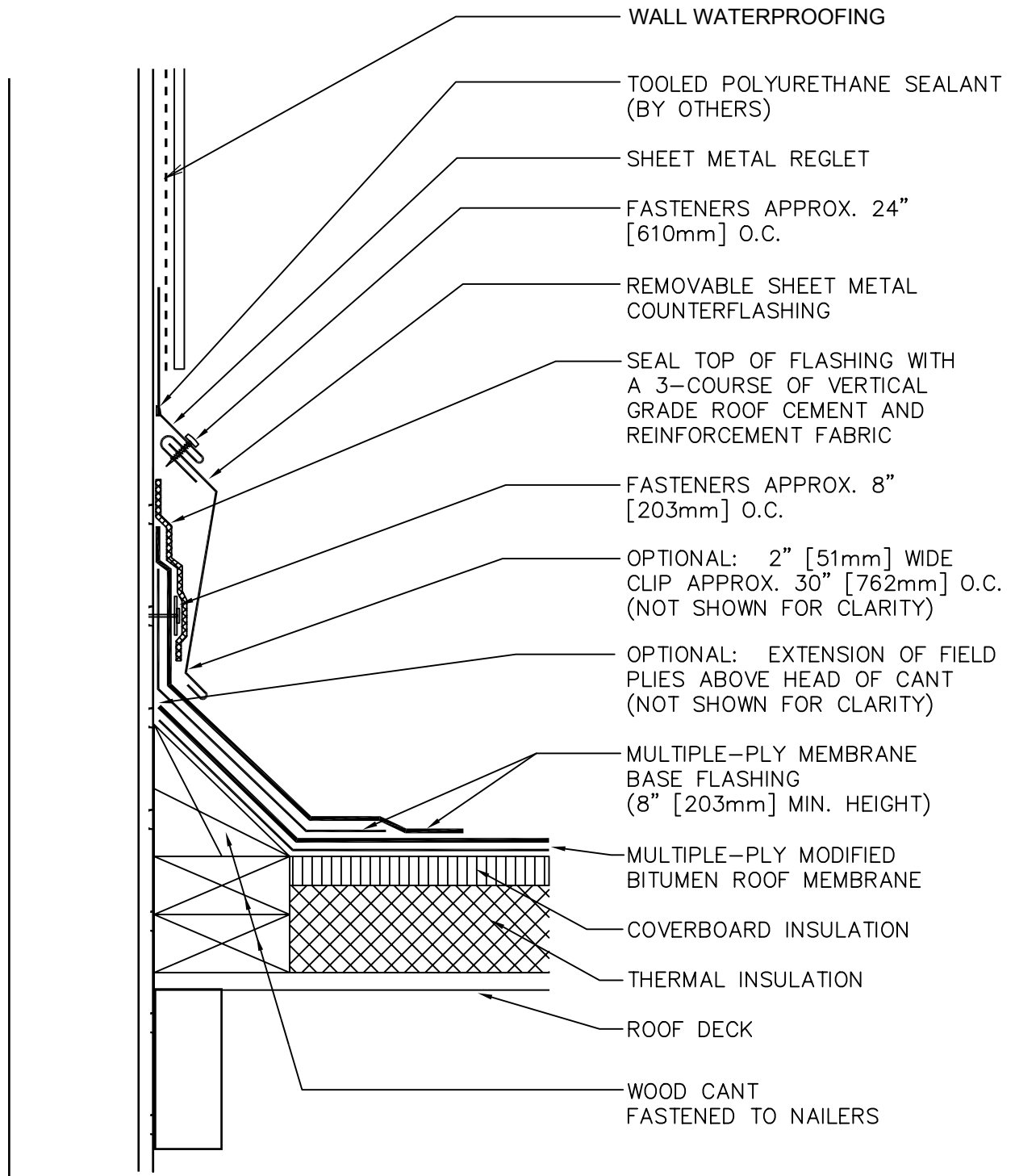


1. NRCA SUGGESTS AVOIDING (WHERE POSSIBLE) FLASHING DETAILS THAT REQUIRE RIGID METAL FLANGES TO BE EMBEDDED OR SANDWICHED INTO THE ROOF MEMBRANE. (SEE MB-1 FOR THE PREFERRED PERIMETER CONSTRUCTION.)
2. THIS DETAIL SHOULD BE USED ONLY WHERE THE DECK IS SUPPORTED BY THE OUTSIDE WALL.
3. ATTACH NAILER TO WALL WITH SUITABLE FASTENERS.
4. WOOD BLOCKING MAY BE SLOTTED FOR VENTING OF WET-FILL DECKS OR OTHER CONSTRUCTIONS WHERE APPLICABLE.
5. FREQUENT NAILING OF SHEET METAL FLANGE IS NECESSARY TO MINIMIZE THERMAL MOVEMENT.
6. REFER TO BUR/MB TABLE 1 FOR METAL THICKNESS AND CLEAT REQUIREMENT.
7. NRCA SUGGESTS THAT THE TOP STRIPPING PLY BE A HEAVY-WEIGHT REINFORCED POLYMER MODIFIED BITUMEN SHEET TO HELP STRIPPING PLIES ACCOMMODATE THERMAL MOVEMENT OF METAL.

MEMBRANE ROOFING DETAILS

EMBEDDED EDGE METAL FLASHING (GRAVEL-STOP)

MB-3S



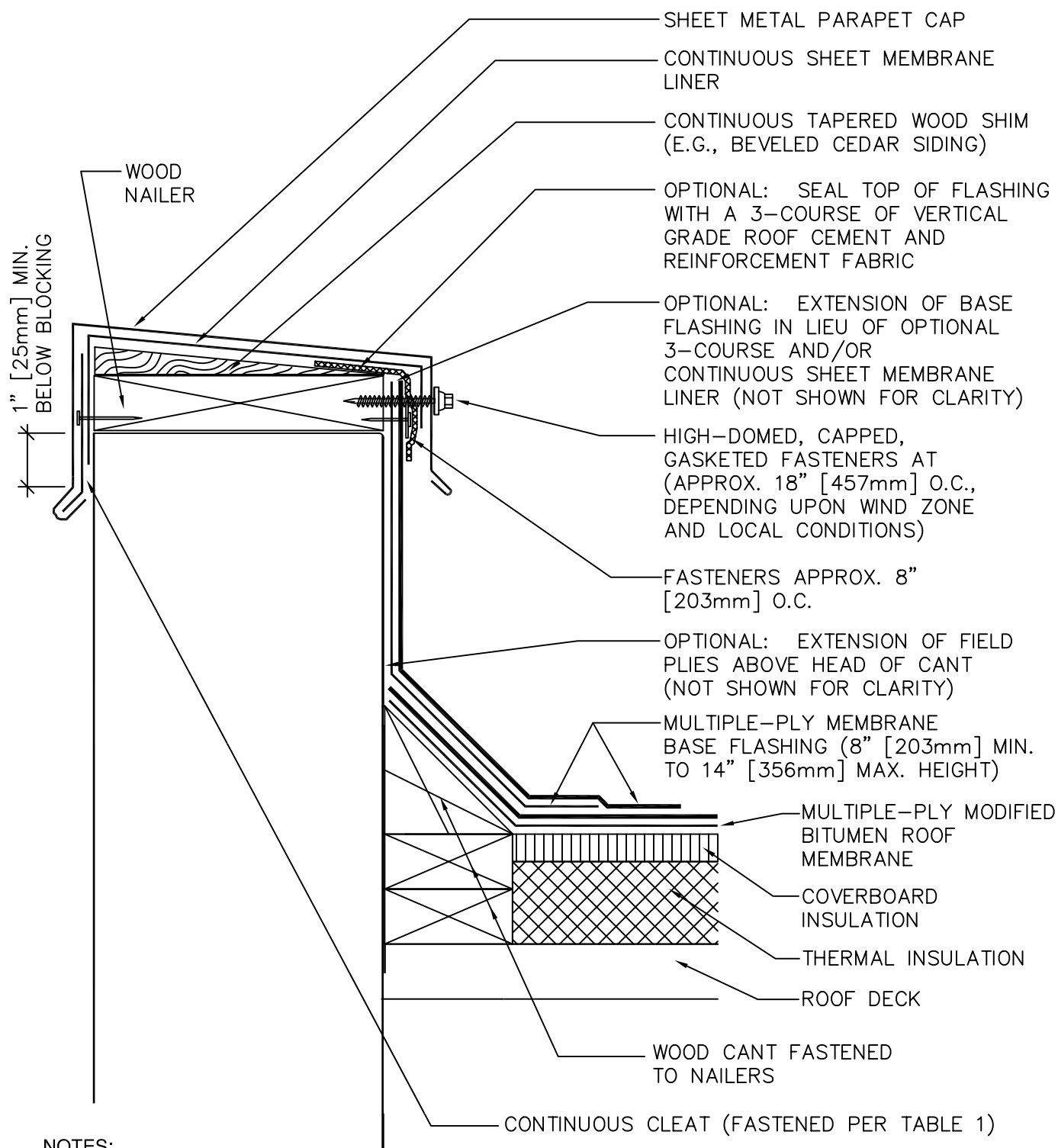
NOTES:

1. THIS DETAIL SHOULD BE USED ONLY WHERE THE DECK IS SUPPORTED BY THE WALL.
2. THE JOINTS IN THE SHEET METAL COUNTERFLASHING SHOULD NOT BE SOLDERED.
3. OPTION: IF WOOD NAILERS ARE NOT USED, A FIBER CANT STRIP SET IN BITUMEN OR ADHESIVE MAY BE USED.
4. SEE TABLE 2 FOR ALTERNATE SHEET METAL COUNTERFLASHING TERMINATIONS.

MEMBRANE ROOFING DETAILS

BASE FLASHING FOR WALL-SUPPORTED DECK

MB-5S



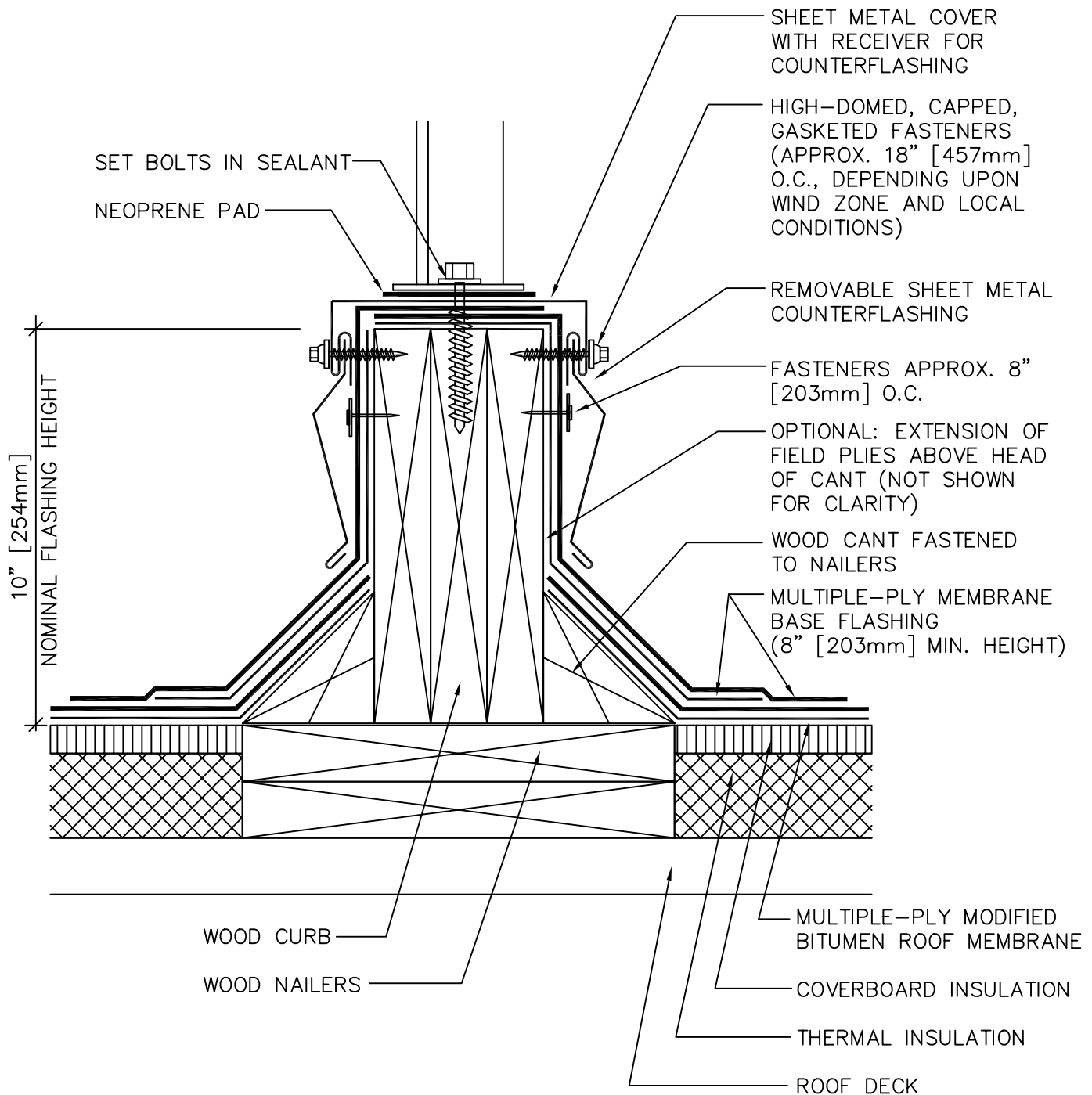
NOTES:

1. THIS DETAIL SHOULD BE USED ONLY WHEN THE ROOF DECK IS SUPPORTED BY THE WALL. DETAIL MB-4 SHOULD BE USED FOR NON-WALL SUPPORTED DECK.
2. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.
3. OPTION: IF WOOD NAILERS ARE NOT USED, A FIBER CANT STRIP SET IN BITUMEN OR ADHESIVE MAY BE USED.
4. REFER TO BUR/MB TABLE 1 FOR METAL THICKNESS AND CLEAT REQUIREMENT.
5. SEE TABLE 3 FOR ALTERNATE SHEET METAL PARAPET CAP SECUREMENT AND LOCKS AND SEAMS FOR JOINTS IN SHEET METAL.

MEMBRANE ROOFING DETAILS

**METAL PARAPET CAP (COPING)
AND BASE FLASHING**

MB-8S



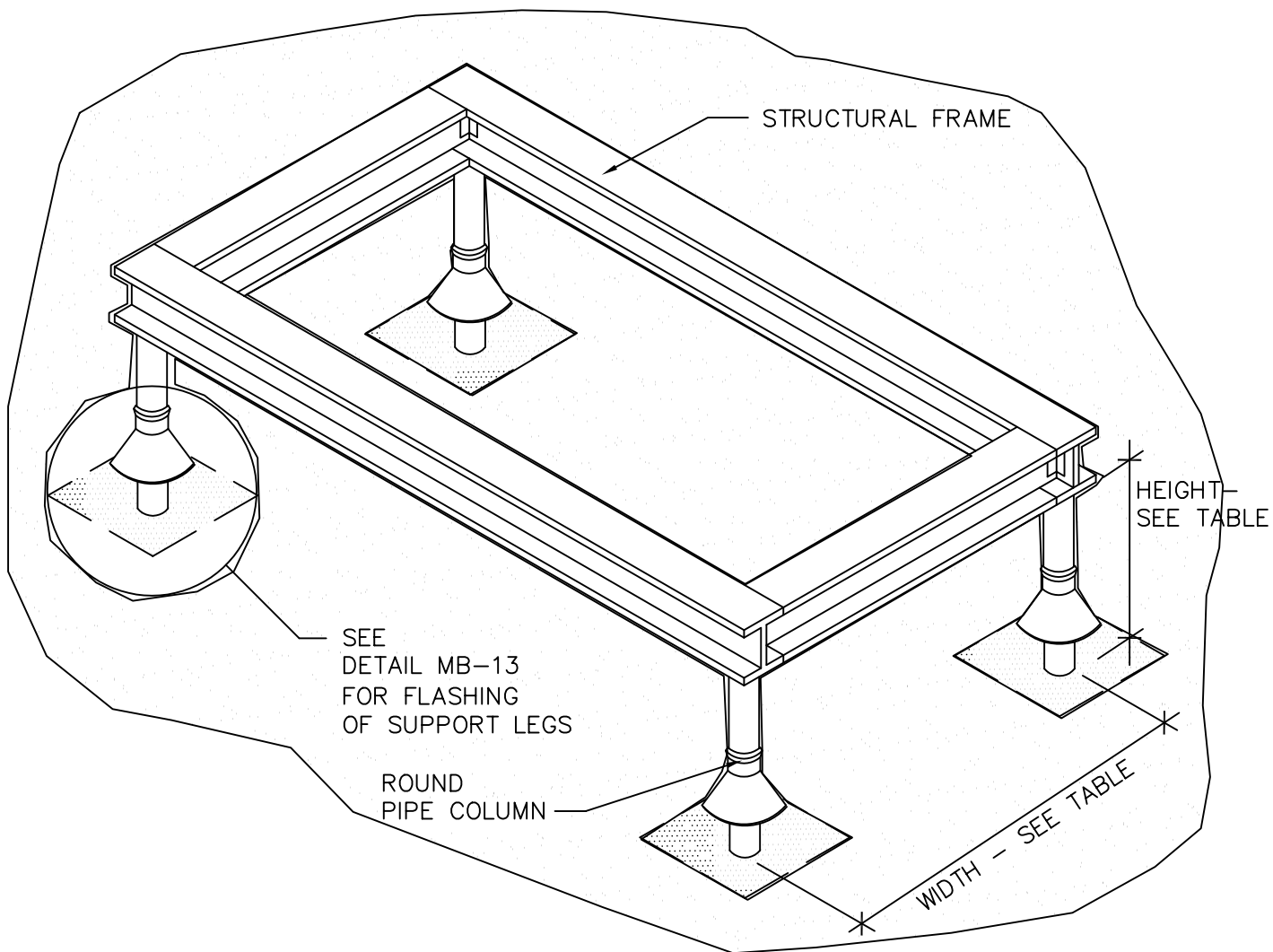
NOTES:

1. THIS DETAIL ALLOWS FOR ROOF MAINTENANCE AROUND THE SUPPORTED EQUIPMENT. THE CONTINUOUS SUPPORT IS PREFERRED IN LIGHT-WEIGHT STRUCTURAL SYSTEMS BECAUSE THE EQUIPMENT WEIGHT CAN BE SPREAD ACROSS TWO OR MORE SUPPORTING MEMBERS. WHERE HEAVY STRUCTURAL SYSTEMS ARE USED OR WHERE THE LOAD CAN BE CONCENTRATED OVER A COLUMN, DETAIL MB-12 MAY BE PREFERRED. A MINIMUM OF 2 FEET [610mm] OF HORIZONTAL CLEARANCE MUST BE PROVIDED FOR REMOVAL AND REPLACEMENT OF ROOFING AND FLASHING BETWEEN PARALLEL SUPPORTS. A MINIMUM OF 3 FEET [914mm] OF VERTICAL CLEARANCE FROM ROOF SURFACE TO BOTTOM OF SUPPORTED EQUIPMENT SHOULD ALSO BE PROVIDED.
2. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.

MEMBRANE ROOFING DETAILS

EQUIPMENT SUPPORT CURB

MB-11S



WIDTH OF EQUIPMENT	HEIGHT OF LEGS
UP TO 24" [UP TO 610mm]	24" [610mm]
25" TO 48" [635mm TO 1.2m]	36" [914mm]
48" AND WIDER [1.2m AND WIDER]	48" [1.2m]

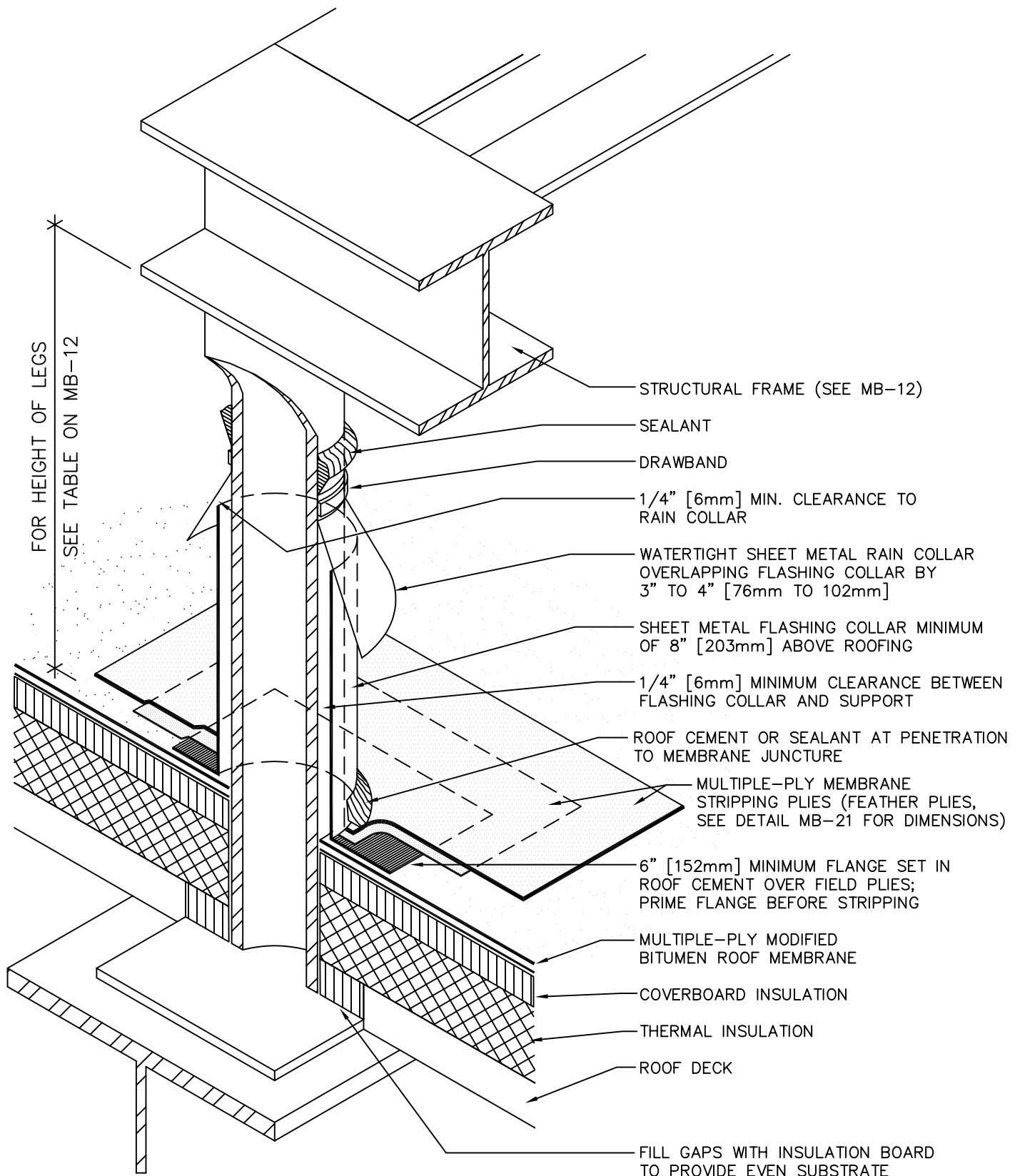
NOTES:

1. THIS DETAIL MAY BE PREFERABLE TO DETAIL MB-11 WHEN THE CONCENTRATED LOADS CAN BE LOCATED DIRECTLY OVER COLUMNS OR HEAVY GIRDERS IN THE STRUCTURE OF THE BUILDING. THIS DETAIL CAN BE ADAPTED FOR OTHER USES, SUCH AS SIGN SUPPORTS.

MEMBRANE ROOFING DETAILS

EQUIPMENT SUPPORT STAND

MB-12



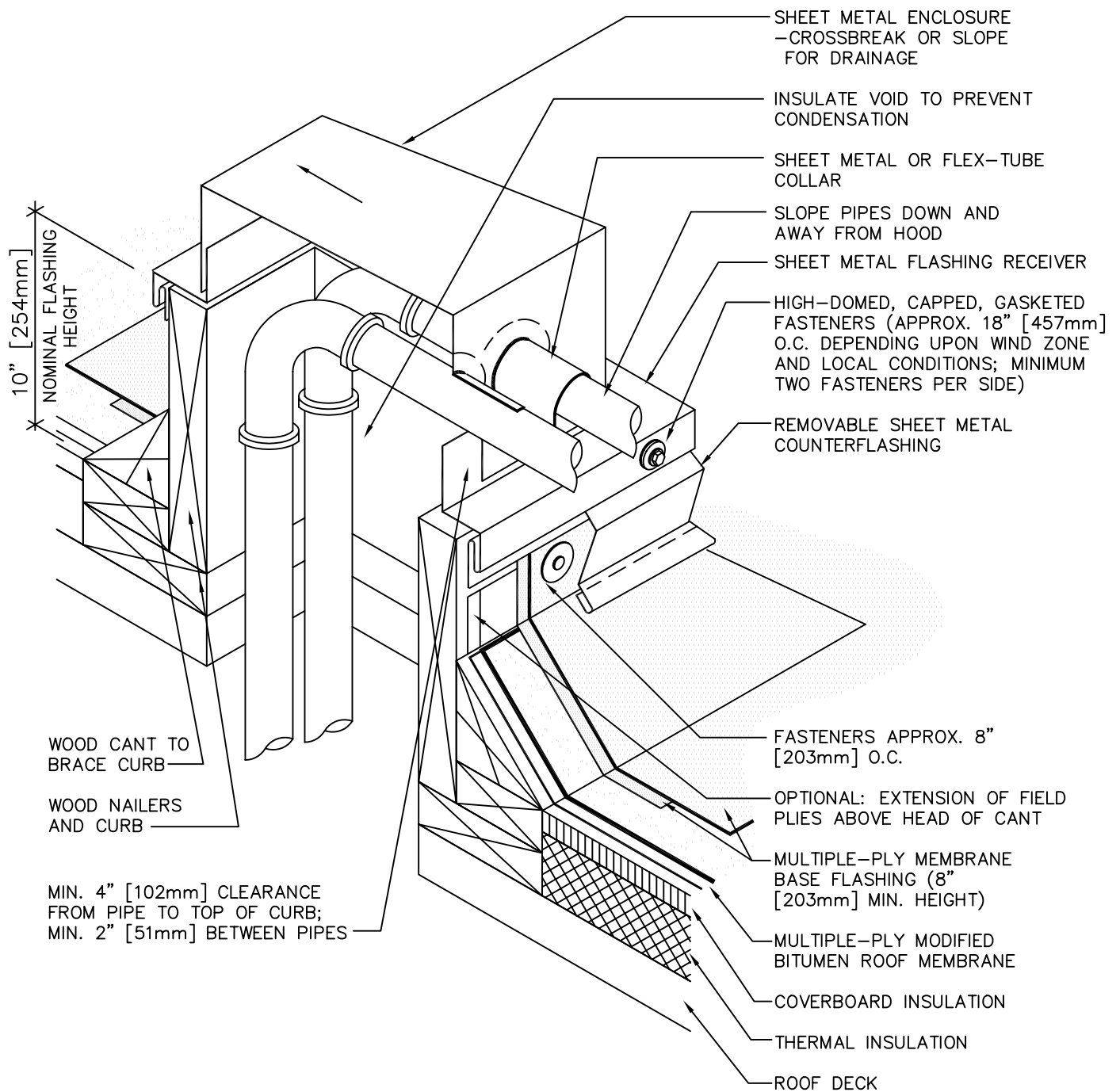
NOTES:

1. NRCA SUGGESTS THAT THE TOP STRIPPING PLY BE A HEAVY-WEIGHT REINFORCED POLYMER MODIFIED BITUMEN SHEET.

MEMBRANE ROOFING DETAILS

EQUIPMENT SUPPORT STAND AND
TYPICAL RAIN COLLAR PENETRATION DETAIL

MB-13



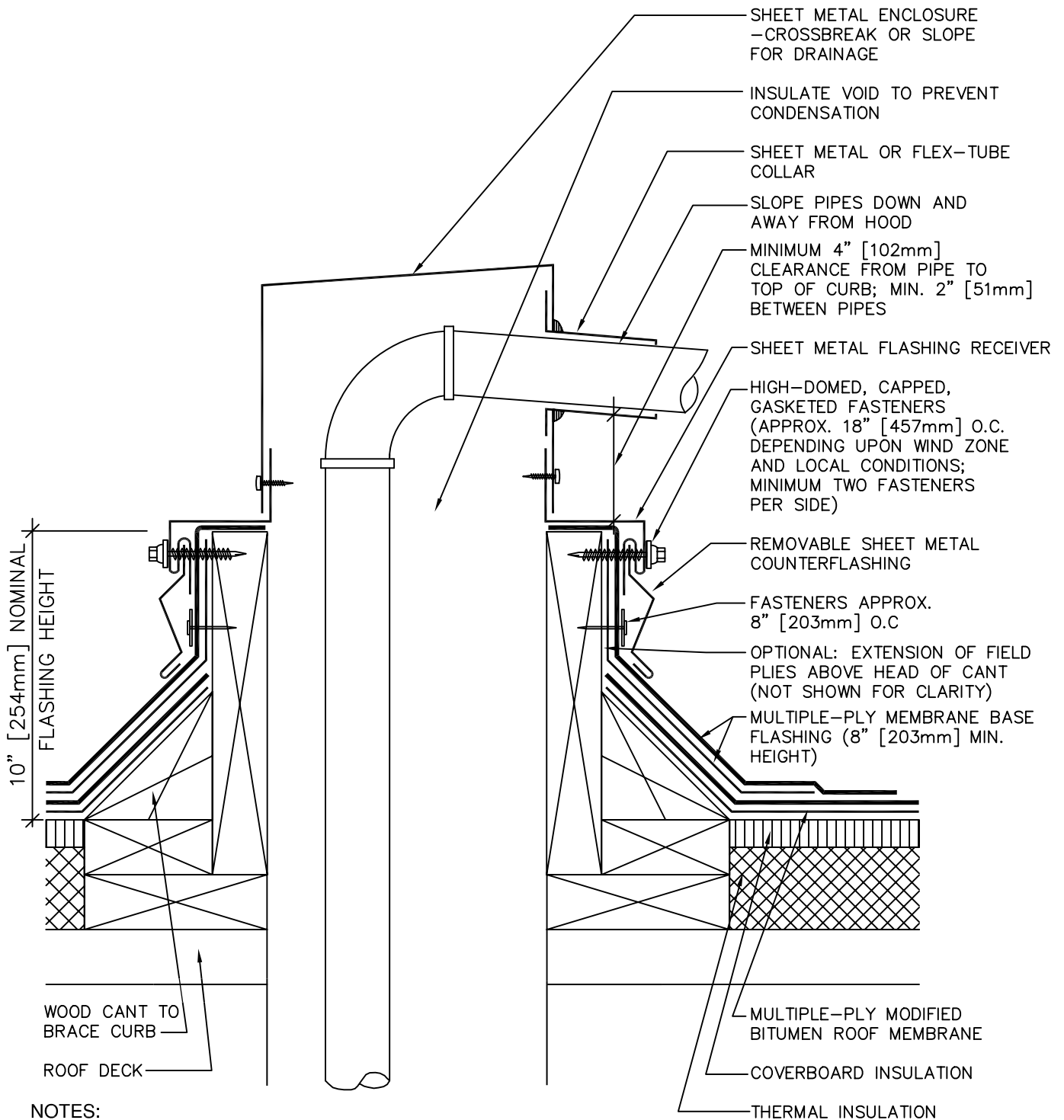
NOTES:

1. THIS DETAIL ILLUSTRATES ANOTHER METHOD OF ELIMINATING PITCH POCKETS AND AN OPTIONAL METHOD OF GROUPING PIPING THAT MUST COME UP ABOVE THE ROOF SURFACE.
2. MANY MANUFACTURERS OFFER PREFABRICATED BOOTS AND OTHER MATERIALS FOR THIS PURPOSE. SPECIFICS ON THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURERS' SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
3. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.

MEMBRANE ROOFING DETAILS

SHEET METAL ENCLOSURE FOR PIPING
THROUGH ROOF DECK

MB-19



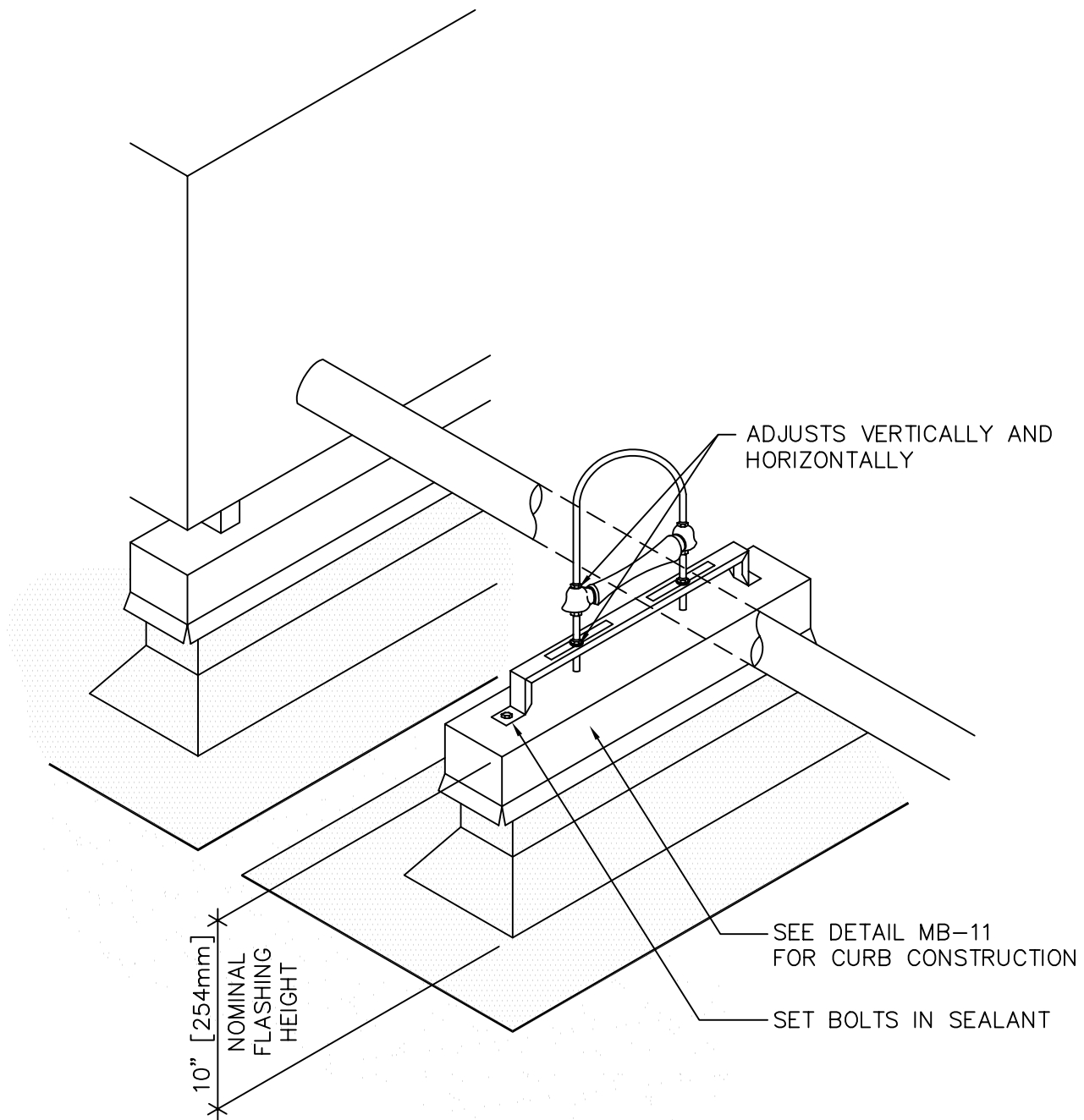
NOTES:

1. THIS DETAIL ILLUSTRATES ANOTHER METHOD OF ELIMINATING PITCH POCKETS AND AN OPTIONAL METHOD OF GROUPING PIPING THAT MUST PENETRATE THE ROOF.
2. MANY MANUFACTURERS OFFER PREFABRICATED BOOTS AND OTHER MATERIALS FOR THIS PURPOSE. SPECIFICS ON THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURERS' SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
3. ATTACH NAILER TO DECK WITH SUITABLE FASTENERS.

MEMBRANE ROOFING DETAILS

SHEET METAL ENCLOSURE FOR PIPING
THROUGH ROOF DECK

MB-19S



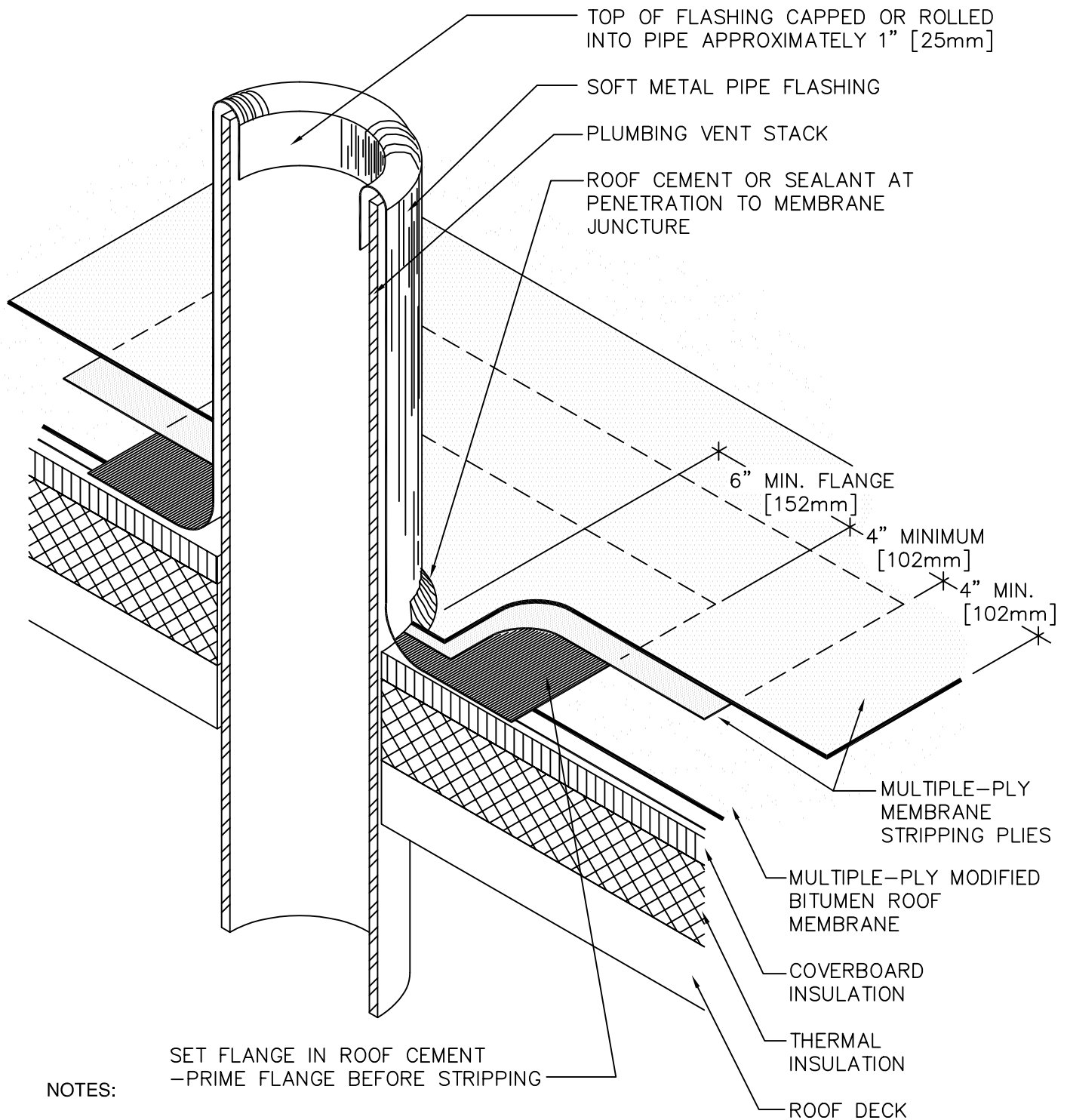
NOTES:

1. NRCA SUGGESTS PIPES AND CONDUITS NOT BE PLACED ON ROOFS. HOWEVER, WHERE THEY ARE NECESSARY, A PIPE ROLLER SUPPORT IS RECOMMENDED.
2. THIS DETAIL IS DESIGNED TO ELIMINATE ROOF DAMAGE DUE TO EXPANSION AND CONTRACTION OF PIPES.

MEMBRANE ROOFING DETAILS

PIPE ROLLER SUPPORT

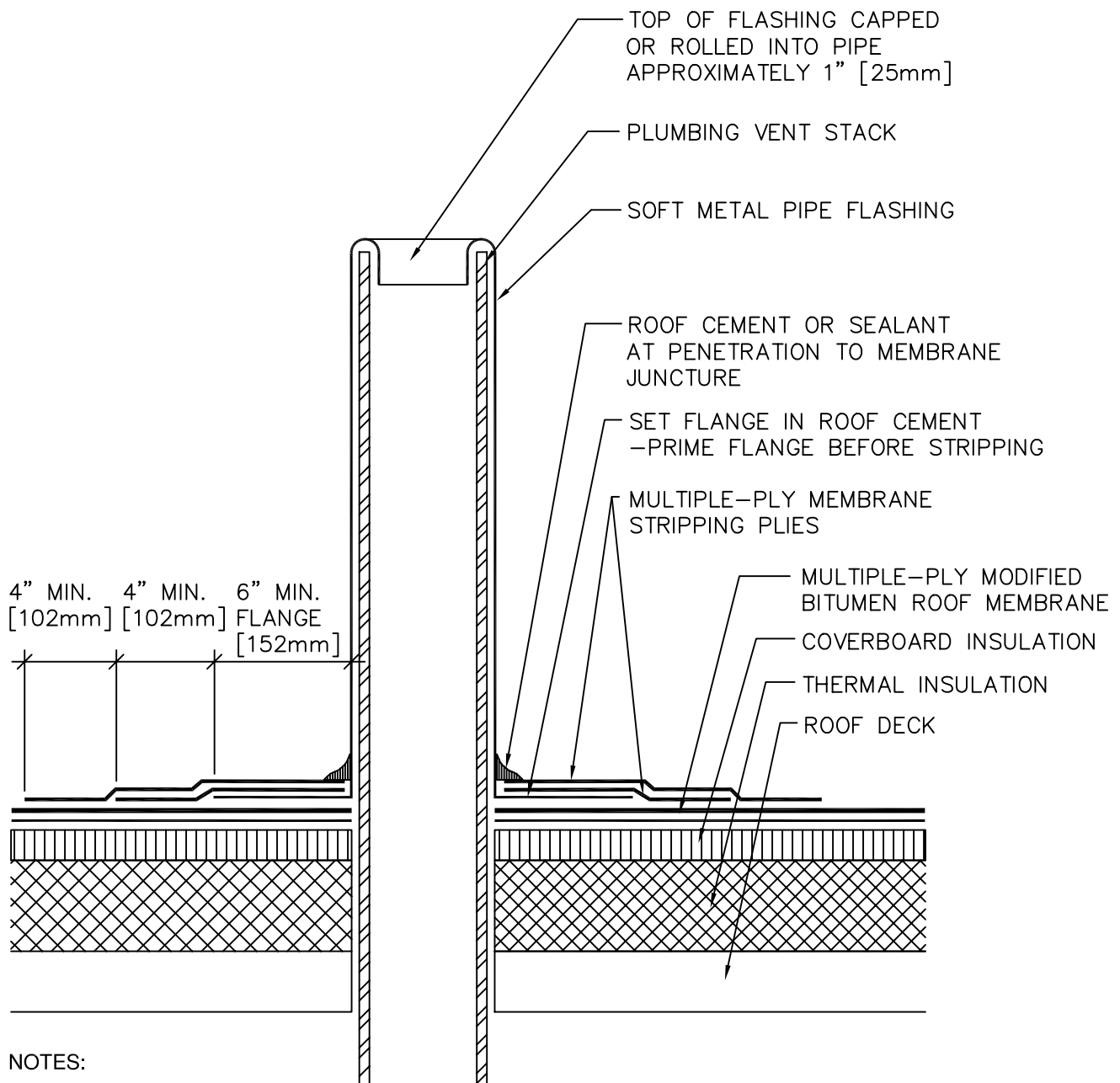
MB-20



NOTES:

1. SOFT METAL PIPE FLASHING:
 - SHEET LEAD: MINIMUM OF 2 1/2 LB. PER SQUARE FOOT [12 kg/m²] OR
 - SHEET COPPER: MINIMUM 16 OZ. [5 kg/m²].
2. IF USING COPPER FLASHING OVER AN IRON OR STEEL PIPE, INSERT A SEPARATOR SHEET (E.G., ASPHALT-SATURATED ROOFING FELT), WRAPPED AROUND PIPE, TO SEPARATE THE COPPER FLASHING FROM DIRECT CONTACT WITH PIPE, TO REDUCE GALVANIC ACTION.
3. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES [305mm] OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. (SEE TABLE 4.)
4. NRCA SUGGESTS THAT THE TOP STRIPPING PLY BE A HEAVY-WEIGHT POLYMER MODIFIED BITUMEN SHEET.

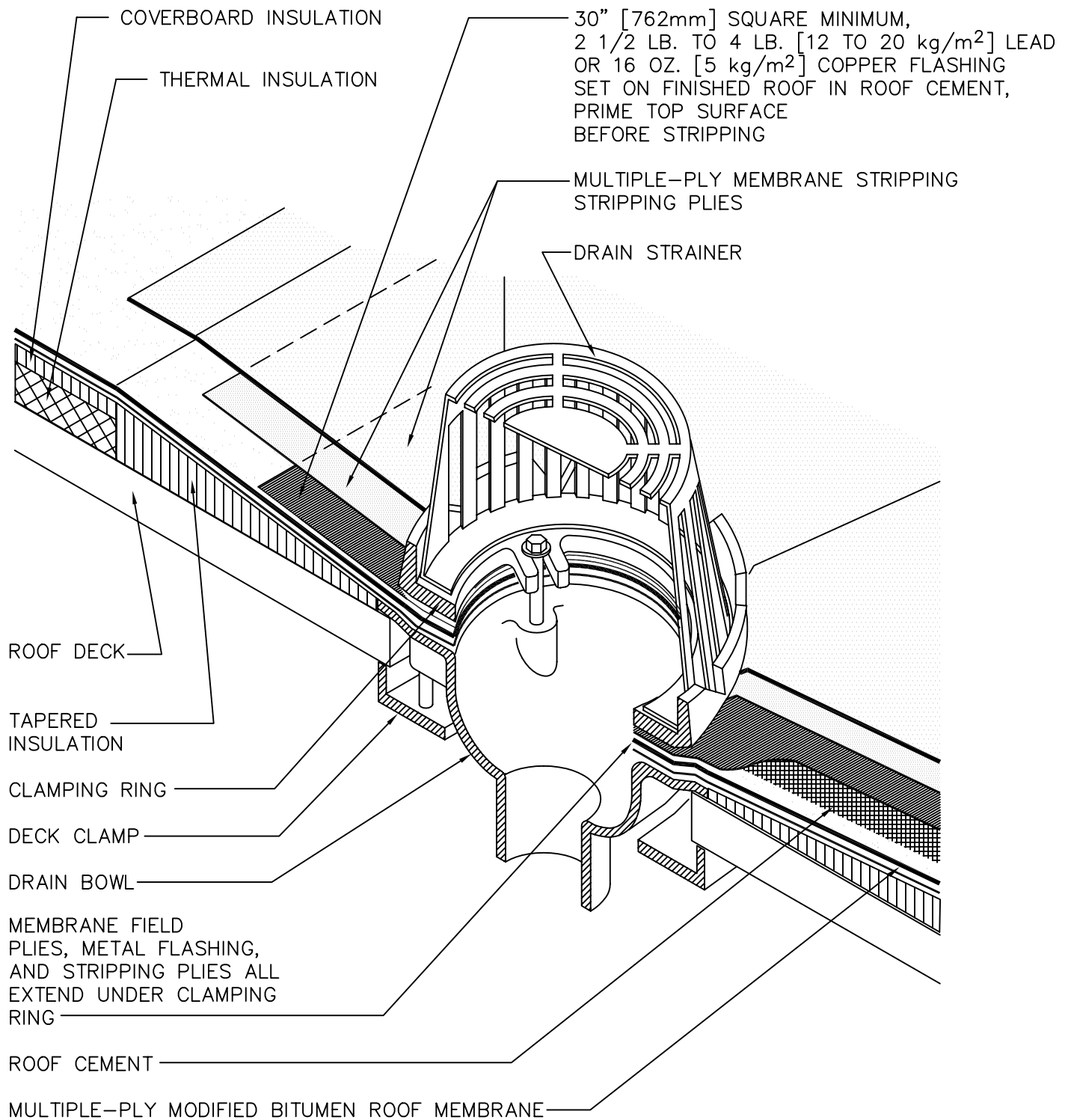
MEMBRANE ROOFING DETAILS



NOTES:

1. SOFT METAL PIPE FLASHING:
 - SHEET LEAD: MINIMUM OF 2 1/2 LB. PER SQUARE FOOT [12 kg/m²] OR
 - SHEET COPPER: MINIMUM 16 OZ. [5 kg/m²].
2. IF USING COPPER FLASHING OVER AN IRON OR STEEL PIPE, INSERT A SEPARATOR SHEET (E.G., ASPHALT SATURATED ROOFING FELT), WRAPPED AROUND PIPE, TO SEPARATE THE COPPER FLASHING FROM DIRECT CONTACT WITH PIPE, TO REDUCE GALVANIC ACTION.
3. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES [305mm] OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. (SEE TABLE 4.)
4. NRCA SUGGESTS THAT THE TOP STRIPPING PLIES BE A HEAVY-WEIGHT POLYMER BITUMEN SHEET.

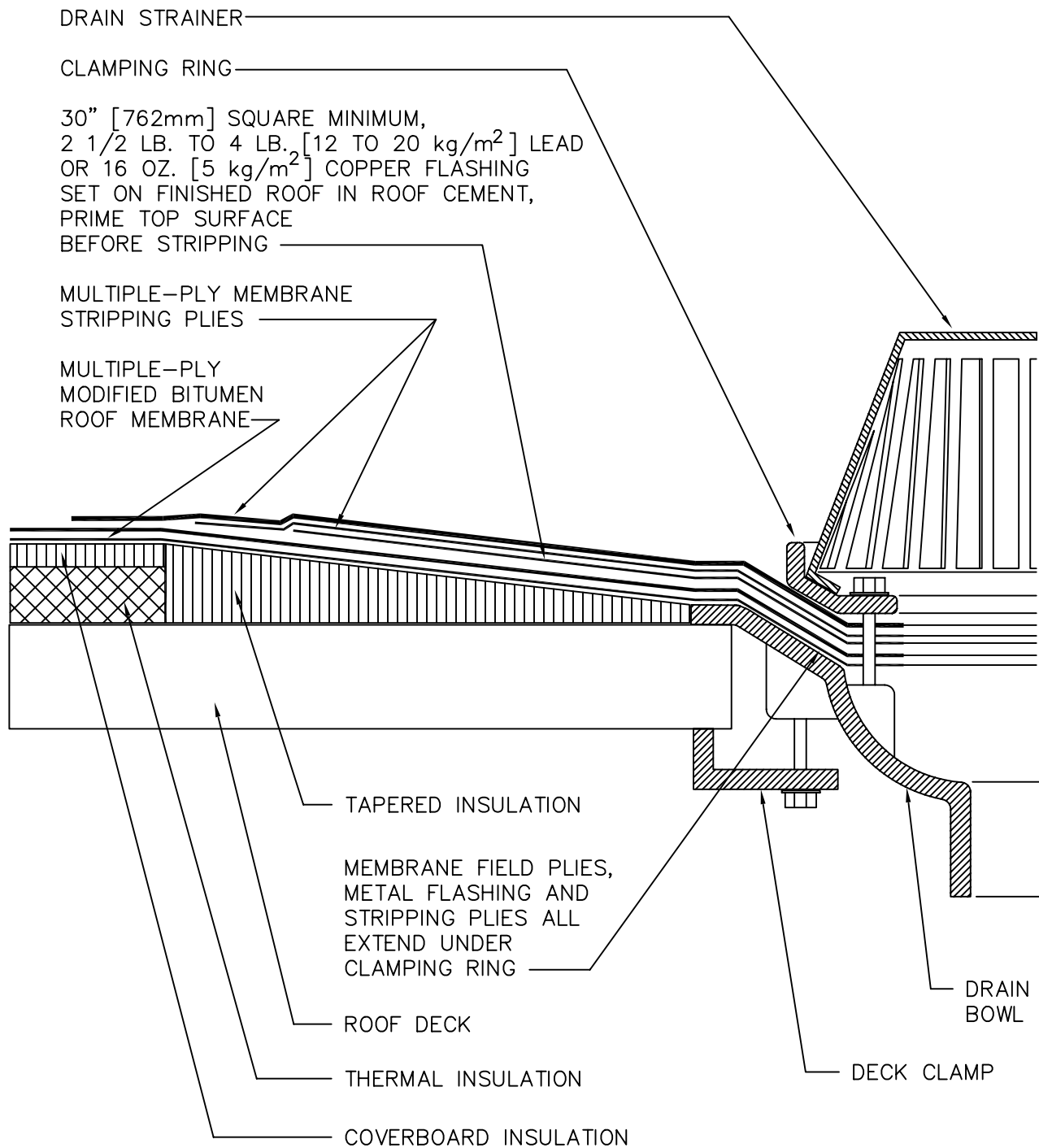
MEMBRANE ROOFING DETAILS



NOTES:

1. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
2. DO NOT APPLY COAL TAR OR DEAD LEVEL ASPHALT INTO DRAIN SUMP.

MEMBRANE ROOFING DETAILS



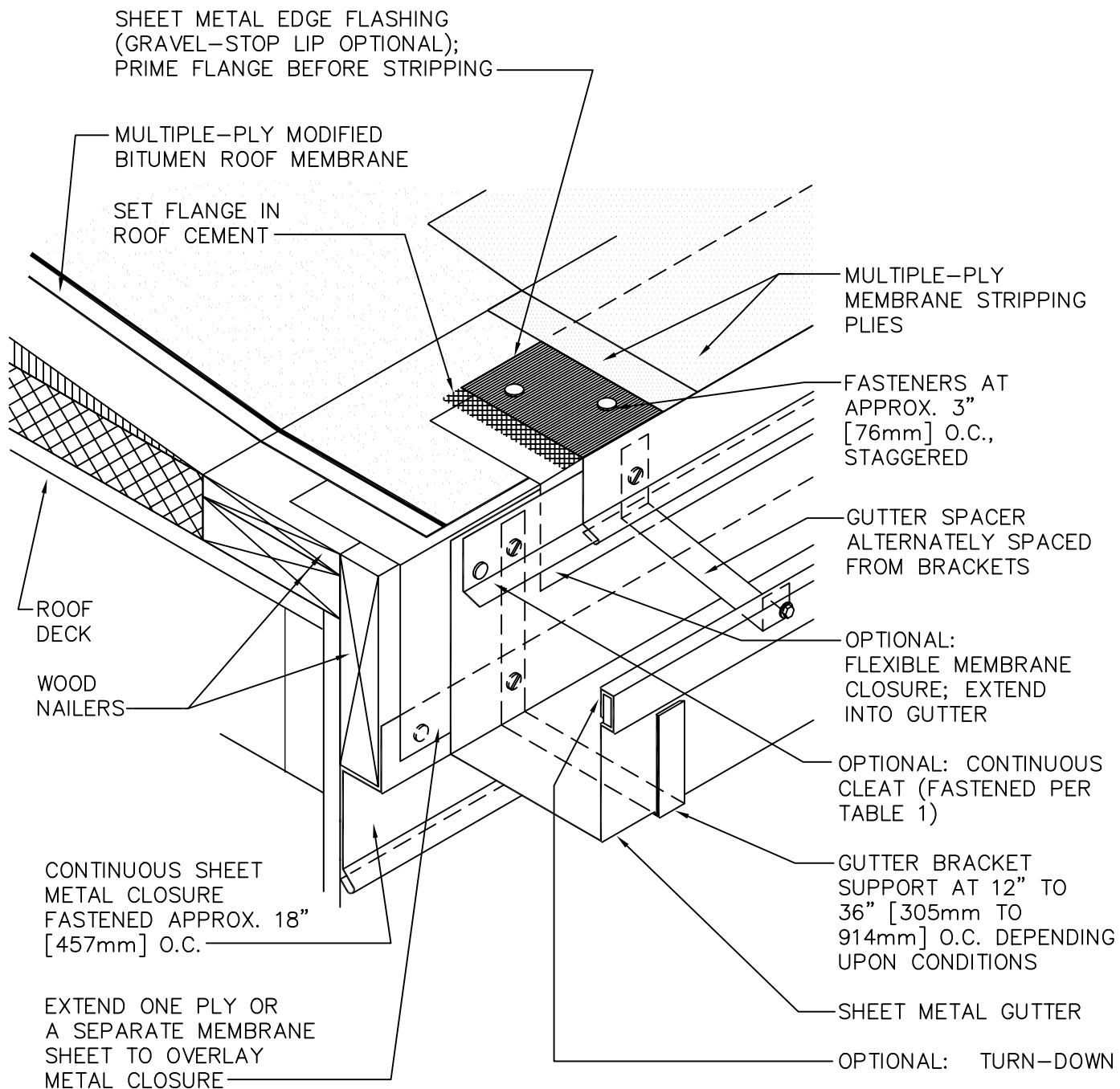
NOTES:

1. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
2. DO NOT APPLY COAL TAR OR DEAD LEVEL ASPHALT INTO DRAIN SUMP.

MEMBRANE ROOFING DETAILS

ROOF DRAIN

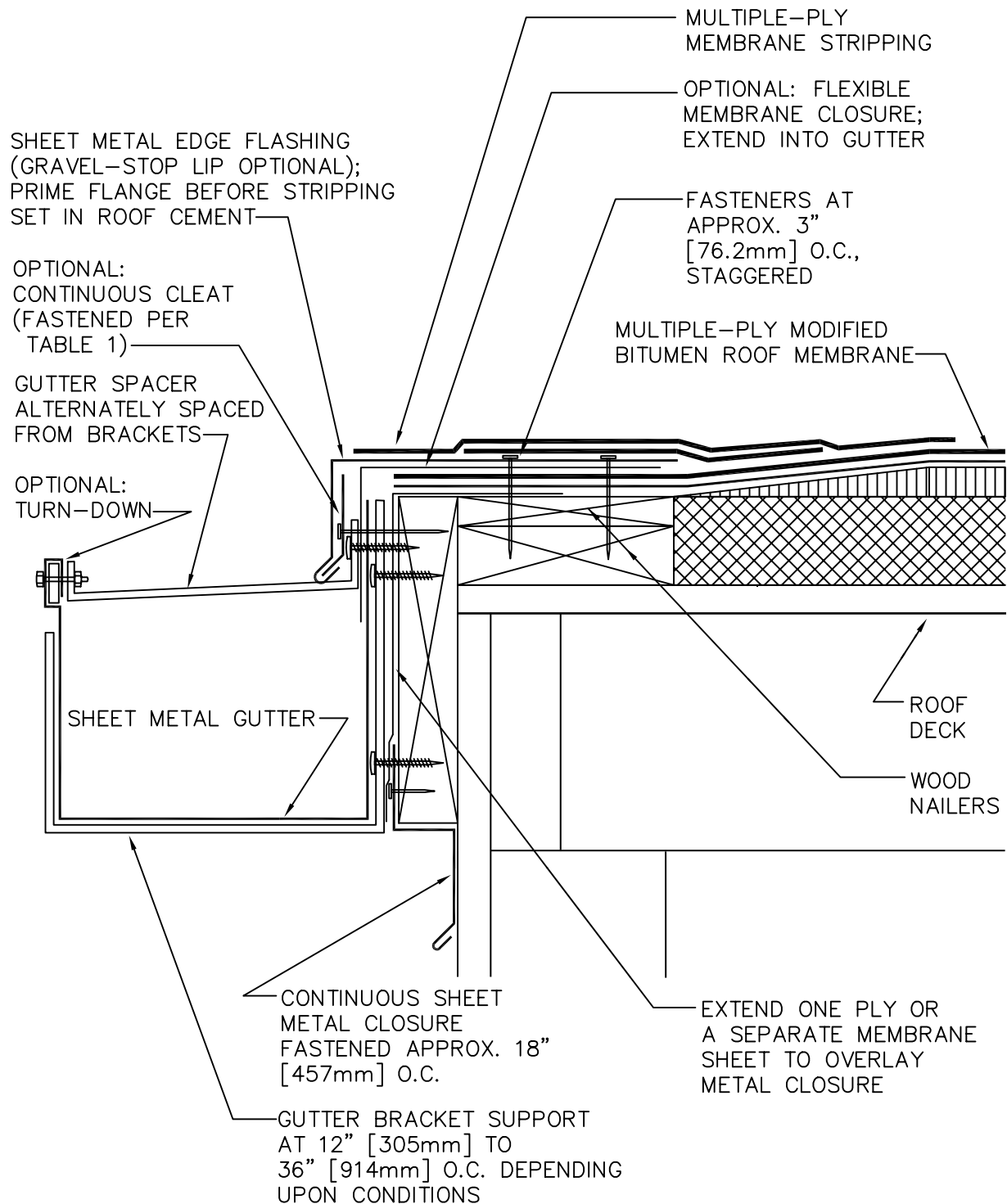
MB-23S



NOTES:

1. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS USING BUR-1 AND INTERIOR DRAINS OR THROUGH-CURB SCUPPERS TO DRAIN THE ROOF.
2. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
3. ATTACH WOOD NAILER TO WALL/DECK WITH SUITABLE FASTENERS.
4. DESIGN GUTTER EXPANSION JOINTS PLACED AT APPROPRIATE INTERVALS COMMENSURATE WITH TYPE OF METAL.

MEMBRANE ROOFING DETAILS



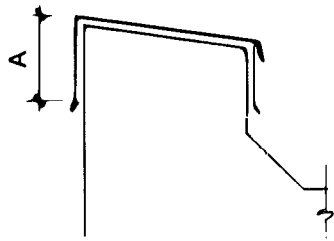
NOTES:

1. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS USING BUR-1 AND INTERIOR DRAINS OR THROUGH-CURB SCUPPERS TO DRAIN THE ROOF.
2. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
3. ATTACH WOOD NAILER TO WALL/DECK WITH SUITABLE FASTENERS.
4. DESIGN GUTTER EXPANSION JOINTS PLACED AT APPROPRIATE INTERVALS COMMENSURATE WITH TYPE OF METAL.

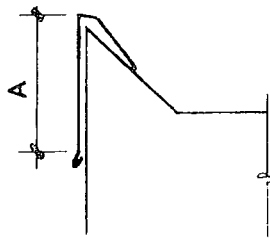
MEMBRANE ROOFING DETAILS

GAUGE OR THICKNESS GUIDE

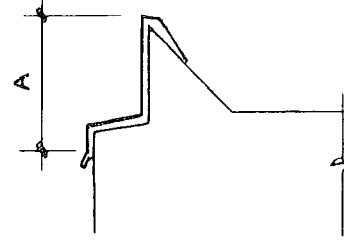
FOR METAL FASCIA EXPOSED TO VIEW



COPING



CAP FLASHING
AND FASCIA



VARIATIONS

RECOMMENDED MINIMUM GAUGES FOR FASCIA SHOWN ABOVE

EXPOSED FACE WITHOUT BRAKES "A" DIMENSION	CLEAT REQUIRED	GALVANIZED IRON	COLD ROLLED COPPER	ALUMINUM 3003-H14
UP TO 4" FACE	NO	26 GA.	16 OZ.	.032" (20 GA.)
4" TO 6" FACE	YES	26 GA.	16 OZ.	.040" (18 GA.)
6" TO 8" FACE	YES	24 GA.	16 OZ.	.050" (16 GA.)
8" TO 10" FACE	YES	22 GA.	20 OZ.	.064" (14 GA.)
10" TO 15" FACE	YES	20 GA.	ADD BRAKES TO STIFFEN	.080" (12 GA.)

NOTE:

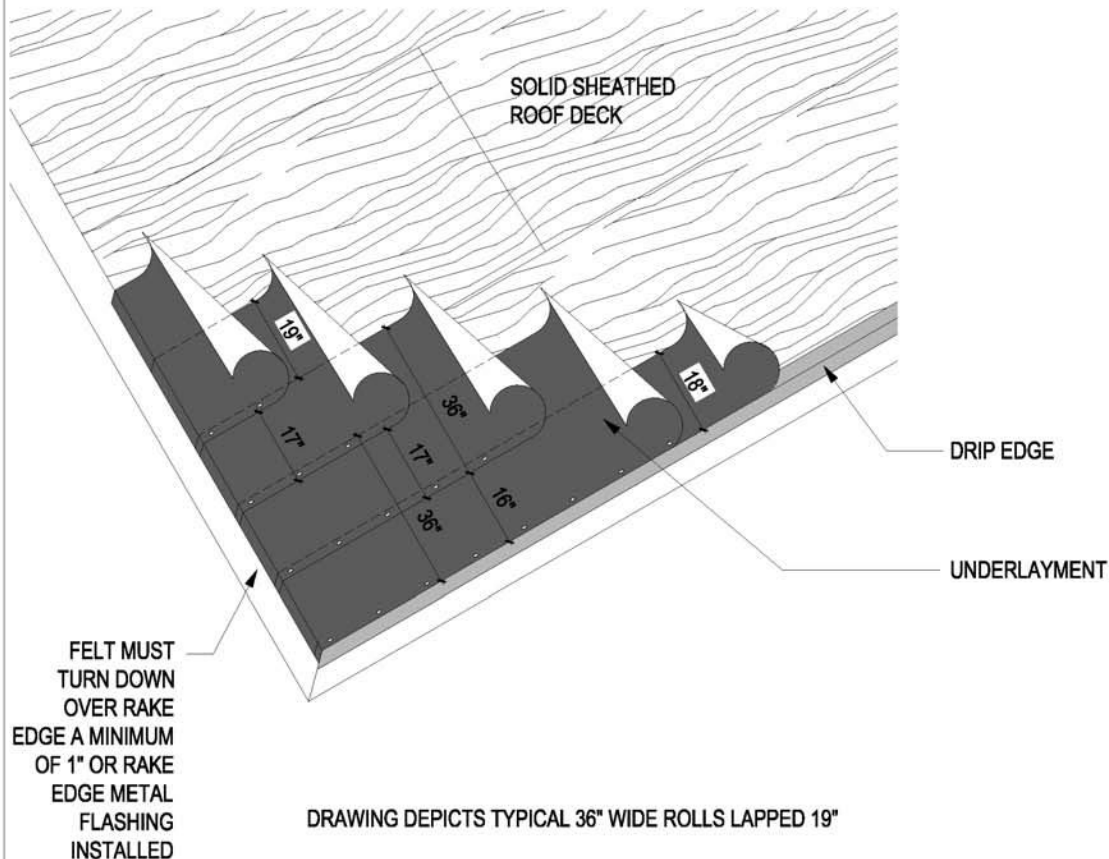
WHEN USING THE ABOVE TABLE, OTHER ITEMS SHOULD BE CONSIDERED, SUCH AS FASTENING PATTERN. FOR INSTANCE, IF THE METAL CAN ONLY BE FASTENED AT 10 FOOT INTERVALS, A HEAVIER GAUGE METAL WOULD BE REQUIRED. ALL CLEATS SHALL BE CONTINUOUS AND OF SAME MATERIAL OF EQUAL OR GREATER THICKNESS THAN THE FASCIA METAL USED.

TILE ROOF DETAIL

DOUBLE LAYER UNDERLAYMENT

(Required for 3:12 < Roof Slope < 4:12, Optional Upgrade 4:12 And Above)

MC-01B



Notes:

1. Ensure that the roof deck is properly fastened, clean and smooth before underlayment and roof tiles are applied.
2. Verify that the roof deck has no significant delamination, warpage, etc. Check for roof deck rot or damage.
3. Make sure repairs are made to the roof deck as necessary to meet local building codes.
4. Apply a half sheet parallel to eave. Fasten underlayment sufficient to hold the felt in place.
5. Completely cover the starter sheet with a full-width sheet.
6. Most problems with water-shedding roof installations occur from water that migrates through improper flashing of the tile, wind-driven rain or ice damming. Because of this possibility, the underlayment is critical to the success of the roof system.
7. Underlayment shall extend a minimum of 4" up vertical wood blocking or wall.
8. Lap succeeding sheets to ensure double layers over entire roof. End laps (vertical laps) shall be a minimum of 6".

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

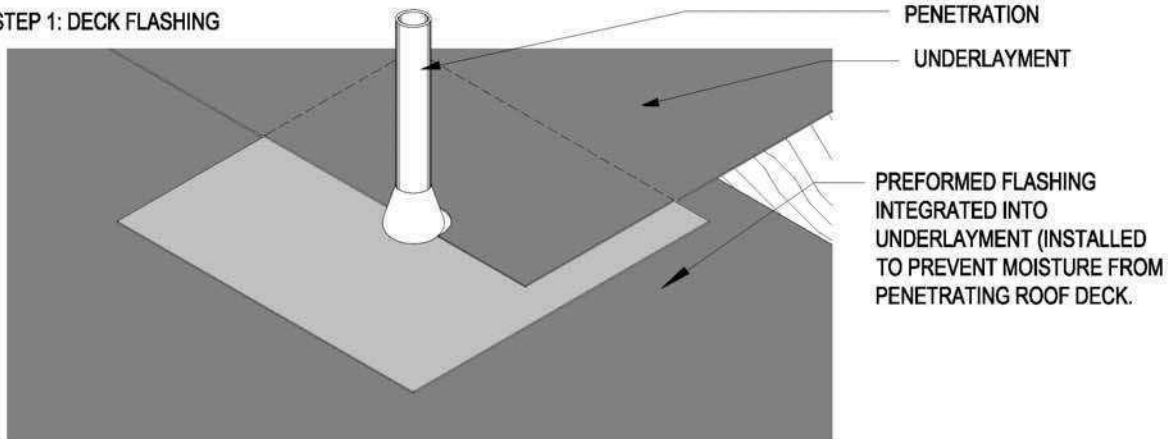
TILE ROOF DETAIL

TILE PENETRATION FLASHING

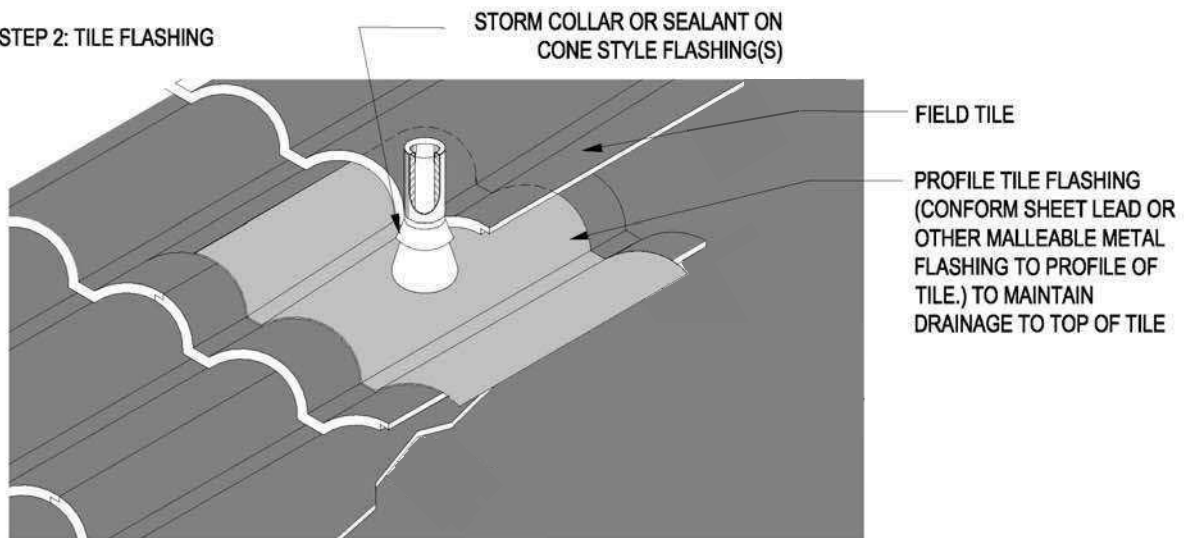
MC-02

(Shows Required Two-Step Deck And Tile Flashing)

STEP 1: DECK FLASHING



STEP 2: TILE FLASHING



ALL PENETRATIONS SHOULD BE LOCATED IN SUCH A MANNER AS TO NOT IMPEDE FLASHINGS AT ROOF TRANSITION.

Notes:

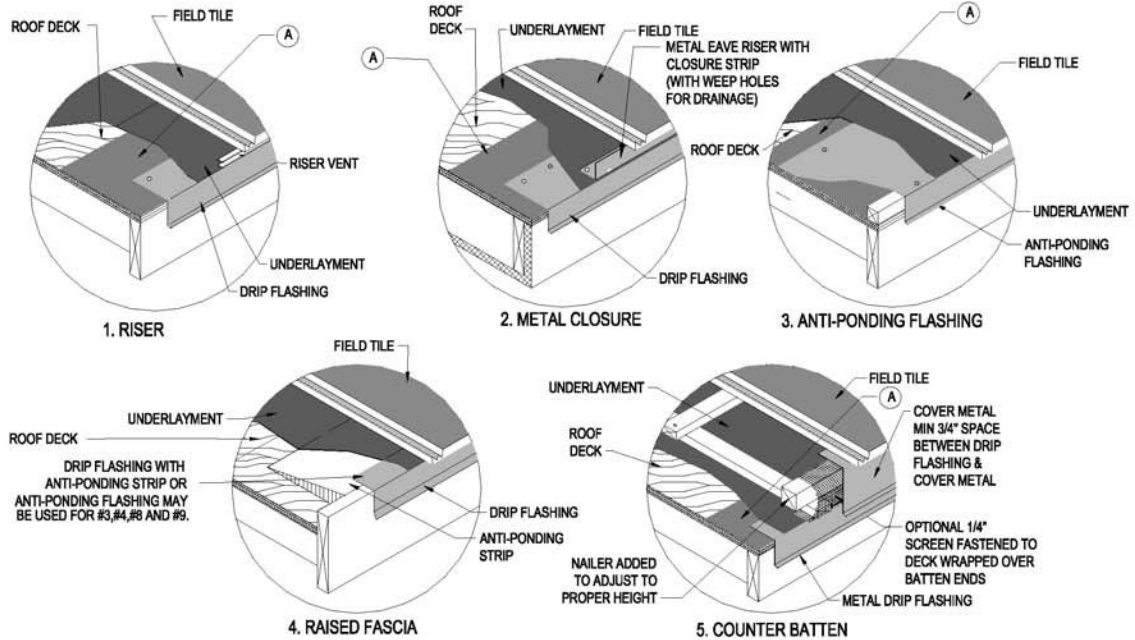
1. For recommended underlayment and fastening requirement, see Table 1A and 1B.
2. All penetrations require a deck flashing and tile flashing.
3. Tile flashings shall extend onto the tile a minimum of 4" on flat tile and a minimum of 1" past the crown of a profiled tile.
4. Dimensions shown are minimums and are intended to be approximate to allow for reasonable tolerances due to field conditions.

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

TILE ROOF DETAIL

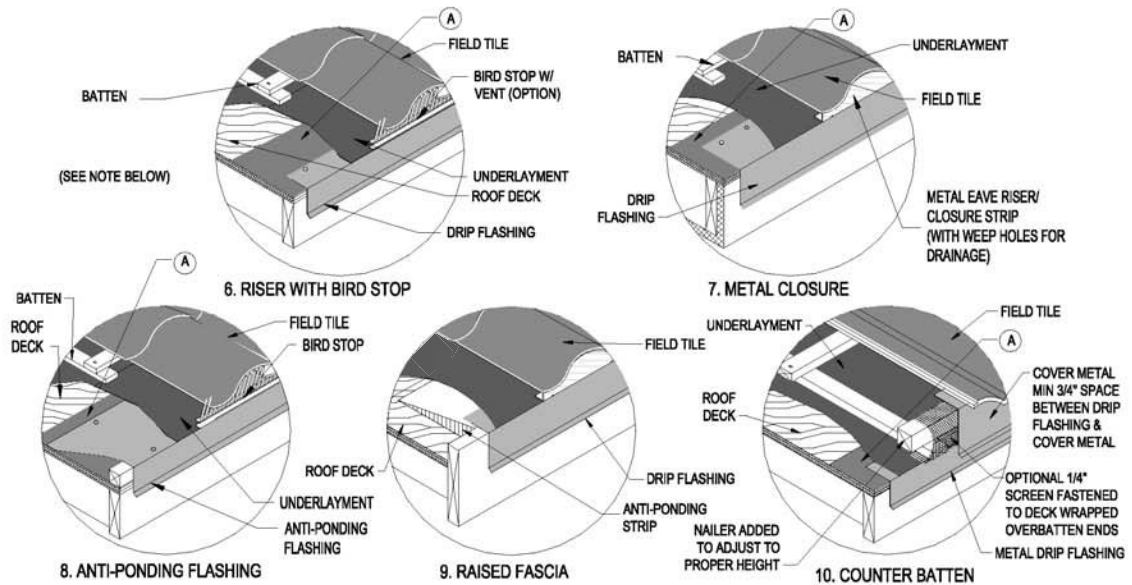
DOWN SLOPE EAVE DETAILS

MC-10



LOW (FLAT) PROFILE TILES

MEDIUM AND HIGH PROFILE TILES



Notes:

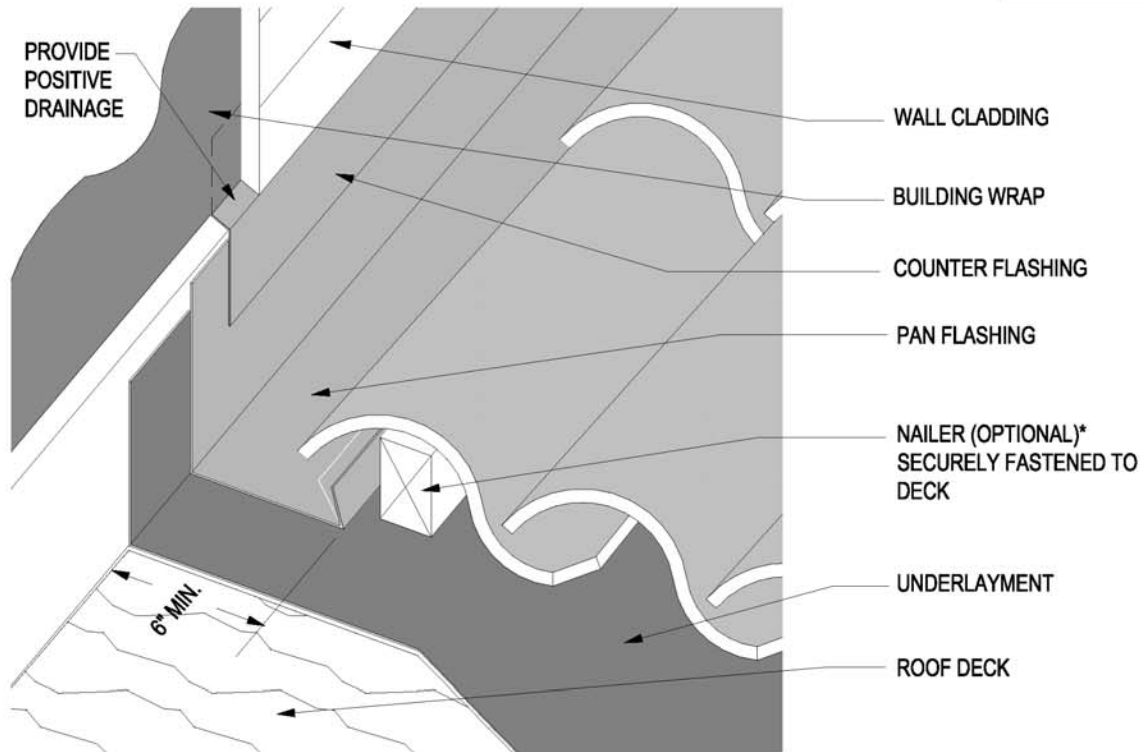
1. Bird stop is required on High profile tile and optional on Low and Medium profile tile unless required by local building official.
2. Bird stop may be either solid or vented.
- A. Optional Separator ply or sheet of No.15 asphalt-saturated felt or other appropriate material.

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

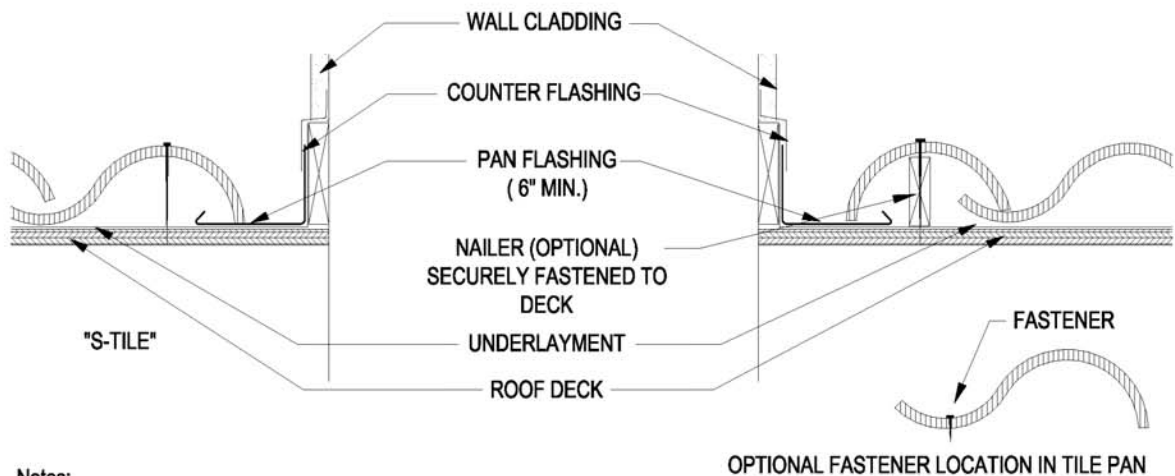
TILE ROOF DETAIL

SIDEWALL DETAILS - CLAY 'S' TILE

MC-13



*Note: Tiles to be installed in such a fashion as to prevent water diversion or blockage. For recommended underlayment and fastening requirement, see Table 1A and 1B.



Notes:

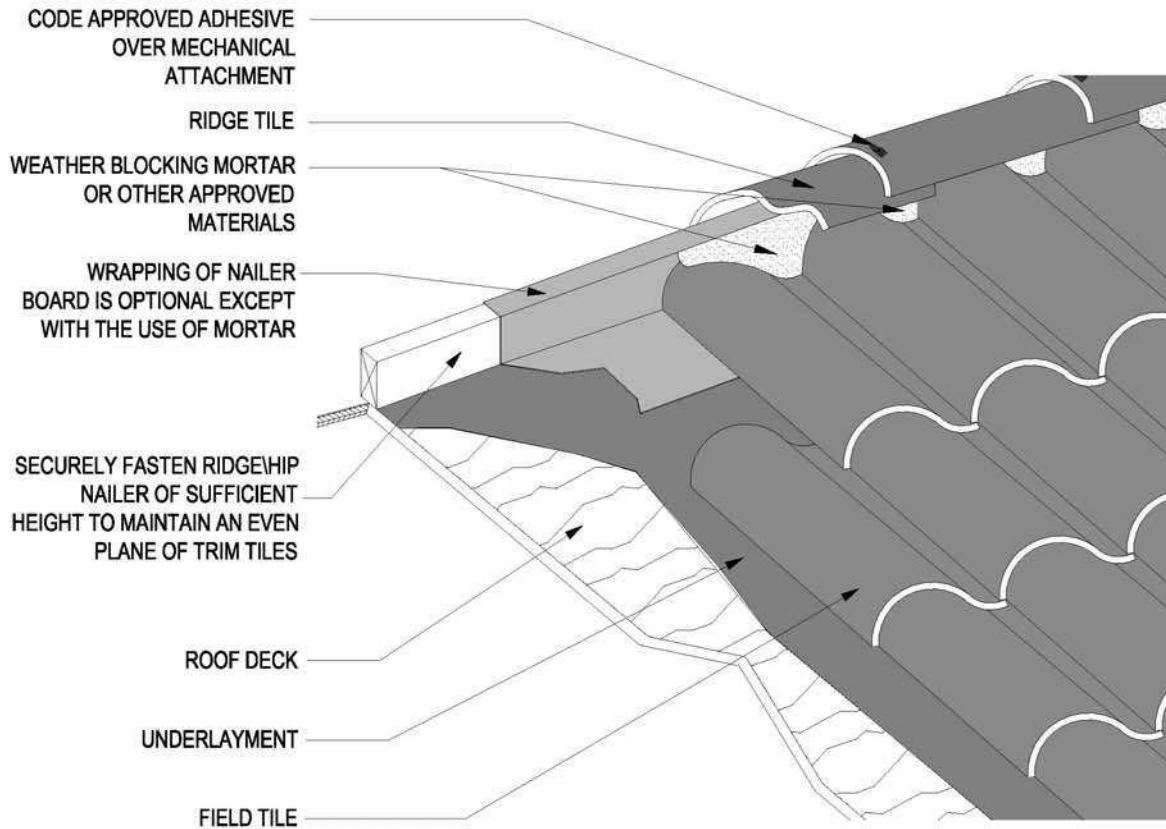
1. Underlayment should extend a minimum of 4" up vertical wood blocking or wall.
2. See MC-12B for additional flashing details.

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

TILE ROOF DETAIL

HIP AND RIDGE

MC-18A



Openings at hips, ridges and head walls including chimneys, skylights, solar panels, and downslope horizontal abutments shall be fitted with weather blocking material to keep water on the surface of the field tile.

Wrapping of nailer board is optional except with the use of mortar. (All profiles of tile)

Notes:

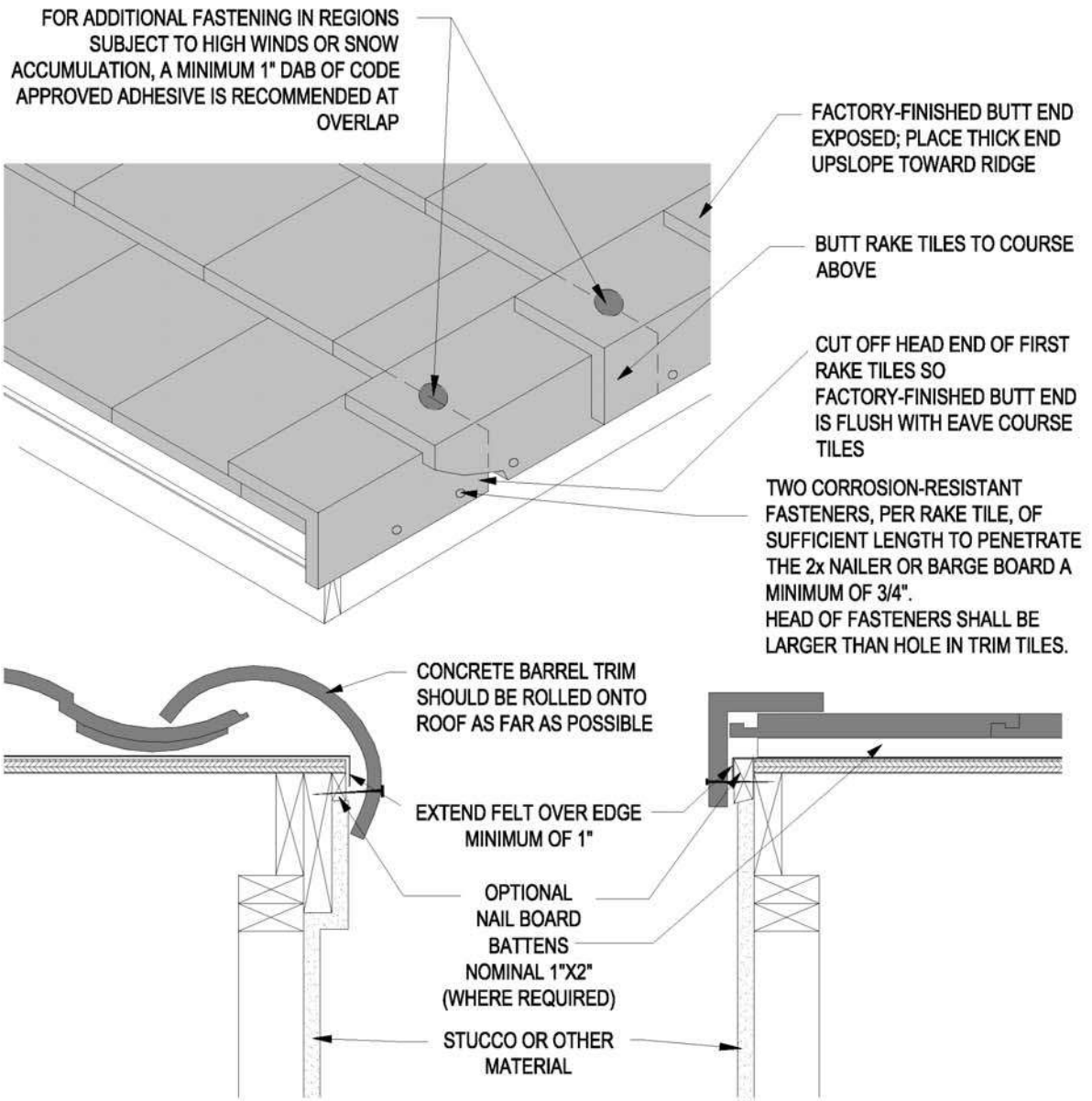
1. For recommended underlayment and fastening requirement, see Table 1A and 1B.
2. All hip and ridge tile are required to have a code approved adhesive or special clip between laps of trim tile to cover nail hole and create a bond between ridge tiles.
3. Battens for tiles with protruding anchor lugs are optional for slopes between 3:12 and 7:12. Direct deck attachment of tile as approved by local building official will be allowed.
4. Dimension shown are minimum and are intended to be approximate to allow for reasonable tolerance due to field conditions, and are practices.

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

TILE ROOF DETAIL

RAKE TILE INSTALLATION

MC-19B



Notes:

1. Dimensions shown are minimums and are intended to be approximate to allow for reasonable tolerances due to field conditions, and area practices.
2. Rake tiles must be fastened into a minimum nominal 2" gable fascia or equivalent in dimension.
3. The fasteners must penetrate a minimum of 3/4" into dimensional wood lumber.

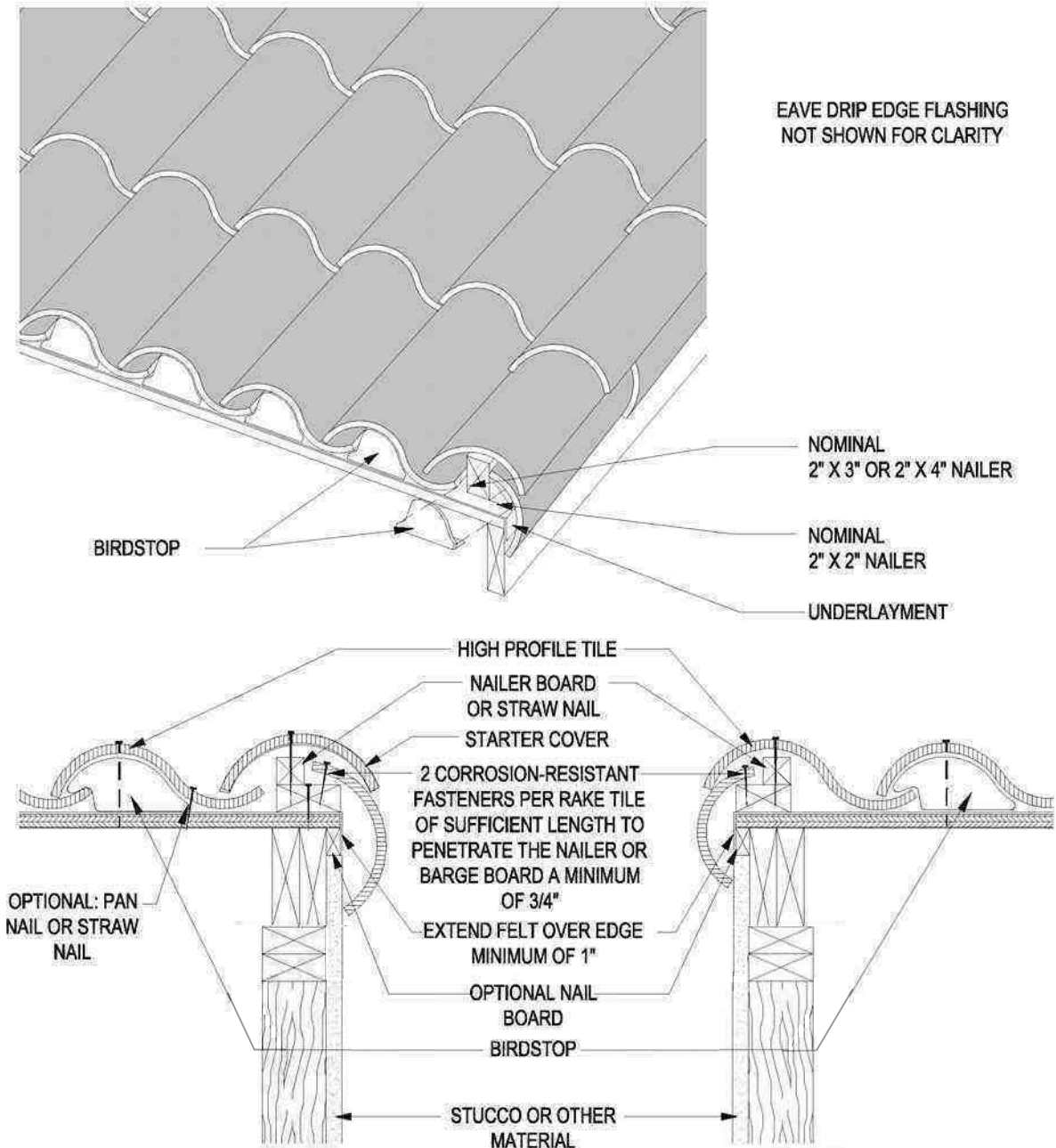
Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.

TILE ROOF DETAIL

GABLE \ EAVE INSTALLATION

(CLAY TILE INSTALLATIONS)

MC-20A



Notes:

1. Dimensions shown are minimums and are intended to be approximate to allow for reasonable tolerances due to field conditions.

Drawing shown depicts the application of all tile profiles. Unless otherwise noted it would apply to either concrete or clay tiles.



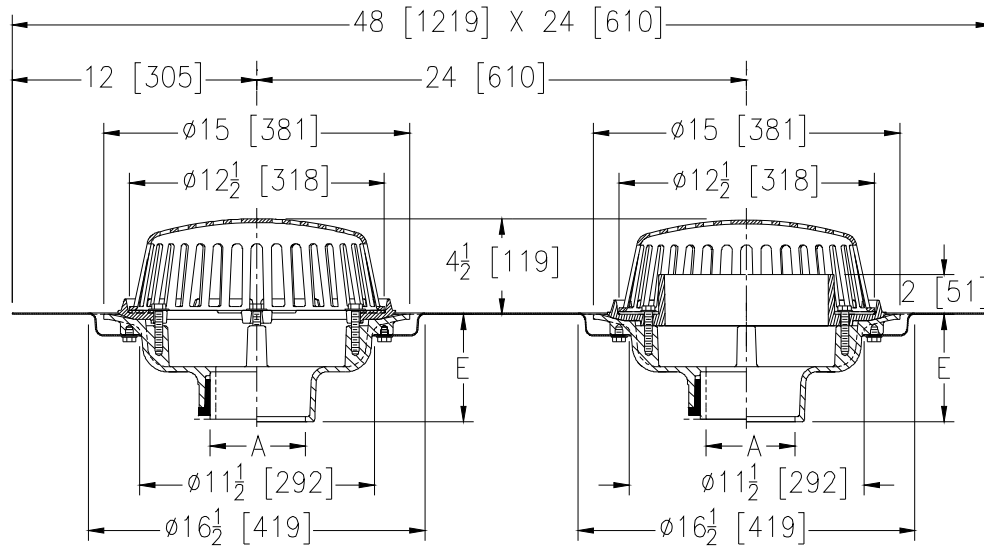
Z163

15 [381] DIAMETER COMBINATION MAIN ROOF &
OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES &
DOUBLE TOP-SET® DECK PLATE

SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



A - Pipe Size In.[mm]	Approx. Wt. Lbs. [kg]	Dome Open Area Sq. In. [cm ²]
2, 3, 4 [51, 76, 102]	73 [33]	103 [665]
6 [152]	74 [34]	
8 [203]	75 [34]	

ENGINEERING SPECIFICATION: ZURN Z163

15" [381 mm] Diameter roof drain and overflow drain, Dura-Coated cast iron bodies with combination membrane flashing clamp/gravel guards, double Top-Set® deck plate, and low silhouette Poly-Domes.

OPTIONS (Check/specify appropriate options)

PIPE SIZE

3, 4, 6 [51, 76, 152]
2, 3, 4, 6, 8 [51, 76, 102, 152, 203]
2, 3, 4, 6, 8 [51, 76, 102, 152, 203]
2, 3, 4 [51, 76, 102]

(Specify size/type) OUTLET

_____ IC Inside Caulk
_____ IP Threaded
_____ NH No-Hub
_____ NL Neo-Loc

E BODY HT. DIM.

5-1/4 [133]
3-3/4 [95]
5-1/4 [133]
4-5/8 [117]

PREFIXES

_____ Z D.C.C.I. Body with Poly-Dome*
_____ ZA D.C.C.I. Body with Aluminum Dome
_____ ZC D.C.C.I. Body with Cast Iron Dome

SUFFIXES

_____ -AR Acid Resistant Epoxy Coated Finish
_____ -DE Deck Extension
_____ -DR Top-Set® Drain Riser
_____ -E Static Extension 1 thru 4 [25 thru 102] (Specify Ht.)
_____ -EA Adjustable Extension Assembly
2-1/8 thru 3-1/2 [54 thru 89]
_____ -G Galvanized Cast Iron
_____ -HD 6-3/4 [171] High Aluminum Dome Strainer
(148 in² [955 cm²] Open Area)(ZA Only)
_____ -SC Secondary Clamping Collar

_____ -SS Stainless Steel Mesh Screen Over Dome
_____ -TC Neo-Loc Test Cap Gasket
(2,3,4 [51,76,102] NL Bottom Outlet Only)
_____ -VP Vandal Proof Secured Top
_____ -W3 3 [76] Internal Water Dam
_____ -W4 4 [102] Internal Water Dam
_____ -XJ Vertical Expansion Joint (See Z190)
_____ -84 Stainless Steel Perforated Gravel Guard
_____ -85 Stainless Steel Perforated Extension
_____ -89 2 [51] High External Water Dam
(Replaces Internal Dam)

* Regularly furnished unless otherwise specified.