

LEAK REMEDIATION FOR LANEY COLLEGE BUILDINGS A, B, F, & G – PHASE 1

DOCUMENT 00 9113

ADDENDA

BID NO. 17-18/01

Peralta Community College District

**Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1
900 Fallon Street Oakland, CA 94607**

July 27, 2017

ADDENDUM No. 1

This addendum supersedes items of the original contract documents wherein it is inconsistent with it. All other conditions remain unchanged. The following changes, modifications, corrections, additions or clarifications shall apply to the contract documents and shall be made a part of and subject to all of the requirements thereof as if originally specified or shown. It is the responsibility of the proposer to review the list of attachments to ensure that the addendum is full and complete. This Addendum modifies the original RFP Documents for the above RFP. **Acknowledge receipt of this addendum in the space provided on the Proposal Form. Failure to do so may subject Proposer to disqualification.**

Revisions to bid documents:

The original **advertisement** stated that in order to bid, contractors must have a class “B” **and** “C39”. The published bid manual and Document 00 1113 has the corrected license requirement of “**B**” **only** in order to bid.

Document 00 01 15 List of Drawings revised to include additional drawings A201 (Photos), A202 (Photos), A203 (Photos), and A602 (Podium Waterproofing Details)

Document 00 11 13 Notice Inviting Bids, Section 1.01 originally stated that bids were due at 2pm on July 31, 2017. **The new bid due date is 2pm, August 2, 2017.**

Document 00 11 13 Notice Inviting Bids, Section 1.02 Project Description has been clarified and base bid work has changed from Building B and F courtyards to **including Building B only**. Document 00 11 13 resubmitted in its entirety.

Document 00 21 13, Instructions to Bidders resubmitted in its entirety to account for change in basis of award.

Document 00 41 13, Bid Form, resubmitted in its entirety to account for base bid Building B only, alternate modifications, and removal of allowances.

Document 00 51 00, Notice of Award, item 2 originally stated contractor must comply with delivering original sets of documents within 20 days. **The new delivery date has been reduced to 5 days.** Item 4 originally stated Owner will return a fully signed counterpart of the Agreement within 21 days. **The new return date is 10 days.** Document 00 51 00 resubmitted in its entirety.

Document 00 52 00 Agreement 5.01 List of Drawings revised to include additional drawings A201 (Photos), A202 (Photos), A203 (Photos), and A602 (Podium Waterproofing Details)

Document 01 11 00 Summary of Work resubmitted in its entirety. Modifications highlighted in red.

Document 01 50 00 Temporary Facilities and Controls, Section 1.09, A. adds verbiage concerning complying with City of Oakland noise ordinance. Document 01 50 06 resubmitted in its entirety. Modifications highlighted in red.

Document 02 4119 Selective Demolition resubmitted in its entirety. Modifications highlighted in red.

Document 07 1413 Hot Fluid-Applied Rubberized Asphalt resubmitted in its entirety. Modifications highlighted in red.

Document 07 9200 Joint Sealants resubmitted in its entirety. Modifications highlighted in red.

Document 07 9500 Expansion Control resubmitted in its entirety. Modifications highlighted in red.

Document 22 1423 Storm Drainage Piping Specialties resubmitted in its entirety. Modification highlighted in red.

Revisions have been made to the previously provided 70% CD Not for Construction or Permitting drawings. Replace the ones originally issued with those attached. Drawings include:

A001 Cover Sheet, Scope of Work, Abbreviations, Legend, Maps and Index
A011 Partial Site Plan
A101 Partial Demolition Plans – Buildings A and B
A102 Partial Demolition Plan – Building F
A103 Partial Demolition Plan – Building G
A121 Partial Construction Plans – Buildings A and B
A122 Partial Construction Plan – Building F
A123 Partial Construction Plan – Building G
A201 Photos
A202 Photos
A203 Photos
A601 Podium Waterproofing Details
A602 Podium Waterproofing Details

Additional drawing to bid documents:

Refer to Peralta website for the following:

<http://web.peralta.edu/purchasing/documents-list-of-current-bids-rfps-and-rfqs/>

- 100% Bid plans for construction
- Supplementary Plumbing Reference Set 2017 07 26
- Plumbing Matrix

END OF DOCUMENT

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

DOCUMENT 00 4113

BID FORM

TO THE BOARD OF TRUSTEES OF THE PERALTA COMMUNITY COLLEGE DISTRICT

THIS BID IS SUBMITTED BY:

(Firm/Company Name)

Re: Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1, 900 Fallon Street, Oakland, CA 94607, Project No. 1950-07, Bid No. 17-18/01

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with **THE PERALTA COMMUNITY COLLEGE DISTRICT** in the form included in the Contract Documents, Document 00 5200 (Agreement), to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Contract Documents, Document 00 1113 (Notice Inviting Bids), and Document 00 2113 (Instructions to Bidders), including, without limitation, those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for 60 Days after the day of Bid opening, unless there is a bid protest, then 90 days after the day of bid opening.
3. In submitting this Bid, Bidder represents that Bidder has examined all of the Contract Documents, performed all necessary Pre-Bid investigations, received the Pre-Bid conference minutes (if any), and received the following Addenda:

Addendum Number	<u>ADDENDUM DATE</u>	Signature of Bidder

4. Based on the foregoing, Bidder proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in the following Schedule of Bid Prices:

BID PRICE

Bid items are described in Section 01 1100 (Summary of Work). Basis for award is described in 00 2113 (Instructions to Bidders)

ITEM	DESCRIPTION	TOTAL
1	Base Bid: Building B Work as described in the Summary Section.	
2	Add Alternate #1: At Courtyard B, provide Water Repellent at brick and concrete and repointing of brick. Refer to Summary Section for additional information.	
3	Add Alternate #2: Apply Base Bid scope to Courtyard A	
4	Add Alternate #3: Apply Base Bid scope to Courtyard F	
5	Add Alternate #4: Apply Base Bid scope to Courtyard G	
6	Add Alternate #5: Water Repellent at brick and concrete and repointing of brick for Courtyards A, F, and G.	
	Total	\$

Total Bid Price:

(Total Bid Price in Words)

5. Subcontractors for work included in all Bid items are listed on Document 00 4330 (Subcontractors List) submitted herewith.
6. The undersigned Bidder understands that Owner reserves the right to reject this Bid.
7. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Award, is mailed or delivered to the undersigned Bidder within the time described in Paragraph 2 of this Document 00 4113 or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Document 00 2113 (Instructions to Bidders) within the times specified therein.
8. Notice of Award or request for additional information may be addressed to the undersigned Bidder at the address set forth below.
9. The undersigned Bidder herewith encloses cash, a cashier's check, or certified check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in form specified in Document 00 2113 (Instructions to Bidders), in the amount of ten percent (10%) of the Total Bid Price and made payable to **THE PERALTA COMMUNITY COLLEGE DISTRICT**.
10. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Document 00 7200 (General Conditions) and to complete all Work within the time specified in Document 00 5200 (Agreement).
11. The undersigned Bidder agrees that, in accordance with Document 00 7200 (General Conditions), liquidated damages for failure to complete all Work in the Contract within the time specified in Document 00 5200 (Agreement) shall be as set forth in Document 00 5200.
12. The names of all persons interested in the foregoing Bid as principals are:

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and

secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full.

NAME OF BIDDER: _____

licensed in accordance with an act for the registration of Contractors, and with license number: _____ Expiration: _____.

(Place of Incorporation, if Applicable) (Principal)

(Principal)

(Principal)

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

(Signature of Bidder)

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Address: _____

Contractor's Representative(s): _____
(Name/Title)

(Name/Title)

(Name/Title)

Officers Authorized to Sign Contracts _____
(Name/Title)

(Name/Title)

(Name/Title)

Telephone Number(s):

(Area Code) (Number)

(Area Code) (Number)

Fax Number(s):

(Area Code) (Number)

(Area Code) (Number)

Date of Bid:

END OF DOCUMENT

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

DOCUMENT 00 5100

NOTICE OF AWARD

Dated _____

TO: _____

ADDRESS: _____

CONTRACT NO.: _____

CONTRACT FOR: **Peralta Community College District,
Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1
900 Fallon Street, Oakland, CA 94607**

The Contract Sum of your contract is _____ Dollars (\$_____).

1. Five copies of the proposed Contract Documents listed below accompany this Notice of Award.
2. You must comply with the following conditions precedent by **[5:00 p.m.]** of the **[5th Day]** following the date of this Notice of Award, that is, by **[Day of the Week, Month Day, 201____]**.
 - a. Deliver to Owner **[four]** fully executed counterparts of Document 00 5200 (Agreement). Each copy of Document 00 5200 (Agreement) must bear your original signature on the signature page and your initials on each page.
 - b. Deliver to Owner three originals of Document 00 6113.13 (Construction Performance Bond), executed by you and your surety.
 - c. Deliver to Owner three originals of Document 00 6113.16 (Construction Labor and Material Payment Bond), executed by you and your surety.
 - d. Deliver to Owner original set of the insurance certificates with endorsements required under Document 00 7316 (Supplementary Conditions – Insurance).
 - e. Deliver to Owner four original copies of Document 00 6536 (Guaranty), each executed by you.
3. Failure to comply with these conditions within the time specified will entitle Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid security forfeited.
4. Within **[10 Days]** after you comply with the conditions in Paragraph 2 of this Document 00 5100, Owner will return to you one fully signed counterpart of Document 00 5200 (Agreement) with **4** copies of the Project Manual (including Specifications and Drawings) and **4** sets of full-size Drawings.
5. Before you may start any Work at the Site, you must attend a preconstruction conference. The preconstruction conference may be arranged through Stephen Daniels, (415) 214-2514. Questions regarding bonds and insurance may be directed to Stephen Daniels.

6. Upon commencement of the Work, you and each of your Subcontractors shall certify and provide Owner copies of payroll records on forms provided by the Division of Labor Standards Enforcement, in accordance with California Labor Code §1776.

OWNER

BY: _____
(Title)

(Print Name)

ATTEST: _____
Secretary

(Print Name)

AUTHORIZED BY **[CITY / COUNTY / DISTRICT]** RESOLUTION:

NO: _____

ADOPTED: _____, **[201__]**

[Copy of Resolution Attached]

END OF DOCUMENT

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

DOCUMENT 00 5200

AGREEMENT

THIS AGREEMENT, dated this [date] day of [Month], [201____], by and between [Name of Contractor] whose place of business is located at [Address of Contractor] (“Contractor”), and Peralta Community College District acting under and by virtue of the authority vested in Owner by the laws of the State of California.

WHEREAS, Owner, by its Resolution No. [insert number] adopted on the [date] day of [Month, Year] awarded to Contractor the following Contract:

Project No. 2466, Bid No. 13-14/22

**Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1
at
900 Fallon Street, Oakland, CA 94607**

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and Owner agree as follows:

ARTICLE 1 - SCOPE OF WORK OF THE CONTRACT

1.01 Work of the Contract

- A. Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions of the Contract Documents.

1.02 Price for Completion of the Work

- A. Owner shall pay Contractor the following Contract Sum (**Contract Sum**) for completion of Work in accordance with Contract Documents as set forth in Contractor’s Bid, attached hereto.
- B. The Contract Sum includes all allowances (if any).

ARTICLE 2 - COMMENCEMENT AND COMPLETION OF WORK

2.01 Commencement of Work

- A. Contractor shall commence Work on the date established in the Notice to Proceed.
- B. Owner reserves the right to modify or alter the Commencement Date.

2.02 Completion of Work

- A. Contractor shall achieve Substantial Completion of the entire Work within **103 Days** from the Commencement Date.
- B. Contractor shall achieve Final Completion of the entire Work **148 Days** from the Commencement Date.

ARTICLE 3 - PROJECT REPRESENTATIVES

3.01 Owner’s Project Manager

The Chancellor (or his/her designee) shall act as Owner’s Representative in all matters relating to the Contract Documents.

- 3.02 Owner’s Chancellor on behalf of its Board of Trustees, and in accordance with District Board Policies and Administrative Procedures, shall have final authority over all matters pertaining to the Contract Documents and shall have sole authority to modify the Contract Documents on behalf of

Owner, to accept work, and to make decisions or actions binding on Owner, and shall have sole signature authority on behalf of Owner. The Chancellor, at his/her discretion, may delegate some portion of Chancellor's authority to Owner's Vice Chancellor of General Services or other representative.

3.03 Contractor's Project Manager

- A. Contractor has designated [_____ or other] as its Project Manager to act as Contractor's Representative in all matters relating to the Contract Documents.

3.04 Architect/Engineer

- A. **Gale Associates** furnished the Plans and Specifications and shall have the rights assigned to Architect/Engineer in the Contract Documents.
- B. Architect/Engineer has designated _____ as its project manager, to act as its representative for receiving and making communications authorized under the Contract Documents.

ARTICLE 4 - LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORK

4.01 Liquidated Damage Amounts

- A. As liquidated damages for delay Contractor shall pay Owner **one thousand dollars (\$1,000.00)** for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.
- B. As liquidated damages for delay Contractor shall pay Owner **One Thousand Hundred dollars (\$1,000.00)** for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

4.02 Scope of Liquidated Damages

- A. Measures of liquidated damages shall apply cumulatively.
- B. Limitations and stipulations regarding liquidated damages are set forth in Document 00 7200 (General Conditions).

ARTICLE 5 - CONTRACT DOCUMENTS

- 5.01** Contract Documents consist of the following documents, including all changes, Addenda, and Modifications thereto:

Division Section Title

INTRODUCTORY INFORMATION

00 01 01	Title Page
00 01 10	Table of Contents
00 01 15	Drawing List

BIDDING REQUIREMENTS

00 11 13	Notice Inviting Bids
00 21 13	Instructions to Bidders

BID FORMS AND BID SUBMITTALS

00 41 13	Bid Form
00 43 13	Bond Accompanying Bid
00 43 14	Bidder Registration Form
00 43 30	Subcontractors List
00 45 13	Statement of Qualifications
00 45 19	Non-Collusion Affidavit
00 45 46	Bidder Certifications

CONTRACT FORMS

00 51 00	Notice of Award
00 52 00	Agreement
00 61 13.13	Construction Performance Bond
00 61 13.16	Construction Labor and Material Payment Bond
00 62 90	Escrow Agreement for Security Deposits in Lieu of Retention
00 63 25	Substitution Request Form
00 65 00	Release of Claims
00 65 36	Guaranty

CONDITIONS OF THE CONTRACT

00 72 00	General Conditions
00 73 00	Labor Compliance Program
00 7316	Supplementary Conditions
00 73 39	Small Local Business Enterprise
00 73 80	Apprenticeship Program
00 82 50	Project Labor Agreement
00 91 13	Addenda

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	Summary of the Work
01 20 00	Measurement and Payment
01 26 00	Modification Procedures
01 31 19	Project Meetings
01 32 30	Progress Schedules and Submittals
01 33 00	Submittals
01 41 00	Regulatory Requirements
01 42 00	References and Definitions
01 50 00	Temp Facilities and Controls
01 57 02	Storm Water Pollution Prevention – <u>no SWPPP required</u>
01 77 00	Commissioning and Contract Closeout
01 81 13	Environmentally Sustainable Procurement Construction

DIVISION 2 - Demolition

02 41 19	Selective Demolition
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DIVISION 3 - EARTHWORK & UTILITIES

03 53 00	Concrete Topping
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DIVISION 7: WATERPROOFING

07 14 13	Hot Fluid-Applied Rubberized Asphalt Waterproofing
07 19 00	Water Repellents
07 62 00	Sheet Metal Flashing and Trim
07 19 15	Water Repellant
07 92 00	Joint Sealants
07 95 00	Expansion Control

DIVISION 22: PLUMBING

22 14 23	Storm Drainage Piping Specialties
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LIST OF DRAWINGS

A001	COVER SHEET, ABBREVIATIONS, LEGEND, MAPS AND INDEX
A011	PARTIAL SITE PLAN
A101	PARTIAL DEMOLITION PLANS – BUILDINGS A AND B
A102	PARTIAL DEMOLITION PLANS – BUILDING F
A103	PARTIAL DEMOLITION PLANS – BUILDING G
A121	PARTIAL CONSTRUCTION PLANS – BUILDINGS A AND B
A122	PARTIAL CONSTRUCTION PLANS – BUILDING F
A123	PARTIAL CONSTRUCTION PLANS - BUILDING G
A201	PHOTOS
A202	PHOTOS
A203	PHOTOS
A601	PODIUM WATERPROOFING DETAILS
A602	PODIUM WATERPROOFING DETAILS

5.02 There are no Contract Documents other than those listed above. The Contract Documents may only be amended, modified or supplemented as provided in Document 00 7200 (General Conditions).

ARTICLE 6 - MISCELLANEOUS

6.01 Terms and abbreviations used in this Agreement are defined in Document 00 7200 (General Conditions) and Section 01 4200 (References and Definitions) and will have the meaning indicated therein.

6.02 It is understood and agreed that in no instance are the persons signing this Agreement for or on behalf of Owner or acting as an employee, agent, or representative of Owner, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise, and it is further understood and agreed that liability of Owner is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.

6.03 In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, Contractor or Subcontractor offers and agrees to assign to the awarding body 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. §15) or under the Cartwright Act (Chapter 2 (commencing with §16700) 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 Owner tenders final payment to Contractor, without further acknowledgment by the parties.

6.04 Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are deemed included in the Contract Documents and on file at Owner's Office, and shall be made available to any interested party on request. Pursuant to California Labor Code §§ 1860 and 1861, in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of compensation to his employees. Contractor represents that it is 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 Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.

6.05 This Agreement and the Contract Documents shall be deemed to have been entered into in the County of [____], State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in the Superior Court for the County of [____].

IN WITNESS WHEREOF the parties have executed this Agreement in quadruplicate the day and year first above written.

CONTRACTOR: [CONTRACTOR'S NAME]

By: _____
(Signature)

By: _____
(Signature)

Its: _____
Title (If Corporation: Chairman, President
or Vice President)

Its: _____
Title (If Corporation: Secretary, Assistant
Secretary, Chief Financial Officer or
Assistant Treasurer)

OWNER: Peralta Community College District

By: _____
(Signature)

(Print Name)

(Title)

Attest: _____
Secretary

(Print Name)

APPROVED AS TO FORM AND LEGALITY
THIS ____ DAY OF _____, 20____

By: _____
Attorney for Owner

(Print Name)

RESOLUTION NO. _____

END OF DOCUMENT

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Project Information and Conditions
- B. Unit Prices, Allowances and Alternates
- C. Emergency Response
- D. Construction Schedule
- E. Schedule of Values
- F. Dimensions and Quantities
- G. Guaranties and Warranties
- H. Clean-up

1.2 PROJECT INFORMATION

- A. Project Name: Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1, 900 Fallon Street, Oakland, California.
- B. Project Description: The following brief description applies only to the roof-related work of this project and is not intended to limit or totally define the scope of Work. Refer to the Contract Documents for the entire scope of Work.

1. Building B Courtyard

- a. **Demolition: Demolish topping slab, planters, soil, plants, irrigation lines, root barriers, drainage mats, waterproofing membranes, planter drains (including capping the drain line), expansion joints, flashings, termination bars, fasteners, and associated materials. Work includes careful disconnection and capping of electrical, plumbing, and control wiring below the structural deck. Include necessary scaffolding and equipment to access the underside of the deck. Scrape, grind, and remove old waterproofing from brick and concrete surface to achieve a clean surface. Remove and dispose of temporary tarping prior to start of work. Protect all interior spaces below the work areas. Provide plastic protection and plywood to protect equipment below Work area.**

- b. Waterproofing: Prepare existing deck and provide waterproofing system including water testing. Associated work includes new flashings, sealants, and all work required to properly integrate them.
- c. Topping Slab and Reinforcement: Provide new topping slab and reinforcement. Ensure that the existing flooring slopes outward by performing additionally grinding of the threshold area. The topping slab on the exterior shall slope away from all doors. Match adjacent topping slab color to greatest extent possible.
- d. Flashing Repairs: Perform flashing repairs at doors, windows, and other building components. Remove and reinstall all doors and frames from existing frame to allow for installation of door pan flashings. Repair existing floor finishes, including base boards. Prime and paint patches. Provide new weatherstripping at all jambs, heads, and door bottoms. No daylight through gaps in the doors shall be visible. Clean all windows and frames upon completion of project.
- e. Rail Walls: Clean, grind, and prep existing concrete rail walls and coat with PMMA coating system.
- f. Drains and Plumbing: Provide new drain bowls and properly sloped interior piping with new hanger support to the first wye. Match existing layout. Water test all drains and leader piping. Prior to start of work, water test all drains and drain lines and report any clogged drains to the College and Engineer. Remove and replace finishes such as ceiling tile, insulation, and drywall to perform work. Contractor shall be responsible for reviewing these interior conditions prior to Bid Submission. Contractor shall note that some finishes such as architectural screens will need to be carefully detached and reattached to access the ceilings. Contractor shall note that ductwork, light fixtures and other appurtenances will require disassembly and reconnection to perform plumbing work at some locations which shall be included as part of this bid. Remove and replace existing
- g. Planter irrigation piping: Demolish existing planter irrigation lines and cap below deck. Prior to start of work, coordinate shut off of irrigation system with college. Pressure test cap installation upon startup of irrigation system.
- h. Expansion Joints: Provide expansion joints including associated saw cutting, removal, and replacement of adjacent concrete.
- i. Miscellaneous crack repair at brick.
- j. Other work shown or noted in the Contract Documents.

- C. Allowance Work shall be done as Change Orders and as specified in Section 01 2600 (Modification Procedures). Identify Allowance Items (See Document 00 4000 (Bid Form)) work on the Progress Schedules and on Applications for Payment. The Amount given on Document 00 4000 (Bid Form) under each Allowance Item is the sum of money set aside for each Allowance Item. These amounts shall be included in the Contract Sum on the Bid Form. If the cost of Work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of Work actually done.

1.3 PROJECT CONDITIONS

- A. The site will be occupied and in use during the construction. Take necessary precautions to create minimum disturbance or disruption in adjacent occupied buildings. Comply with all reasonable restrictions or limitations imposed by the Owner to assure continued use of buildings during construction.
- B. Provide safety precautions to separate the work area(s) from pedestrian or vehicular traffic and to prevent damage to the buildings, its occupants and the surrounding areas. Observe all applicable O.S.H.A. and California State O.S.H.A. requirements.
- C. Supply labor and equipment to accomplish the Work.
- D. Temporary construction will not be allowed. Schedule, execute and coordinate work without exposing the buildings' interior or its contents to inclement weather. Repair or replace items damaged caused by Contractor's negligence.
- E. The Contractor is responsible to make the buildings with roof and waterproofing removed watertight at the end of each day's operation.
- F. Supply shoring to brace and support the structure and facilities affected by the work. This includes planter irrigation systems, exterior lighting, and items supported by the decks to be removed or replaced. Supply all temporary walkways and ramps necessary to remove existing waterproofing systems.
- G. Perform all work in accordance with applicable Federal, State and local code requirements.
- H. Workmanship and materials shall be in accordance with manufacturer's instructions and Code requirements. Specification requirements that exceed the minimum requirements of the manufacturer take precedence.
- I. Coordinate the work in this Section with other Sections, including preparatory work, building protection, daily clean-up and protection of building occupants and contents. **Provide all necessary protection of areas adjacent to Construction including taping off and protecting doors and windows.**
- J. Supply labor and equipment necessary to maintain a clean environment in the interior and exterior building and site areas around the construction on a daily basis.

- K. Since the campus will be in use during the project and access is needed to the buildings, the Contractor shall provide access measures/structures/**ramps** to allow access to the rooms affected by the work areas. Access is needed on a daily basis. The Contractor shall submit a shop drawing to the Owner for review.

1.4 BID ITEMS, UNIT PRICING, ALLOWANCES AND ALTERNATES

- A. Descriptions of Items on Bid Form 00 4113 (listed by Bid item numbers):

Bid Item 1 – Base Bid includes demolition of concrete topping slabs, planters, irrigation lines, waterproofing, expansion joints, flashings, and associated materials; providing new topping slab and reinforcement; performing flashing repairs at doors and windows; and providing new drain bowls and miscellaneous plumbing line repairs at **Building B courtyard** with the Construction Documents prepared by Allana Buick & Bers (ABB), Inc.

- B. **Bid Item 2 - 6 Alternates:**

1. At courtyard B provide water repellent at brick and concrete walls and repoint bricks. Repair damaged brick at crack including epoxy injection, grinding of the brick, and sealant over the crack **(Item 2)**.
2. Apply base bid scope to Courtyard A **(Item 3)**.
3. Apply base bid scope to Courtyard F **(Item 4)**.
4. Apply base bid scope to Courtyard G **(Item 5)**.
5. Apply water repellent at brick and concrete and repointing of brick for Courtyards A, F, and G **(Item 6)**

1.5 EMERGENCY RESPONSE

- A. The Contractor shall provide the Owner with after-hours (24 hour) emergency telephone numbers of the Contractor's Superintendent and Foreman.
- B. The Contractor must respond to emergency situations or calls within two (2) hours.

1.6 CONSTRUCTION SCHEDULE

- A. Refer to Division 1 Section "Construction Progress Documentation."
- B. The Contractor shall schedule periodic site visits during construction by the Roofing Manufacturer that provides the warranty. Visits by the Manufacturer's Representative shall be made during the pre-construction conference, one week into the start of construction, at project completion and as requested by the Owner. The Contractor is responsible to notify and obtain acceptance from the Membrane manufacturer on detail changes that may affect the roof system warranty.

1.7 SCHEDULE OF VALUES

- A. Refer to Division 1 Section "Payment Procedures."
- B. Provide a line item breakdown of construction labor and materials costs for each roof area.

- C. Provide line item values for Quantity Allowances and Unit Prices Work
- D. Utilize the Owner's form to prepare and submit the Schedule of Values.

1.8 WORK HOURS

- A. The campus will be occupied, and construction shall be scheduled after classes end at 3 pm. Demolition to take place between 3 pm and 10 pm unless acceptable to continue by City of Oakland noise ordinance. Interior and exterior spaces must be clean and ready for classes to begin at 8 am each day. Application of hot fluid applied rubber and asphalt waterproofing to be scheduled on a weekend. Weekend work may take place, but must be scheduled with the Project Manager.
- B. Start times noted below:
 - 1. Monday – Thursday start time 3 pm
 - 2. Friday start time 1 pm
 - 3. Weekends – All day
- C. Hours noted above to be maintained unless otherwise discussed and approved by Project Manager.

1.9 DIMENSIONS AND QUANTITIES

- A. Verify dimensions and quantities in the field prior to bid submission. The Project Plans and Drawings have been compiled from various sources and may not reflect the actual field conditions at the time of construction.
- B. The Contractor is responsible for means and methods of construction, and will make necessary investigations, including core samples and take necessary precautions to supply, fabricate, and install work in accordance with the construction documents.
- C. Unfamiliarity with existing project conditions will not be considered for additional compensation.
- D. In case of inconsistency between Drawings and Specifications or within either document, the Owner shall decide the quality and quantity of work.

1.10 CLEAN-UP

- A. Clean, restore and/or replace items stained, dirtied, discolored or otherwise damaged due to the Work, as required by the Owner's Representative.
- B. Clean work area, building (interior and exterior), and surrounding areas so they are free of trash, debris and dirt or dust caused by, or associated with the Work.
- C. Clean out drain leaders and piping to the point where it exits the site. Water test all drains prior to and after construction by running water from a hose into each drain in the presence of the Owner's Representative.
- D. Sweep site and paved areas clean daily.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

SECTION 02 4119

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes, but is not limited to, demolition and removal of the following:
1. Topping Slab
 2. Planters
 3. Soil
 4. Plantings
 5. **Electronic Field Vector Mapping (EFVM)**
 6. Irrigation lines (capped for future use where directed by the College and marked on as-built drawings)
 7. Root barriers
 8. Drainage mats
 9. Waterproofing membranes
 10. Flashings
 11. Termination bars
 12. Fasteners
 13. Other work shown or noted.

1.2 RELATED REQUIREMENTS

- A. **Section 22 14 23, “Storm Drainage Piping Specialties;” for additional demolition requirements related specifically to plumbing scope.**

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless otherwise indicated.
- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse in the Work, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain College's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review structural load limitations of existing structure.
 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 5. Review areas where existing construction is to remain and requires protection.

1.6 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Architects and owners, and other information specified.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed dust-control and noise-control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation.
 - 1. Identify options if proposed measures are later determined to be inadequate.
- D. Schedule of Selective Demolition Activities:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Construction and use of temporary elevators.
 - 5. Locations of temporary partitions, if required, and means of egress.
 - 6. Coordination of continuing occupancy of portions of existing building and of occupancy of completed Work.
- E. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins. Undocumented conditions will be repaired at Contractor's sole expense.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.8 FIELD CONDITIONS

- A. Portions of building immediately adjacent to selective demolition area will be occupied.
 - 1. Conduct selective demolition so College's Representative operations will not be disrupted.
 - 2. Provide not less than 72 hours' notice to College of activities that will affect operations.
 - 3. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- B. College assumes no responsibility for condition of areas to be selectively demolished.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by College as far as practical.
- D. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

- E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and College's Representative.
- F. Storage or sale of removed items or materials on-site will not be permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- H. Weather Limitations: Proceed with podium removal preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing waterproofing system or building.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

1.10 SEQUENCING

- A. Coordinate the sequencing of waterproofing demolition work with waterproofing system applicator to ensure that the podium replacement will promptly follow demolition work.
- B. Provide and install temporary protection during the period between demolition and replacement work. Building must be maintained in watertight condition for duration of the Work.
- C. Take steps necessary to ensure that the building is watertight at the end of each day's work and when inclement weather is forecast.
 - 1. Failure to adequately protect the building and its contents from weather will result in the College installing temporary protection at the Contractor's expense.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with authorities having jurisdiction over selective demolition operations, including:
 - 1. California Occupational Safety and Health Administration (CalOSHA)
 - 2. Department of Transportation (DOT)
 - 3. Department of Health Services (DOHS)
 - 4. Environmental Protection Agency (EPA)
 - 5. California Contractors State License Board

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Visit the project to survey existing conditions and correlate with Contract Document requirements indicated to determine extent of selective demolition required.
 - 1. Perform visual survey accompanied by the College's Representative.
 - 2. Mark interface surfaces as required to enable workmen to identify items scheduled for demolition and those scheduled to remain.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 PREPARATION

- A. Protect adjacent podium waterproofing system that is indicated not to be removed.
- B. Maintain drains in functioning condition to ensure drainage at end of each workday. Prevent debris from entering or blocking drains and conductors. Use drain plugs specifically designed for this purpose. Remove drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
- C. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- D. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from College and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic.
 - 3. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 5. Protect existing site improvements, appurtenances, and landscaping to remain.
- E. Temporary Facilities:
 - 1. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
- F. Protect building to have podium removed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from podium removal operations.
- G. Contractor shall take special precaution to protect existing waterproofing where requested to be saved.**

3.3 UTILITY SERVICES

- A. Existing Utilities: Maintain services and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by College and authorities having jurisdiction.
- C. Provide temporary services during interruptions to existing utilities, as acceptable to College and to authorities having jurisdiction.
 - 1. Provide at least 72 hours' notice to College if shutdown of service is required during changeover.
- D. Utility Requirements: Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

- E. **Contractor shall coordinate with the College and perform all disconnections and capping of all plumbing, control wiring, and existing drains inside the planters. All terminations and capping work shall occur below deck. Contractor shall fill abandoned penetrations with non-shrink grout. Additionally, contractor is made aware that the irrigation system is connected to a central control system and shall carefully coordinate the turning off of these affected systems with the College Landscape Department. The leader piping attached to the drains in the planter shall be removed to the nearest elbow on the underside of the deck.**
- F. **Contractor is made aware that there may be electrical conduits buried within the planter seats and planters and shall take precaution to carefully perform the demolition. Any unused conduits shall be terminated below the structural deck.**

3.4 POLLUTION CONTROLS

- A. Dust Control: Comply with the College's and applicable governing environmental protection regulations.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 1. Remove debris from elevated portions of building by enclosed chute, hoist, or other pre-approved device that will convey debris to grade level in a controlled descent.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated.
- B. Use methods required to complete the Work within limitations of governing regulations.
- C. Cap irrigation lines where directed by the College and mark on as-built drawings.
- D. During topping slab demolition, protect adjacent building including doors and windows as necessary to prevent damage from demolition activity. Ensure dust does not enter adjacent spaces. Contractor will be responsible for any costs incurred to cleanup or repair building/classroom interior.
- E. **Contractor shall accommodate the Consultant to allow for documentation of existing waterproofing conditions.**
- F. **Contractor shall preserve 10 – 4ft x 4ft section of existing single ply waterproofing during the course of demolition with locations to be selected by Consultant.**
- G. Neatly cut openings and holes plumb, square, and true to dimensions required.
- H. Use cutting methods least likely to damage construction to remain or adjoining construction.
 - 1. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
 - 2. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- I. Do not use cutting torches until work area is cleared of flammable materials.
 - 1. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 - 2. Maintain adequate ventilation when using cutting torches.
- J. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- K. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

- L. Dispose of demolished items and materials promptly. Remove debris on a daily basis. No stockpiling of debris allowed on Campus.
- M. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- N. Existing Facilities: Comply with College's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.
- O. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Paint equipment where indicated.
 - 3. Reinstall items in locations indicated.
 - 4. Comply with installation requirements for new materials and equipment.
 - 5. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- P. Existing Items to Remain: Protect construction to remain against damage and soiling during selective demolition.
 - 1. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.
 - a. Submit written request and planned scope for approval.

3.6 WATERPROOFING TEAR-OFF AND INSPECTION

- A. Notify College's Representative each day of extent of waterproofing tear-off proposed for that day.
- B. Inspect deck after removal of topping slab, waterproofing system, landscaping and associated components.
- C. If deck surface is not suitable for receiving new waterproofing or if structural integrity of deck is suspect, immediately notify College's Representative. Do not proceed with installation until directed by College's Representative.

3.7 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Promptly replace items demolished that were not so scheduled to the satisfaction of the College's Representative.
- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
 - 1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.

3.8 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off College's Representative property and legally dispose of them.

3.9 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations.
- B. Return adjacent areas to condition existing before selective demolition operations began.

3.10 SELECTIVE DEMOLITION SCHEDULE

- A. Existing Construction to Be Removed: Remove existing construction where indicated. Remove existing construction as required to install the Work.
 - 1. Existing construction as indicated and as needed to complete the Work.
 - 2. Other construction where shown or noted on the Drawings and where specified in the Project Manual.
- B. Existing Items to Be Removed and Reinstalled: Items and/or construction requiring temporary removal and/or disconnection, modification, etc. to remain a part of the Work.
 - 1. Existing construction as indicated and as needed to complete the Work.
 - 2. Other construction where shown or noted on the Drawings and where specified in the Project Manual

END OF SECTION

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

SECTION 07 1413

HOT FLUID-APPLIED RUBBERIZED ASPHALT WATERPROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surface Preparation.
 - 2. Hot rubberized-asphalt (HRA) waterproofing, reinforced.
 - 3. Flashings and Terminations.
 - 4. **PMMA Flashing**
 - 5. **Expansion Joint**
 - 6. **Neoprene Gutter**
 - 7. Pre-Acceptance testing for installed waterproofing system
 - 8. Protection Course
 - 9. Drain Mat.
 - 10. Compressible Filler

1.2 RELATED REQUIREMENTS

- A. Section 07 95 00, "Expansion Control" for expansion joints at topping slab level.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. Canadian Government Specification Board CGSB-37.50-M89, Standard for "Asphalt, Rubberized, Hot Applied, for Roofing and Waterproofing."

1.4 SYSTEM DESCRIPTION

- A. Furnish and install a completed waterproofing assembly including surface conditioner, a monolithic, reinforced rubberized asphalt membrane, protection course, flashings, protection layer and drainage course. To ensure total system compatibility all products must be purchased from a single-source manufacturer.

1.5 ACTION SUBMITTALS

- A. Certification from an approved independent testing laboratory experienced in testing this type material, that the material meets the CGSB-37.50-M89 standard for rubberized asphalt membranes, including applicable ASTM procedures.
- B. Certification showing full time quality control of production facilities and that each batch of material is tested to ensure conformance with the manufacturer's published physical properties.
- C. Certification showing that all waterproofing components are being supplied and warranted by a single-source manufacturer.
- D. Certification showing that installer is certified as a current Approved Applicator with manufacturer for the specified warranty.
- E. The plant manufacturing this type material must have ISO 9002 approval as evidenced by a notarized copy of the official certificate.
- F. Product Data: For each type of product indicated.
- G. Shop Drawings: Show locations and extent of waterproofing. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins to adjoining waterproofing, and other termination conditions.

- H. **Shop Drawings: Show locations and extent of neoprene gutters and drain tubes for coordination with plumbing and architectural requirements.**
- I. Field-Adhesion Test Reports: For each test on the Project.

1.6 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Sample warranties.

1.7 QUALITY ASSURANCE

- A. The Waterproofing Contractor shall demonstrate qualifications to perform the work of this Section by submitting the following documentation:
 - 1. Certification or license by the membrane manufacturer as a locally based, authorized applicator of the product the installer intends to use, for a minimum of five (5) years.
 - 2. List of at least three (3) projects, satisfactorily completed within the past five (5) years, of similar scope and complexity to this project. Previous experience submittal shall correspond to specific membrane system proposed for use by applicator.
- B. The rubberized asphalt membrane product shall contain an inert clay filler to enable the product to be resistant to acids (fertilizers, building washes and acid rain).
- C. Membrane Manufacturer Qualification: Manufacturer shall demonstrate qualifications to supply materials of this section by certifying the following:
 - 1. Membrane Manufacturer must show evidence that the specified rubberized asphalt has been manufactured by the same source for fifteen (15) years and successfully installed on a yearly basis for a minimum of fifteen (15) years on projects of similar scope and complexity.
 - 2. Membrane Manufacturer shall have available an in-house technical staff to assist the contractor, when necessary, in application of the products and final inspection of the assembly.
- D. College shall make arrangements and payments for an independent inspection service to monitor installation compliance with the project documents and manufacturer's published literature, installation instructions, and site specific details. Independent construction observation firm shall be a company certified by manufacturer in writing as a current Certified Observer/Inspector.
- E. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this Work with related and adjacent Work. Verify that final waterproofing and waterstop details comply with waterproofing manufacturer's current installation requirements and recommendations. Pre-con meeting attendees should include representatives for the College, Engineer, inspection firm, Contractor, waterproofing contractor, concrete contractor, excavating/backfill contractor, and mechanical and electrical contractors if Work penetrates the waterproofing.
- F. Sole Source: All products shall be purchased from a single-source manufacturer.
- G. **Do not allow expansion joint fleece material to get wet.**

1.8 DELIVERY, STORAGE AND HANDLING

- A. Delivery, storage and handling of materials shall be in accordance with manufacturer's published instructions.
- B. Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instruction for use and all identifying numbers.
- C. Materials shall be stored in a neat, safe manner, not to exceed the allowable structural capacity of the storage area.
- D. Store materials in a clean, dry area protected from water and direct sunlight.

- E. Store all adhesives at temperatures between 60°F (15.5°C) and 80°F (26.6°C). If exposed to lower temperatures, restore materials to 60°F (15.5°C) minimum temperature before using.
- F. Store rolls on end, original pallets or elevated platform, unless otherwise instructed by manufacturer.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate, or when temperature is below 40 degrees F.
- B. Preparation and application of membrane must be conducted in well ventilated areas.
- C. Do not expose membrane or accessories to a constant temperature in excess of that permitted or recommended by the manufacturer.
- D. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat, etc.) to come in contact with the waterproofing membrane. Any exposure to foreign materials or chemical discharges must be presented to membrane manufacturer for evaluation to determine any impact on the waterproof membrane assembly performance.

1.10 WARRANTY

- A. Special Warranty: Custom warranty with no monetary limitation on Manufacturer's standard form in which manufacturer agrees to repair or replace waterproofing and sheet flashings that do not comply with requirements or that fail to remain watertight within specified warranty period.
 - 1. Warranty Period: 15 years from date of Substantial Completion.
- B. Contractor's Labor and Material Guarantee: Correct defective Work at no cost to the College.
 - 1. Warranty Period: Five (5) years from the date of Final Completion.

PART 2 - PRODUCTS

2.1 HRA WATERPROOFING

- A. HRA Waterproofing: Single component; 100 percent solids; hot fluid-applied, rubberized asphalt waterproofing membrane.
 - 1. Basis of Design Product: Subject to compliance with requirements, provide Strataseal HR by Cetco Building Materials.
 - 2. Acceptable Manufacturers: Subject to compliance with requirements, Monolithic Membrane 6125 by American Hydrotech, Inc. is an approved equal.
 - 3. Mil Thickness: 215 mils.
 - 4. Mil Thickness at CMU Planters: 100 mils.

2.2 FLASHING SHEET MATERIALS

- A. Neoprene Reinforcing: 60-mil minimum, uncured sheet neoprene:
 - 1. Cetco Building Materials; N-Flash
 - 2. American Hydrotech, Inc.; Flex Flash UN
- B. Reinforcing Fabric: Fabric reinforcing sheet for horizontal applications:
 - 1. Cetco Building Materials; Stratabond 100 spunbonded polyester
 - 2. American Hydrotech, Inc.; Flex Flash F spunbonded polyester
- C. Reinforcing Fabric: Fabric reinforcing sheet for vertical applications only:
 - 1. Cetco Building Materials; Stratabond 100 spunbonded polyester
 - 2. American Hydrotech, Inc.; Flex Flash FV woven fiberglass

2.3 AUXILIARY MATERIALS

- A. Primer: Manufacturer's primer or surface conditioner to prepare substrate for adhesion of waterproofing.
 - 1. Cetco Building Materials; Strataprime SB
 - 2. Concrete: American Hydrotech, Inc.; Surface Conditioner
- B. Waterproofing Bonding Adhesive: Contact adhesive to bond neoprene flashing together:
 - 1. Manufacturer's recommended lap splicing cement
- C. Waterproofing Bonding Adhesive: Contact adhesive to bond neoprene flashing to a substrate:
 - 1. Manufacturer's recommended bonding cement
- D. Sealant to seal neoprene flashing seam edge:
 - 1. Manufacturer's recommended lap sealant
- E. Protection Course: Manufacturer's standard, 90-mil thick, rubberized asphalt protection sheet with synthetic fiber reinforcement.
 - 1. Cetco Building Materials; RAP 200
 - 2. American Hydrotech, Inc.; Hydroflex 30
- F. Protection Course (where bonding mortar to hot rubber): Manufacturer's standard, 160-mil thick fire rated rubberized asphalt protection cap sheet with synthetic fiber reinforcement and granulated top surface.
 - 1. Cetco Building Materials; RAP 200
 - 2. American Hydrotech, Inc.; Hydrocap 160FR
- G. Weep Protector: Allowing for drainage through weep holes in clamping ring.
 - 1. Nobleseal Positive Weep Protector; Noble Company.
- H. Liquid Applied Reinforced Flashing Waterproofing (PMMA): Monolithic, self-flashing and self-adhering reinforced PMMA flashing membrane.
 - 1. Cetco: Manufacturer's recommended primer, resin, catalyst, and fleece.
 - 2. American Hydrotech:
 - a. Primer: Hydroseal Primer-Metal
 - b. Resin: Hydroseal Resin
 - c. Catalyst: HydroSeal Catalyst
 - d. Fleece: Hydroseal Fleece
- I. Grid Strip Adhesive: Sarnafiller Grid Adhesive; Sarnafil.
 - 1. Location: Tie-in to adjacent PVC membrane.

2.4 EXPANSION JOINT SYSTEM

- A. **Expansion Joint System: Flat vulcanized waterproofing joint integral with the waterproofing system sized to accommodate movement indicated in the Contract Documents:**
 - 1. **Up to 2" movement: Situra; Redline 40**
 - 2. **Up to 4" movement: Situra; Redline 100**
 - 3. **Up to 10" movement: Situra; Redline 240**
 - 4. **Corners, T's, L's, and other transitions shall be prefabricated by the manufacturer.**

2.5 NEOPRENE GUTTER

- A. Provide neoprene gutter to match neoprene flashing sheet.**
- B. Seam Tape: Subject to compliance with requirements, provide QuickSeam Tape; Firestone.**
- C. Drain Tube: Subject to compliance with requirements, provide drain tubes and EPDM attachment for drain tubes by MM Systems.**

2.6 DRAIN MAT

- A. Drain Mat: Manufactured composite subsurface drainage panels consisting of a three-dimensional, prefabricated sheet drain consisting of a 3-dimensional polypropylene formed dimple core, filter fabric, and polymeric film backing, with a horizontal flow rate not less than 20 gpm/ft of width.
 - 1. Cetco Building Materials; Aquadrain 15XP
 - 2. American Hydrotech, Inc.; Hydrodrain 420

2.7 SLOPING COURSE

- A. Sloping Course: Polymer modified Portland cement Mortar. Subject to compliance with requirements, provide SikaTop 122 Plus.

2.8 COMPRESSIBLE FILLER

- A. Compressible Filler: ASTM D 1751, asphalt-saturated cellulosic fiber

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all surfaces to receive the waterproofing assembly to verify it is acceptable and proper for the application of the membrane.
- B. Do not proceed with the installation of the waterproofing membrane assembly until all surface defects have been corrected.
- C. Construction coat shall have cured minimum 21 days prior to application of hot fluid-applied rubberized asphalt waterproofing.

3.2 PREPARATION

- A. Concrete decks must be monolithic, smooth, and free of voids, spalled areas, laitance, honeycombs, and protrusions. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids. Clean and prepare existing concrete surfaces using wire brush and other mechanical means.
- B. Plywood decks must be inspected for signs of mold or mildew. Remove and replace boards that have mold or mildew. Remove and replace boards that have delamination or have warping or curling.
- C. Clean and prepare substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for waterproofing application.
- D. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- E. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- F. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- G. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.
- H. Clean existing concrete surfaces using wire brush and other mechanical means.

3.3 SLOPING COURSE INSTALLATION

- A. Mix and install sloping course in accordance with manufacturer's written instructions and recommendations.
- B. Ensure substrate is clean and dry in accordance with manufacturer's instructions. Remove surface laitance from concrete surface to expose aggregate to obtain a surface profile of ICRI CSP 5 in accordance with ICRI 03732.
- C. Mixing: Mechanically mix in an appropriate sized mortar mixer, or with a mud paddle and drill at approximately 400-600 rpm.
 - 1. Pour approximately 4/5 gallon of Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes.
 - 2. Add remaining Component A to mix for desired consistency.
 - 3. Mix only as much material as can be completely placed in 10-15 minutes.
 - a. Horizontal Application: Mix only as much material as can be completely placed in 30 minutes
 - 4. Do not retemper material.
 - 5. Should smaller quantities be desired, be sure that components are mixed in the manufacturer's recommended ratios and that Component B is uniformly blended before mixing the components together.
- D. Placement: Prepare the substrate at the time of application to "saturated surface dry" with no standing water.
 - 1. Mortar must be scrubbed into the substrate, filling all pores and voids.
 - 2. While the scrub coat is still plastic, force material against the edge of repair, working toward the center of the area.
 - a. If the repair area is too large to fill while the scrub coat is still wet, use the specified epoxy resin/portland cement adhesive in lieu of the scrub coat as a bonding bridge.
 - 3. After filling, consolidate, then screed.
 - 4. Allow mortar to set to the desired stiffness, then finish to match adjacent surface texture.
 - a. Smooth surface: Use trowel to create smooth surface texture.
 - b. Rough surface: Use wood float or sponge float for rough surface texture.
 - 5. Horizontal areas, where the depth of repair to sound concrete is greater than 1 inch, add manufacturer's recommended coarse aggregate.
 - a. The top surface of each lift shall be scored to produce a rough surface for bond to the next lift.
 - b. Each lift shall be allowed to reach final set before applying subsequent lifts.
 - c. Each lift shall be scrubbed into the preceding lift.
- E. Curing: Moist cure with wet burlap and polyethylene, a fine mist of water or manufacturer-recommended, water-based compatible curing compound.
 - 1. Moist curing shall commence immediately after finishing, and shall continue for a minimum of 48 hours.
 - 2. Protect applied material from sun, rain, and wind until compressive strength is 70 percent of the 28-day compressive strength.
 - 3. Protect applied material from freezing by covering with insulating material.

3.4 PRIMER

- A. Apply primer using a hand held sprayer evenly. Primer should "tan" the surface, not blacken it.

- B. Allow sufficient time for the primer to thoroughly dry prior to the membrane application. Install membrane same day as primer

3.5 MEMBRANE PREPARATION

- A. The membrane shall be heated in double jacketed, oil bath or air jacketed melter approved by the manufacturer with mechanical agitation, specifically designed for the preparation of a rubberized asphalt membrane.
- B. Heat membrane until membrane can be drawn-free flowing at a temperature range between 320 degrees F and 340 degrees F. Do not exceed temperature of 375 degrees F. Membrane heated outside of manufacturer's published temperature range shall be removed and replaced at no cost to College.

3.6 FLASHING INSTALLATION

- A. Provide detailing and flashing at terminations of waterproofing membrane according to manufacturer's written instructions.
- B. All detailing and flashing shall be completed before installing the membrane over the field of the substrate.
- C. Liquid Applied Reinforced Flashing Waterproofing Installation:
 - 1. Apply primer in a thin coat to metal surface in accordance with manufacturer's written instructions. Remove any areas of pooling or over-application. Protect primer from dirt. Apply liquid flashing within 24 hours.
 - 2. Mix entire pail of resin for 2-3 minutes before each use, before adding catalyst, and prior to pouring off resin into a second container for batch mixing.
 - 3. Catalyze only the amount of resin that can be applied within 15-20 minutes. Proportion catalyst in accordance with manufacturer's written instructions.
 - 4. Add pre-measured catalyst to the resin component and stir for 2-minutes using a slow-speed mechanical agitator or stirring stick.
 - 5. Apply resin to primed substrate using manufacturer's approved rollers and brushes. Apply at manufacturer's recommended application rate.
 - 6. Roll fleece directly into resin avoiding folds and wrinkles. Use a roller to lightly work the resin into the fleece, saturating from the bottom up. Apply a supplemental coat of resin directly over the fleece as needed in order to fully saturate fleece. Fleece must be fully darkened and without white spots (indicating non-saturated fleece). Correct any issues prior to curing of resin.
 - 7. Apply an even coat of resin over the fleece at manufacturer's recommended application rate.
 - 8. If work is interrupted for more than 12 hours, refer to manufacturer's literature for required reactivation treatment at transition locations.

3.7 MEMBRANE INSTALLATION AT JOINTS

- A. Provide joint treatment over non-moving cracks and joints. Where construction coat is applied, apply joint treatment over construction coat at joints.
- B. At a width of 9-inches, apply the rubberized asphalt membrane at a rate to provide a continuous, monolithic coat of 90 mil minimum, into which is fully embedded a layer of 6 inch reinforcing fabric prior to installation of field membrane. Overlap reinforcing strip ends a minimum 2 inches, ensuring lap receives rubberized asphalt. Provide neoprene reinforcing in lieu of reinforcing fabric for cracks in concrete greater than 3/16 inch and up to 1/2 inch.

3.8 MEMBRANE APPLICATION

- A. Apply the rubberized asphalt membrane at a rate to provide a continuous, monolithic coat of 90 mil minimum, into which is fully embedded a layer of the reinforcing fabric, followed by another continuous monolithic coat of membrane at an average thickness of 125 mil. Overlap reinforcing fabric 1-2 inches, ensuring lap receives rubberized asphalt. Total membrane thickness is to be 215 mils minimum.
 - 1. HRA waterproofing membrane at CMU planters shall be 100 mils minimum and unreinforced.
- B. Heat and apply rubberized asphalt according to manufacturer's written instructions.
- C. Apply waterproofing over prepared joints and up wall terminations and vertical surfaces to heights indicated and required by manufacturer.

3.9 PROTECTION COURSE

- A. Embed the protection sheet into the membrane while it is still hot to ensure a good bond.
- B. Overlap adjoining sheet edges (dry) a minimum of 3 inches to ensure complete coverage. Seal with hot applied rubberized asphalt in the seams and laps.
- C. The completed membrane/protection assembly must be covered with subsequent topping materials as soon as possible, within 30 days of membrane installation.

3.10 EXPANSION JOINT INSTALLATION

- A. Prepare substrates and install expansion joints in accordance with manufacturer's recommendations and written instructions.
- B. Ensure that folds in neoprene are free to move and not bonded. Use bond breaker tape between folds to prevent adhesion of adjacent folds.
- C. Apply the first coat of hot fluid-applied rubberized asphalt waterproofing at the manufacturer's minimum required thickness.
- D. Immediately embed the expansion joint material, making sure the bottom polyester fleece is in full contact with the hot asphalt.
- E. Press the expansion joint material into the hot asphalt.
- F. Lay the expansion joint in lengths that allow for immediate contact with the hot asphalt. Laying expansion joint in cold asphalt is prohibited.
- G. Spread an even coat of hot fluid-applied rubberized asphalt waterproofing on the top surface of the expansion joint, ensuring the top polyester fleece is completely covered.
- H. Embed fabric reinforcing overlapping the edge of the expansion joint by 3 inches, and ensuring full contact.
- I. Apply a second coat of hot fluid-applied rubberized asphalt waterproofing on the top of the reinforcing fabric mesh at the manufacturer's minimum required thickness.

3.11 WATERPROOFING SYSTEM ACCEPTANCE TESTING

- A. Flood Testing: Commence flood testing of the membrane has been fully installed.
 - 1. The entire deck shall be flood tested for leaks in accordance with ASTM D-5957.
 - 2. The minimum depth of the flood test shall be 2-inches.
 - 3. Contractor to verify that the structure can withstand the weight of the water test prior to commencement of the water test.
 - 4. The minimum duration for each flood test shall be 48 hours.
 - 5. Create temporary dams as required to confine and segment flood testing areas.
 - 6. All flood testing shall be performed in and documented in the presence of the College's independent observer.
 - 7. Install temporary containment assemblies, plug or dam drains, and flood with potable water.

8. After flood testing, repair leaks, repeat flood tests, and make further repairs until waterproofing installation is deemed watertight by the College.
 9. College will engage an independent testing agency to observe flood testing and examine underside of decks and terminations for evidence of leaks during flood testing.
 10. Install secondary protection layer immediately after successful completion of the testing protocol.
- B. If leaks should occur, the water must be drained completely and the membrane installation repaired. Retest until a passing water test without leaks is achieved.

3.12 DRAIN MAT INSTALLATION

- A. Install drain mat on horizontal and vertical surfaces in accordance with the manufacturer's published instructions and recommendations. Use methods that do not penetrate waterproofing.
- B. Layout and position drainage course and lay flat. Cut and fit drainage course to perimeter and penetrations.
- C. Bond all geotextile overlap edges to adjacent drainage course geotextile with an acceptable adhesive to ensure geotextile integrity.
- D. Protect installed molded-sheet drainage panels during subsequent construction.
- E. Place subsequent topping materials as soon as possible.

3.13 COMPRESSIBLE FILLER INSTALLATION

- A. Install compressible filler at locations indicated.

3.14 FIELD QUALITY CONTROL

- A. Contractor and a representative of the membrane manufacturer shall inspect the waterproofing assembly and notify the Engineer of any defects. All defects must be corrected at no additional cost.
- B. Field-Adhesion Testing: Field pull test hot fluid-applied rubberized asphalt waterproofing adhesion to substrates as follows:
 1. Extent of Testing: Test completed and cured hot fluid-applied rubberized asphalt waterproofing as follows:
 - a. Perform tests one day prior to installation.
 - 1) Perform 2 tests for each location and each substrate.
 - 2) Perform 2 tests for each concrete pour.
 - b. Perform tests at start of each day. Perform additional test if kettle is shut down and restarted during the day.
 - c. Perform tests where and as required by the Engineer.
 - d. Retest if there are weather variations that affect installation of waterproofing.
 2. Test Method:
 - a. Prepare substrates as intended for project-specific waterproofing installation at each test location. Install primer on substrates indicated to receive primer. Allow primer to cure. Perform one pull test after primer has cured. Perform another pull test 24 hours after initial pull test.
 - b. Apply rubberized asphalt membrane at a rate to provide a continuous, monolithic coat of 90 mils minimum. Embed half of 4 inch x 12 inch fabric reinforcement in hot rubber so 4 inches x 6 inches of fabric reinforcement is not embedded in hot rubber. Apply another continuous monolithic coat of membrane at a minimum thickness of 125 mils. Total membrane thickness is to be 215 mils. Allow rubberized asphalt to cool to the touch
 - c. Pull fabric reinforcement 90 degrees from plane of installed hot rubber. Pull slowly, trying not to tear fabric reinforcement.

3. Inspect tested waterproofing and report on the following:
 - a. Temperature, humidity and other weather conditions that affect installation of the waterproofing
 - b. Whether waterproofing dimensions and configurations comply with specified requirements.
 - c. Whether waterproofing connected to pulled-out portion failed to adhere to substrates or tore cohesively. Compare these results to determine if adhesion passes manufacturer's field-adhesion hand-pull test criteria.
 4. Record test results in a field-adhesion-test log. Include dates when waterproofing was installed, names of persons who installed waterproofing, test dates, test locations, whether substrate was primed, adhesion results and installation dimensions.
 5. Remove waterproofing and reinforcing from substrate following pull tests. Ensure that original waterproofing surfaces are clean and that new waterproofing contacts original waterproofing.
 6. Coordinate pull tests with Engineer and College's Representative. Notify Engineer and College's Representative 48 hours in advance of pull tests.
- C. Water test neoprene gutters to ensure they do not leak at seams and at connections between gutter and attachment for drain tubes.**
- D. Evaluation of Field-Adhesion Test Results: Waterproofing that fails cohesively within itself, not evidencing adhesive failure from testing or noncompliance with other indicated requirements, will be considered satisfactory. Remove waterproofing that fails to adhere to substrates during testing or to comply with other requirements. Retest failed applications until test results prove waterproofing complies with indicated requirements.

3.15 CLEANING AND PROTECTION

- A. Protect waterproofing from damage and wear from vehicular and pedestrian traffic during and after installation until placement of overburden.
 1. Repair damaged or deteriorated waterproofing immediately prior to application of overburden.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

SECTION 07 9200

JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes joint sealants for weather seals:
 - 1. Polyurethane joint sealants.
 - 2. Silyl-terminated polyether joint sealants.
 - 3. **Silicone joint sealants.**
 - 4. Joint sealant backing.

1.2 RELATED REQUIREMENTS

- A. Section 07 62 00 "Sheet Metal Flashing and Trim;" for butyl sealant and butyl sealant tape.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: A preinstallation meeting shall be held at the project site prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this Work with related and adjacent Work. Verify that final details comply with manufacturers' current requirements and recommendations. Meeting attendees shall include representatives for the College, Engineer, inspection firm, Contractor, joint sealants contractor and installers of related and adjacent Work

1.4 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
 - 2. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 3. Submit not fewer than eight pieces of each kind of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 5. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
 - 1. Locate test joints where indicated on Project or, if not indicated, as directed by Building Envelope Engineer.
 - 2. Conduct field tests for each kind of sealant and joint substrate indicated.
 - 3. Notify Building Envelope Engineer seven days in advance of dates and times when test joints will be erected.

4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.5 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Shop Drawings: Submit shop drawings indicating control joint, including expansion joints and reveals if applicable, layout on 24"x36" drawings sheets.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- D. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- E. Joint-Sealant Schedule: Include the following information:
 1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.
- F. Qualification Data: For qualified Installer.
- G. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- H. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.
 1. If SWRI validation certificate cannot be obtained for sealants specified and substrates sealants will be adhered to, test in accordance with Preconstruction Testing Article.
- I. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
- J. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 2. Manufacturer's interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- K. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- L. Field-Adhesion Test Reports: For each sealant application tested.
- M. Warranties: Sample of warranties.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized installer who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.
- C. Product Testing: Test joint sealants without SWRI validation certificate using a qualified testing agency as outlined below.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
 - 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.
- D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.7 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
 - 2. **Warranty Period, Silicone: Twenty years from date of Substantial Completion.**

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another, with adjacent materials and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

2.2 SILICONE JOINT SEALANTS

A. Neutral-Curing Silicone Joint Sealant: ASTM C 920.

1. **Product:** Subject to compliance with requirements, provide Dow 795 and Dow 756SMS by Dow Corning Corporation, or approved equal.
 - a. **Preapproved Equal:** SilPruf SCS2000 and SilPruf NB SCS9000 by Momentive Performance Materials.
 - b. **Dow 756SMS and SilPruf NB SCS9000** are for joints where masonry is a substrate.
2. **Type:** Single component (S).
3. **Grade:** nonsag (NS).
4. **Class:** 50.
5. **Uses Related to Exposure:** Nontraffic (NT).
6. **Location:** For use with storefronts, windows, metal frames, and where indicated.

2.3 POLYURETHANE JOINT SEALANTS

A. Traffic-Grade, Urethane Joint Sealant: ASTM C 920

1. **Product:** Subject to compliance with requirements, provide MasterSeal NP 2; BASF Building Systems or one of the following preapproved equals:
 - a. Sika Corporation, Construction Products Division; Sikaflex - 2c NS.
2. **Type:** Multicomponent (M).
3. **Grade:** nonsag (NS).
4. **Class:** 25.
5. **Uses Related to Exposure:** Traffic (T).
6. **Location:** For horizontal locations subject to pedestrian or vehicular traffic.

2.4 SILYL-TERMINATED POLYETHER JOINT SEALANTS

A. Silyl-Terminated Polyether Joint Sealant: ASTM C 920.

1. **Product:** Subject to compliance with requirements, provide MasterSeal NP 150; BASF.
2. **Type:** Single component (S).
3. **Grade:** nonsag (NS).
4. **Class:** 50.
5. **Uses Related to Exposure:** Nontraffic (NT).
6. **Location:** For general use unless otherwise indicated.

2.6 JOINT SEALANT BACKING

- A. **General:** Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. **Cylindrical Sealant Backings:** ASTM C 1330, Type C (closed-cell material with a surface skin) or Type B (bicellular material with a surface skin), as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. **Bond-Breaker Tape:** Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. **Primer:** Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Unglazed surfaces of ceramic tile.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.
 - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

SECTION 07 9500

EXPANSION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes procedural and administrative, product and execution requirements for preformed expansion joints including:
 - 1. Preformed traffic grade expansion joint.
 - 2. Accessories.
- B. Field-verify joint openings prior to ordering materials. Provide expansion joint systems appropriate for movement and sizes of openings.

1.2 RELATED REQUIREMENTS

- A. **Section 07 14 13, “Hot Fluid-Applied Rubberized Asphalt Waterproofing;” for expansion joints that integrate with waterproofing.**

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate installation of expansion control systems with adjacent expansion control systems to ensure that transitions are watertight.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, blockout requirement, attachments to other work, and line diagrams.
- C. Samples: For each exposed expansion control system and for each color and texture specified.
 - 1. Provide Samples for initial color selection and for verification to be approved by the College.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle materials to prevent damage. Place materials on pallets and fully protect from moisture.
- C. Materials which are determined by the College or the manufacturer to be damaged are to be removed from the job site and replaced at no cost to the College.

1.6 QUALITY ASSURANCE

- A. Obtain each expansion joint cover assembly type and accessories from a single source.
- B. Products shall be installed either by manufacturers licensed applicators, approved installers or after installation training from the manufacturer.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. General: Provide expansion control systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.
 - 1. Furnish units in longest practicable lengths to minimize field splicing.
 - 2. Include accessories including transition accessories as required to provide continuous expansion control systems.

2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Expansion control systems shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. The term "withstand" means "the system will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."

2.3 PREFORMED TRAFFIC GRADE EXPANSION JOINT

- A. Seismic Joint: Subject to compliance with requirements, provide **DSM Expansion Joint by Emseal or approved equal**. ~~MM-SSP Series Expansion Joint by MM Systems Corporation.~~
 - 1. ~~Model: SSP-200.~~
- B. Source Limitations: Obtain expansion control systems from single source from single manufacturer.

~~C. Slab-to-Slab Design Criteria:~~

- 1. ~~Total Movement: 2 inches.~~
- 2. ~~Nominal Movement: 2 inches~~
- 3. ~~Minimum Movement: 1-inch~~
- 4. ~~Maximum Opening: 3-inches~~
- 5. ~~Type of Movement: Seismic.~~
- 6. ~~Color: As selected by College from manufacturer's full range.~~

~~2.4 SEISMIC BACK-UP EXPANSION JOINT~~

- ~~A. Non-Traffic Grade Expansion Joint: Subject to compliance with requirements, provide DSM Expansion Joint by Emseal.~~
- ~~B. Slab-to-Slab Design Criteria:~~
 - 1. ~~Total Movement: 2 inches.~~
 - 2. ~~Nominal Movement: 2 inches~~
 - 3. ~~Minimum Movement: 1-inch~~
 - 4. ~~Maximum Opening: 3-inches~~
 - 5. ~~Type of Movement: Seismic.~~
 - 6. ~~Color: As selected by College from manufacturer's full range.~~

2.5 ACCESSORIES

- A. Manufacturer's standard primers, sealants and other accessories as indicated or required for complete installations.
- B. Prefabricated Transitions: Universal 90, Emseal.**

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to expansion control system manufacturer's written instructions.
- B. Coordinate and furnish accessories, setting drawings, and instructions for installing expansion control systems.

3.2 GENERAL INSTALLATION

- A. Comply with manufacturer's written instructions for storing, handling, and installing expansion control systems and materials unless more stringent requirements are indicated.
- B. Remove and repair unsound concrete in and around blockout. Repair any spalls.
- C. Sandblast substrate and ensure substrate is clean and dry prior to installing expansion joint.
- D. Ensure material nominal size matches joint size.

3.3 PREFORMED TRAFFIC GRADE EXPANSION JOINT INSTALLATION

- A. **Ensure material nominal size matches joint size.**
- B. **Mix epoxy and trowel a thin layer onto the joint faces to at least the depth of the DSM foam.**
- C. **Apply a thin layer of epoxy to both sides of the joint face.**
- D. **Remove shrink-wrap packaging and hardboard. Allow partial expansion until snug when inserted into epoxied joint faces.**
- E. **Insert material into joint until bellows is recessed by 1/4" in traffic applications.**
- F. **Join lengths by pushing silicone coated ends firmly together.**
- G. **Wipe silicone facing using clean, lint-free rag made damp with solvent.**
- H. **Before the epoxy cures, force the tip of the sealant tube between the foam and the substrate and inject a silicone sealant band. Tool overflow sealant into a cove bead between the top of the silicone bellows and the substrate. Tool silicone between joined lengths so that bellows is not restrained by excess silicone.**
- I. ~~Install base member with wedge bolt anchor.~~
- J. ~~Mask off top deck parallel with edge of blockout and top of aluminum base member.~~
- K. ~~Backfill blockout with infill material up to the height of the base member.~~
- L. ~~Immediately attach extension plates.~~
- M. ~~Install seismic centering devices and slide plate with impact dampener.~~
- N. ~~Torque hardware in accordance with manufacturer's recommendations. And written installation guidelines.~~

~~3.4 BACK-UP EXPANSION JOINT~~

- A. ~~Apply a thin, approx. 1/16 inch, layer of two-component epoxy adhesive to the sides of the expansion joint and to the sidewalls of the expansion joint opening.~~
- B. ~~Apply a thin bead of silicone sealant along edge of bellows at end where material will join with next length. Wipe silicone facing using clean, lint-free rag made damp with solvent.~~
- C. ~~Insert material into joint with at least 1/4 inch recess and adhere to one joint face. Allow material to expand against other joint face.~~
- D. ~~Blend sealant at joints into the bellows to create a consistent finished appearance. Take precaution not to restrict the folds of the bellows.~~
- E. ~~Once expansion joint has equalized its expansion across the joint, gun and tool fillet bead of liquid silicone at the substrate-to-bellows interface.~~

3.5 REPAIRS

- A. Defects or deficiencies include adhesive and cohesive failures, system's inability to accommodate specified movements, moisture penetration in case of watertight applications, inability to withstand loading and traffic requirements, cracking of nosing/ filler materials due to aggregate loading, not conforming to specified geometries, and improper workmanship.

- B. Defects and deficiencies are to be corrected by the expansion joint installer at no cost to the College during the period of warranty.

3.6 PROTECTION

- A. Do not remove protective covering until finish work in adjacent areas is complete.
- B. Protect the installation from damage by work of other Sections. Damaged expansion joints shall be replaced at no cost to the College.

END OF SECTION

Leak Remediation for Laney College Buildings A, B, F, & G – Phase 1

SECTION 22 1423

STORM DRAINAGE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes replacement and provision of the following at existing podium drain locations and existing podium planter locations:
1. Installation of new roof drain assemblies at existing plaza area drain locations. (both for base and alternate courtyards)
 2. Test, check and clean all plumbing drains from plaza deck and provide report of findings prior to start of demolition work. Report all leaks and clogs immediately to college.
 3. Installation of new pipe hanger supports and cast iron leader piping below deck to existing vertical.
 4. Installation of new sanitary tee fitting at existing vertical.
 5. Contractor shall be required to remove and replace existing insulation where mounted to underside of deck at drain locations to properly perform work.
 6. Contractor shall remove and reinstall ceiling tiles, architectural features, tarps, ceiling grid as necessary to properly perform the work.
 7. Contractor shall protect existing ductwork, light fixtures and other building components to properly perform the work.
 8. Courtyard F Only – Contractor shall be responsible for architectural screening and metal work that will require disassembly and reinstallation to properly perform the work.
 9. All drain bowls and piping up to next sanitary tee connection shall be wrapped with insulation.
 10. Contractor responsible for protecting drain weep holes and shall coordinate protection of weep holes with general and concrete contractors.
 11. Contractor shall be required to demolish existing planter irrigation and cap main line below deck.
 12. Contractor responsible for coordination of shut off and startup of irrigation system with college.
 13. Contractor to work off hours to accommodate college's class schedules.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated including, but not limited to, the following:
1. Drain bowl
 2. Strainer
 3. Clamping ring
 4. Lead Seals
 5. Sanitary Tee Fittings
 6. Metal pipe hangers and supports.
 7. Accessories

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) Publications
1. ASTM C564-70 Rubber Gaskets for Cast Iron Soil Pipe and Fitting
 2. ASTM A74-87 Cast Iron Soil Pipe and Fittings
 3. ASTM C 552-86 Cellular Glass Thermal Insulation
- B. Cast-Iron Soil Pipe Institute (CISPI) Publications
1. CISPI 301-85 Cast-Iron Soil Pipe and Fittings for Hubless Cast-Iron Sanitary Systems

- 2. CISPI 310-85 Patented Joint for Use in Connection with Hubless Cast-Iron Sanitary Systems.
- C. National Association of Plumbing-Heating-Cooling Contractors (PHCC) Publication
 - 1. National Standard Plumbing Code, latest edition
- D. International Conference of Building Official (ICBO) Publication
 - 1. Uniform Building Code, latest edition
- E. International Association of Plumbing and Mechanical Officials (IAPMO) Publication
 - 1. Uniform Plumbing Code, latest edition.

1.4 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

1.5 REGULATORY REQUIREMENTS

- A. Conform to all local, county, and state building requirements.
- B. The Contractor shall be responsible for obtaining all necessary permits for demolition of existing plumbing fixtures and installation of the Work.
- C. The Contractor shall be responsible for scheduling all tests and inspections with municipal building inspectors.

1.6 APPLICATOR QUALIFICATIONS

- A. Company specializing in plumbing installation.
- B. Minimum of five (5) years documented experience.
- C. Licensed to do business as a plumbing contractor in the state of California.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Only submitted and approved materials shall be utilized.
- B. No products utilized within this project shall contain asbestos.

2.2 FLOOR DRAINS

- A. Cast-Iron, Two-Stage Floor Drain, Combination Invertable Membrane Clamp and Adjustable Collar with Seepage Slots at each Stage and Polished Bronze Perforated Standpipe Strainer and Polished Bronze Dome:
 - 1. Basis of Design: Subject to compliance with requirements, provide Z415S with Type "S" Strainer; Zum
 - 2. Standard: ASME A112.6.4, for general-purpose drains.
 - 3. Body Material: Hot-dip galvanized cast iron.
 - 4. Dimension of Body: Match existing.
 - 5. Outlet: Bottom.
 - 6. Strainer: Perforated, bronze, with stainless mesh screen over dome and standpipe
 - 7. Standpipe Length: Sufficient length for cleanout to be on top of soil
- B. Hot dipped galvanized cast-iron drains.
- C. Integral non-puncturing flashing clamp device.
- D. Provide strainers and clamping rings of the appropriate size for the drains.

2.3 PIPING

- A. All fittings shall be long radius.
- B. Cast-Iron hubless pipe and fittings shall conform to CISPI 301 with CISPI 310 coupling joints.

- C. Cast-Iron hub and spigot pipe and fittings shall conform to ASTM A-74 with ASTM C-564 rubber compression gaskets joints.

2.4 METAL PIPE HANGERS AND SUPPORTS

- A. Stainless-Steel Pipe Hangers and Supports
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 3. Hanger Rods: Continuous-thread rod, nuts, and washer made of 316 Stainless Steel

2.5 DRAIN BOWL AND PIPING INSULATION

- A. Fiberglass batt supplied in pre-formed/fitted jackets for drain bowls and pipes.
- B. Drain bowl jackets shall be covered with pre-formed PVC. Jackets with seems solvent welded
- C. ASTM C-552

2.6 ACCESSORIES

- A. Fasteners: Type 316 Stainless Steel.
- B. Metal Accessories: Sheet metal strips, clamps, anchoring devices, and similar accessory units required for installation; matching or compatible with material being installed.

PART 3 - EXECUTION

3.1 GENERAL

- A. Provide and install strainers, clamping rings and accessories to obtain a fully functional drainage system.
- B. All work shall conform to the California Plumbing Code.
- C. The Contractor shall responsible for locating and avoiding all hidden construction while installing Work. The Contractor is solely responsible for making all investigations required to install the Work without damage to other building components. Any such damage shall be repaired at the Contractor's expense and to the College's satisfaction. In the event that the Contractor's repairs are unacceptable to the College, the College will take corrective action and back-charge the Contractor for all restoration costs resulting from the failure to satisfactorily restore the building to original condition.
- D. Closely coordinate all drain Work with that specified in Division 07.

3.2 EXAMINATION

- A. Prior to demolishing the existing roof system, the Contractor shall examine all drains to determine if the existing drains are serviceable.
- B. The Contractor shall provide the College with a written statement of the existing drain serviceability prior to demolition.
- C. The Contractor shall provide the College with a written letter stating the proposed modified drainage system can be installed without damage to the existing structure or appurtenances.
- D. The Contractor shall immediately report all unacceptable conditions to the College and not proceed until condition is resolved in writing.

3.3 INSTALLATION

- A. Install drains at low points of areas according to manufacturer's written installation instructions.
 - 1. Install flashing collar over flange of drain to prevent leakage between drain and adjoining waterproofing. Maintain integrity of waterproof membranes where penetrated. Do not block drain weep holes.
 - 2. Install expansion joints, if indicated, in drain outlets.
 - 3. Position drains for easy access and maintenance.

3.4 CONNECTIONS

- A. Tie into existing piping to storm sewer. Repair or replace existing piping and fittings with hubless piping and fittings as required for complete installation of floor drains.

3.5 FLASHING INSTALLATION

- A. Closely coordinate drain Work with waterproofing installation.

3.6 INSULATION

- A. Install insulation jacket in accordance with the insulation and drain bowls manufacturer's printed instructions.
- B. All new plaza drains installed and associated new piping are to be insulated.

3.7 CLEANING OF DRAINAGE SYSTEM

- A. After drain Work and waterproofing is complete, clean all drain piping of debris and clogs such that the system is free flowing.
- B. Utilize "Roto-Rooter" type equipment down from the drain to the storm sewer connections for each drain location.
- C. Clean each drain.
- D. College's Representative must be present during cleaning. Provide the College 48 hours notice prior to cleaning to arrange for observation of Work.
- E. Site clean-up shall be complete and to the satisfaction of the College.

3.8 FIELD TESTING

- A. Before final acceptance of Work, test each system as in service to demonstrate satisfactory performance.
- B. Immediately correct repairs to unacceptable conditions and retest system to confirm repair performance.

3.9 SITE CLEAN UP

- A. Clean-up shall be complete and to the satisfaction of the College.
- B. Restore all interior and exterior surfaces damaged or soiled by the Contractor's work to the College's satisfaction.
- C. Failure to restore surfacing in a satisfactorily manner will result in the College obtaining the service of a specialty contractor to effect satisfactory repairs. All costs incurred by the College for restoration Work shall be the sole responsibility of the Contractor.

3.10 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION