CONTRA COSTA COMMUNITY COLLEGE DISTRICT

C-4016 NEW SCIENCE BUILDING – INCREMENT 1, SITE WORK
CONTRA COSTA COLLEGE, San Pablo, CA

Date: 11/20/18

NOTICE TO ALL CONTRACTORS

You are hereby notified of the following changes, clarifications and/or modifications to the original Contract Documents, Project Manual, Drawings, Specifications and/or previous Addenda. This Addendum shall supersede the original Contract Documents and previous Addenda wherein it contradicts the same, and shall take precedence over anything to the contrary therein. All other conditions remain unchanged.

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated 10/17/18. Acknowledge receipt of this Addendum in space provided on the Bid Proposal Form. Failure to acknowledge may subject Bidder to disqualification.

A. Deletions, Additions, Changes, Revisions

SPECIFICATIONS

1. Item: SECTION 00100 NOTICE INVITING BIDS, IMPORTANT INFORMATION
   Change From: BIDS DUE no later than: November 27, 2018 2:00 PM
   Change To:  BIDS DUE no later than: December 12, 2018, 2:00 PM

2. Item: SECTION 00600 CONSTRUCTION AGREEMENT, (§1.4) Completion Time:
   Change From: (§1.4) Completion Time: 189 Calendar Days from the Notice to Proceed to Substantial Completion, and 45 Calendar Days from Substantial Completion to Final Completion (Remaining Work).
   Change To:   (§1.4) Completion Time: 177 Calendar Days from the Notice to Proceed to Substantial Completion, and 44 Calendar Days from Substantial Completion to Final Completion (Remaining Work).
3. **Item:** SECTION 01010 - SUMMARY OF WORK, 1.14B Rain Delays

   **Delete** 1.14B Rain Delays (entire paragraph) and
   **Replace** with the following paragraph: “Rain Delays: Since the contract work will start on site during the rainy season, the Contract duration noted in Section 00600 Construction Agreement is based on the Contractor encountering **10** work days of rain or delays due to rain (e.g., muddy conditions). The Contractor shall include **10** work days in their original Microsoft Project Schedule just prior to the Substantial Completion milestone. In the event the Project is delayed at the site by rain or rain impacts beyond the **10** work days, the Contractor will be entitled to a non-compensable time extension.”

4. **Item:** SECTION 01140 WORK RESTRICTIONS

   **Delete:** Existing SECTION 01140 WORK RESTRICTIONS, in its entirety, and **Replace with the attached SECTION 01140 WORK RESTRICTIONS**, in its entirety.

5. **Item:** SECTION 02 41 19 SELECTIVE STRUCTURE DEMOLITION

   **Revisions:** 1.2B1. and 1.2B2; 3.1E.1; 3.2A.1; 3.3A.1 and 3.3C. references were revised to the correct references in respective specification 1.

6. **Item:** SECTION 31 23 00 EXCAVATION AND FILL

   **Additions:** 3.4C to 3.4H; 3.5D; 3.6A.1; 3.7C and 3.7E. and
   **Revisions:** 3.7D. and 3.9B.

7. **Item:** SECTION 31 23 19 DEWATERING

   **Deletions:** 3.3B OBSERVATION WELLS were deleted.

8. **Item:** SECTION 31 50 00 TEMPORARY EXCAVATION SUPPORT AND PROTECTION

   **Deletions:** 2.1A.4. Shotcrete was deleted; 3.4 TIEBACKS were deleted.

9. **Item:** SECTION 33 41 00 STORM DRAINAGE SYSTEM

   **Deletions:** 1.2B. Division 03, Portland Cement Concrete reference; 1.6B.9 Bio-retention soil were deleted.

**DRAWINGS**

1. **Sheet C2.01 PILE DEMOLITION PLAN**

   **Revisions.** Pile cut-off elevations were revised.

2. **Sheet C3.00 OVER-EXCAVATION PLAN**

   **Additions.** Over-exavation plan drawing was added.

3. **Sheet C3.01 ROUGH GRADING PLAN**

   **Revisions.** Renumbered from C3.00 to C3.01; ROUGH GRADING NOTES; Protect existing trees notes were revised.
**Additions.** Temporary shoring locations have been identified.

4. **Sheet C4.00 UTILITY PLAN**
   **Deletions.** Storm water treatment area and associated stormdrain lines have been removed.

5. **Sheet C5.00 EROSION CONTROL PLAN**
   **Deletions.** Drain inlets were removed.

6. **Sheet C6.00 CONSTRUCTION DETAILS**
   **Deletions.** Removed details 10 STORMWATER TREATMENT PLANTER and 11 DRAINAGE BUBBLER. Detail 12 CONNECT TO EXISTING CONCRETE has been renumbered as detail 10.

B. **If you have any questions regarding this Addendum, please contact:**

Ron Johnson, Critical Solutions, Inc.
Email: bids@csipm.com

**NOTE:**
- Copy “C-4016 New Science Building – Increment 1, Site Work” into email SUBJECT line.
- Questions (RFIs) must be submitted within the body of the email. Do not include attachments.

Completion
All other terms and conditions of BID are to remain the same.

**ATTACHMENTS**
- Pre-Bid Meeting Notes
- Bidder's questions and District responses
- SECTION 01140 WORK RESTRICTIONS
- Sheet C2.01 PILE DEMOLITION PLAN
- Sheet C3.00 OVER-EXCAVATION PLAN
- Sheet C3.01 ROUGH GRADING PLAN
- Sheet C4.00 UTILITY PLAN
- Sheet C5.00 EROSION CONTROL PLAN
- Sheet C6.00 CONSTRUCTION DETAILS

SMITHGROUPJJR
301 Battery Street, 7th Floor
San Francisco, CA 94111

**Architect of Record: Roxanne Malek**

Division of the State Architect
1515 Clay Street, Suite 1201
Oakland, CA 94612

**END OF ADDENDUM #1**
MEETING NOTES
MANDATORY PRE-BID MEETING & SITE WALK
C-4016 New Science Building - Increment 1, Site Work

PROJECT NUMBER/NAME: C-4016 New Science Building Increment 1, Site Work
CAMPUS: Contra Costa College
DSA #: 01-117149 Inc. 1

Date: November 1, 2018
Time: 10:00 a.m.
Location: Contra Costa College
Building and Grounds Department Conference Room
2600 Mission Bell Drive
San Pablo, CA 94806

An on-site job walk[field presentation followed the meeting. Attendance at this meeting and job walk was mandatory for potential bidders (GCs). At completion of the field presentation, a Certification of Site Visit (Section 00450), signed by the District, was provided to all potential bidders. REMEMBER - This signed form must be submitted with your bid.

I. Project Team Members:
   Ines Zildzic, Interim Chief Facilities Planner – Contra Costa Community College District (CCCCD)
   Kathleen Halaszynski, Director of Construction Program Control – CCCCD
   Ben Azarnoush, District Design Director – CCCCD
   Ben Cayabyab, Purchasing/Contracts - CCCCD
   Ron Johnson, Senior Project Manager – Critical Solutions, Inc. (CSI)
   Kelly Johnson, Senior Construction Manager – CSI
   Irene Morris, Architect of Record (AOR) – SmithGroupJJR (SGJJR)
   Yuki Suda, Project Architect – SmithGroupJJR (SGJJR)
   Ken Pilgrim, Terracon/RGA Environmental – Abatement Consultant
   TBD, Inspector of Record (IOR)
   Bruce King, Buildings & Grounds Manager – Contra Costa College (CCC)

II. Welcome and Introductory Remarks – Ron Johnson
   • Team Introductions
   • Public Safety, Noise, and Parking
   • Project Stabilization Agreement DOES APPLY to this project.
   • EADOC Web-Based Management System will be used.
   • LEED Silver
   • Other Project Increments (0, 2 and 3)

III. Brief Overall Project Description – Ron Johnson
   • The overall project includes four increments. Increment 0 is on-going and includes abatement and demolition of existing structures. Increment 1 is described below. Increment 2 includes
the construction of the main building through occupancy. Increment 3 includes the abatement and demolition of the existing structures once faculty and students move into the new building.

IV. Summary of Work
In general, the Work consists of the following, but not limited to: maintenance of temporary safety signage, wayfinding signage, roads, fencing, lighting and maintenance of storm water pollution prevention plan; partial demolition of some existing Health Sciences Building foundations; over-excavation and compaction; installation of below ground utilities; and all related work.

V. Project Work Restrictions (SECTION 01140) & Temp Facilities and Controls (Section 01500)
- Temporary Work Activity Plan. Construction trailers. Staging areas, etc.
- Temporary Fencing, Lighting and Signage
- Utility Shutdowns
- Truck Access and One-Way Road
- Fire Lane Access for Fire District. Must remain clear at all times.
- Storm Water Pollution Prevention. See Section 01572 and civil drawings.

VI. Bid Phase Communications & Correspondence:
- All questions related to this Project must submitted electronically (email) and directed to:

Ron Johnson, Sr. Project Manager
Critical Solutions, Inc.
bids@csipm.com

IMPORTANT:
- Copy “C-4016 New Science Building – Increment 1, Site Work” into email SUBJECT line.
- Questions (RFIs) must be submitted within the body of the email. Do not include attachments, or the email will be returned requesting the questions within the body of the email.

VII. Addenda Update:
- Addendum #1 with include the pre-bid meeting minutes and sign-in sheet, changes to some of the technical specifications, and the over-excavation and compaction portion of the scope of work that was not included in the original bid documents.

VIII. Bid Phase Schedule Milestones (Note: See Addendum 1 since some of these dates have been changed)
- Last day for RFI: ..................... November 15, 2018 - prior to 5:00 p.m.
- Last Addendum Issued: ............ November 20, 2018
- Bid Opening: .....................November 27, 2018, 2:00 p.m.
- Award of Contract: .................December 13, 2018 (approximate)
- Notice to Proceed.....................January 7, 2019 (approximate)
- Work Starts on Site................. February 4, 2019 (approximate)

IX. Bid Opening:
- Bids must be received at the Contra Costa Community College District Office, 500 Court St, Martinez, CA, by November 27, 2018, prior to 2:00 PM. (Note: This has changed in Addendum 1).
• All bids will be time stamped at the reception counter in the building lobby.
• Any bid received after the bid opening time will be rejected.
• An announcement will be made at the two-minute mark prior to the bid opening deadline.

X. Bid Package:

• Review your bid package carefully before submitting it. Be sure to include all required documentation, or bid will be rejected.
  ✦ Completed Bid Proposal Form (Section 00300), to include bidder’s name and signature.
  ✦ Active CLSB license number, as required in the bid documents.
  ✦ Active DIR Contractor Registration Number. Contractor must be actively registered with DIR prior to submitting any public bids.
  ✦ Acknowledgement of any addenda issued.
  ✦ Listing of actively-licensed subcontractors, including CSLB license and DIR numbers.
  ✦ Bid Bond – 10% of bid amount.
  ✦ Bid Bond must accompany bid; company checks can be accepted, but no cash will be accepted.
  ✦ Statement of Bidder’s Qualifications (Section 00400), signed by an authorized officer of the Bidder.
  ✦ Non-Collusion Affidavit, fully executed.
  ✦ Completed and signed Certification of Site Visit (Section 00450).
  ✦ Other documents, as required by the Contract Documents.

XI. Contract Duration Discussion

• SECTION 00600, CONSTRUCTION AGREEMENT
• Work on Site Cannot Start Until February 4, 2019. (Note: This has changed in Addendum 1).
• **189 Calendar Days** from Notice to Proceed (NTP) to Substantial Completion (SC). (Note: This has changed in Addendum 1.)
• 45 Calendar Days between SC and Final Completion (FC)
• Also see Summary of Work and Project Work Restrictions, (Item V, above).
• **Delays Due to Rain.** Section 01010, Article 1.14B. 30 work days beyond February 4, 2019. (Note: This has changed in Addendum 1).

XII. Substitution requests MUST comply with Contract Documents

• SECTION 00700, GENERAL CONDITIONS, Article 3.11.4
• Sample Substitution Request form is included in bid package.

XIII. DSA (CA Division of the State Architect)

• This is a DSA-monitored project; a DSA-approved project inspector(s) will inspect the construction.
• At the conclusion of construction, the Contractor shall file verified reports with DSA indicating the work has been performed in compliance with the approved plans and specifications.

XIV. Site Job Walk/ Field Presentation

• Walked around the entire construction site and then the PM distributed the signed Certification of Site Visit form.
# Pre-Bid Meeting – Sign-in Sheet

**PROJECT TITLE:** C-4016 NEW SCIENCE BUILDING, Increment 1, Site Work  
**DATE / TIME:** November 1, 2018, 10:00 a.m.  
**LOCATION:** Building and Grounds Conference Room, Contra Costa College

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<tr>
<th>COMPANY NAME</th>
<th>NAME</th>
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<tbody>
<tr>
<td>CF Contracting</td>
<td>Cory Prudden</td>
<td>President</td>
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<tr>
<td>OC Jones &amp; Sons</td>
<td>Jason Martin</td>
<td>Estimator</td>
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<tr>
<td>J-Line Constructors</td>
<td>Stephen Seabolt</td>
<td>Estimator / GS</td>
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Please provide business card

**Office Phone:** (415) 721-7160
**Cell Phone:** (415) 310-5447
**Email Address:** cprudden@cfcontracting.com

Please provide business card

**Office Phone:** (510) 809-3432
**Cell Phone:** (562) 393-4651
**Email Address:** jmartin@ocjones.com

Please provide business card

**Office Phone:** 510-251-6400
**Cell Phone:** 209-598-7000
**Email Address:** stephen @ jlineconstructors.com

Page 1 of 1
# Pre-Bid Meeting – Sign-in Sheet

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<td>McQuire and Hester</td>
<td>Connor Stahl</td>
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<td><a href="mailto:estimating@mcquireandhoster.com">estimating@mcquireandhoster.com</a></td>
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<td>Schreder &amp; BrandT</td>
<td>Ian Patterson</td>
<td>Project Manager</td>
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# Pre-Bid Meeting – Sign-in Sheet

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<tr>
<td>Rodan Builders Inc</td>
<td>Clinton Freey</td>
<td>Project Engineer</td>
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<td>650-606-1760</td>
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<td><a href="mailto:Bids@rodanbuilders.com">Bids@rodanbuilders.com</a></td>
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<tr>
<td>Cal Elite Builders</td>
<td>Roger Santos</td>
<td>Project Engineer</td>
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<td>707-422-4017</td>
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<td><a href="mailto:rogerse@calelitebuilders.net">rogerse@calelitebuilders.net</a></td>
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<tr>
<td>Kees Engineering</td>
<td>Patrick Madden</td>
<td>Project Manager</td>
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<td>(347) 613-5788</td>
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<td><a href="mailto:patrick@keesengineering.com">patrick@keesengineering.com</a></td>
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<td>McKinnon and Company</td>
<td>John</td>
<td>Project Manager</td>
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<tr>
<td>Pacific Coast General Engineering</td>
<td>Derrick Lozano</td>
<td>Estimator/PM/VP</td>
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<tr>
<td>Marvin Collins Construction</td>
<td>Miguel Castanos</td>
<td>Project Engineer</td>
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<tr>
<td>BKF</td>
<td>Dayne Johnson</td>
<td>Associate</td>
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REQUESTS FOR INFORMATION

C-4016 NEW SCIENCE BUILDING – INCREMENT 1, SITE WORK
Contra Costa College, 2600 Mission Bell Dr, San Pablo, CA 94806
=================================================================================================

1) **Question:** It appears that Contra Costa Community College has not provided a "Bid Bond" form in the bid package (they have provided a payment and performance bond form for the contract). I just wanted to confirm that we should include a bid bond on our Surety's form.

   **Response:** Yes, please include a bid bond on your Surety's form.

2) **Question:** A Geotechnical Report is referenced several times in the plans and specs. Can this be made available digitally?

   **Response:** The GEOLOGIC AND SEISMIC HAZARDS ASSESSMENT REPORT and the GEOTECHNICAL ENGINEERING INVESTIGATION REPORT, and related addenda letters to the report(s), are available, for review, on the District web site: [http://www.4cd.edu/webapps/PurchasingViewBids/default.aspx](http://www.4cd.edu/webapps/PurchasingViewBids/default.aspx).

3) **Question:** Sheet C2.01 calls for the final elevation of Pile No. 38 to be 65’. Please confirm this is correct.

   **Response:** Pile No. 38 shall be 84.0’. (See Addendum #1)

4) **Question:** Should the bioretention soil be included as part of Increment 1 Site Work pricing? And if required, please provide a specification for the bioretention soil.

   **Response:** Bioretention soil will be removed from the scope of work of Increment 1. (See Addendum #1)

5) **Question:** It looks like there isn’t a scope for Mechanical. Please let us know.

   **Response:** There is no HVAC scope of work for this project. All HVAC scope is included in Increment 2 that will be out to bid around April or May of 2019.

6) **Question:** Ref, #9. Page 5 of Section 00400; Are the reviewed or audited financial statements required to be from a CPA?

   **Response:** Desired, but no. Please note the first paragraph of Section 00400 regarding verification under oath.
PART 1 – GENERAL

1.1 RELATED DOCUMENTS
   A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 SUMMARY OF WORK RESTRICTION REQUIREMENTS
   A. Prior to the start of Work, Contractor shall familiarize itself with the Work Restrictions as they relate to all Work required by the Contract Documents.
   B. Temporary Work Activity Plan shall include:
      1. The Increment 0 Contractor has installed temporary fencing, temporary lighting and the required SWPPP. The Increment 1 Contractor shall be responsible for assuming responsibility for the maintenance of all temporary facilities installed through the Final Completion date of the Increment 1 Contract. The Increment 1 Contractor shall acknowledge in writing the condition of said facilities prior to starting work on site and will be responsible for any required changes to the in-place temporary facilities to perform the work required within the scope of work of Increment 1.
   C. Not used.
   D. Contractor shall perform and complete all Temporary Work Activities to ensure the following:
      1. The continuous and uninterrupted use of all occupied areas or areas within buildings that require 24/7 utility services, including but not limited to the applicable power, data, telephone, waterline, fire alarm system, fire sprinkler system mechanical, HVAC, gas, storm, sewage, plumbing, and electrical systems serving these areas.
      2. Protection of students, staff, faculty and personnel in occupied areas and surrounding and adjacent areas from the hazards and dust associated with construction.
      3. The work areas, roads, parking lots, and streets are to be kept clear, clean, and free of loose debris, construction materials and partially installed work which would create a safety hazard or interfere with subcontractor and personnel duties and traffic. The Contractor shall sweep the areas clean at the end of each work day and make every effort to keep dust and noise to a minimum at all times.
      4. Prior to starting work, the Contractor shall provide a proposed schedule of temporary interruptions or shutdown of any utility or electrical/mechanical systems to the District Representatives. The Contractor shall provide written request five (5) working days prior to the desired time for the proposed interruption(s). Work shall be performed at times other than the Campus’s normal hours of operation, or as directed by the District’s Representative. Temporary interruptions shall be completed prior to the start of the next business day at the Campus to maintain continuous and uninterrupted use of Campus facilities and utility systems.
1.3 SUMMARY OF WORK RESTRICTIONS

A. General: All Temporary Work Activities must be completed within the timelines, work shift times, and the scheduled time period as required by the Contract Documents. Comply with the following:

1. The Temporary Work Activity Plan shall be approved by the District prior to any Work starting on the Project Site.

2. Contractor shall have all temporary fencing, signage, ADA compliant pathways and other temporary measures described in Paragraph 1.2 above installed, operational and accepted by the District prior to starting the Work on site.

B. Time Related Work Restrictions within the Contract Time

1. Although the Contract Time is a total of 177 calendar days between the Notice to Proceed and Substantial Completion, as articulated in Section 00600, Construction Agreement, Work by the Contactor is restricted and limited to specific time periods at specific locations during this contract duration as follows:

   1.1 Commencement of Work on the Project Site: The Contractor cannot and shall not start any Work on the project site until Monday, April 2, 2019, unless the District provides written approval. The time between the Notice to Proceed and commencing Work on the project site shall be used for completing all off-site requirements (e.g. transmittal of all required submittals; submittal and approval of the CPM schedule; etc.)

   1.2 See the Section 1010, Summary of Work for related requirements to include in the Contractor’s Microsoft Project Schedule an activity for rain and the impacts of rain on this project.

   1.3 Saturday Work after April 2, 2019: Contractor shall include in its bid working on four Saturdays. Work on said Saturdays is reserved for either noisy activities that will be impactful to college activities and critical path and near critical path activities shown on the Contractor’s approved CPM schedule. Near critical path activities is defined for the purposes of this section as Work having less than 5 work days of total float.

   1.4 Sunday Work: Work on Sunday is not allowed, unless otherwise approved by the District.

   1.5 College Finals Week: The Contractor shall not work during Finals Week (5 work days) that results in the generation of noise that will disturb students taking finals. The Contractor shall submit to the District for approval the activities the Contractor may want to perform during finals week. Unless otherwise approved by the District/College, said work cannot be performed during this week.

2. The Contractor is responsible for its own means and methods to comply with these work restrictions, and to submit its schedule in accordance with Section 00700, Article 3.8.

C. Other Project Requirements and Restrictions

1. The Contractor’s staging area for trailers, construction vehicles, construction equipment and materials is restricted within the temporary construction fencing of the project site. Contractor shall not block the fire access lane at any time within the project site or utilize for parking, staging or locating trailers. Contractor must allow fire department access into the
project site at all times. The Contractor will be provided an additional six (6) parking spaces, if needed, outside of this area, but within 200 yards from the area enclosed by the temporary construction fencing. Contractor is responsible for obtaining parking passes from the Campus Police Services. Additional parking may be made available near Parking Lot 16, if needed.

2. Due to the one lane vehicular road north of the buildings to be demolished, the Contractor is cautioned not to attempt to drive the wrong way on this road. Violators will be ticketed by the Campus Police Services.

3. Truck traffic, material deliveries and equipment deliveries on this one-way road to the project site shall be closely monitored and controlled by the Contractor to avoid any delays to other vehicles using this road by faculty and students. The Contractor shall include delivery milestones in its Project CPM Schedule, and provide written notice at least two (2) work days to the District and to the Police Services for all deliveries. Any material or equipment deliveries that could potentially delay traffic on this one-way road will have to be delivered after normal business hours, unless otherwise approved by the District. Contractor truck deliveries that stop traffic on this road or other roads on Campus could be subjected to being ticketed by the Campus Police Services.

4. Truck Hauling Routes. Obtain City of San Pablo approval for preferred construction traffic routing over public streets and/or other construction truck access and egress from public streets to the Site. Contractor shall avoid routing trucks through residential areas. Prohibit mobilization and demobilization of heavy construction equipment and trucks on residential streets. No construction truck access or egress is permitted on Mills Avenue.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All labor, equipment, materials, and all other requirements shall be provided and will be the sole responsibility of the Contractor for execution of entire work described in this specification section.

PART 3 - EXECUTION

3.1 MEANS AND METHODS OF CONSTRUCTION

A. Contractor to provide and shall be responsible for any and all means and methods that will be constructed, implemented and/or maintained on the site for all work described above.

END OF SECTION 01140
SECTION 02 41 19 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Demolition and removal of selected existing concrete piles as shown in sheets C2.00 and C2.01.

B. Related Requirements:
   1. Section 01140 "Work Restrictions" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
   2. Section 00700 "General Conditions" for cutting and patching procedures.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

A. Pre demolition Conference: Conduct conference at Project site.
   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 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

1. Schedule of Selective Demolition Activities: Indicate the following:
   a. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   b. Interruption of utility services. Indicate how long utility services will be interrupted.
   c. Coordination for shutoff, capping, and continuation of utility services.
   d. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

B. Predemolition Photographs or Video: Submit before Work begins.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Storage or sale of removed items or materials on-site is not permitted.

D. 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.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction and previous demolition work provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. 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 Architect.

E. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs.
   1. Comply with requirements specified in Section 01010 "Summary of Work".
   2. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.
   3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
   1. Comply with requirements for existing services/systems interruptions specified in Section 01010 "Summary of Work".

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
   1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
   2. Arrange to shut off indicated utilities with utility companies.
   3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
   4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
      a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
      b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
      c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.

g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

3.3 PREPARATION

A. 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. Comply with requirements for access and protection specified in Section 01500 “Temporary Facilities and Controls.”

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. 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.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
   4. Cover and protect furniture, furnishings, and equipment that have not been removed.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01500 “Temporary Facilities and Controls.”

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished; comply with requirements in Section 31 50 00 “Temporary Excavation Support and Protection”

   1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

   1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
   2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.


B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

4. Comply with requirements specified in Section 01505 "Construction Waste Management."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.
3.7 CLEANING
   A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE
   A. Existing Items to Be Removed: Refer to Drawings.
   B. Existing Items to Remain: Refer to Drawings.

END OF SECTION
SECTION 31 23 00 - EXCAVATION AND FILL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section describes the requirements for earthwork operation, as shown on the Drawings and specified:
   1. Excavation and/or embankment from existing ground to subgrade, including soil sterilant, for parking areas, walks, paths, and any other site improvements called for on the Plans.
      a. Aggregate base.
      b. Dispose off-site waste, excess or unsatisfactory material.

1.2 RELATED DOCUMENTS

A. Geotechnical Report: “Geotechnical Engineering Investigation Report, C-4016 New Allied Science Building, Contra Costa College, 2600 Mission Bell Drive, San Pablo, California.” Kleinfelder Project No.: 20181569.001A, Dated: October 17, 2017, including:
   1. Addendum Letters No. 1 and No. 2 dated March 2 and March 4, respectfully.

B. Caltrans Standard Specifications:
   1. Section 17, Watering.
   2. Section 19, Earthwork.
   3. Section 26, Aggregate Bases.

1.3 RELATED SECTIONS

A. Section 31 11 00 – Clearing and Grubbing

1.4 REGULATORY REQUIREMENTS

A. State of California, Department of Transportation (Caltrans), Standard Specifications

B. ASTM
   1. D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
   2. D1557-70 for testing in compaction.
   3. D 1586, Method for Penetration Tests and Split-Barrel Sampling of Soils.
   4. D 2487, Classification of Soils for Engineering Purposes.


D. CAL/OSHA, Title 8.

1.5 DEFINITIONS

A. Borrow: Approved soil material imported from off-site for use as Structural Fill or Backfill.

B. Excavation: Removal of material encountered above subgrade elevations.
   1. Authorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions as shown on plans or authorized by the District's Representative.
   2. Unauthorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions without authorization by the District's Representative. Unauthorized excavation shall be without additional compensation.

C. Structural Backfill: Soil materials approved by the District's Representative and used to fill excavations resulting from removal of existing below grade facilities, including trees.

D. Structural Fill: Soil materials approved by the District's Representative and used to raise existing grades.

E. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material ¾-cubic yards or more in volume that when tested by an independent geotechnical testing agency, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below grade.

G. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below base or topsoil materials.

H. Unsuitable Material: Any soil material that is not suitable for a specific use on the Project. The District's Representative will determine if a soil material is unsuitable.

I. Utilities: onsite underground pipes, conduits, ducts and cables.

1.6 SUBMITTALS

A. Submittal procedure shall be as outlined in Division 1 – General Requirements.
B. Submit material certificates signed by the material producer and the Contractor, certifying that each material item complies with, or exceeds the specified requirements.

1.7 QUALITY ASSURANCE

A. Conform all work and materials to the recommendations or requirements of the District’s Representative.

B. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.

C. Excavate and backfill existing areas only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations. Backfill as necessary to achieve rough grade elevations as indicated per plan.

D. Perform excavation, filling, compaction and related earthwork under the observation of the District’s Representative. Materials placed without approval of the District’s Representative will be presumed to be defective and, at the discretion of the District’s Representative, shall be removed and replaced at no cost to the District. Notify the District’s Representative at least 24-hours prior to commencement of earthwork and at least 48 hours prior to testing.

E. The District’s Representative will perform observations and tests required to enable him to form an opinion of the acceptability of the Project earthwork. Correct earthwork that, in the opinion of the District’s Representative, does not meet the requirements of these Technical Specifications.

F. Upon completion of the construction work, certify that all compacted fills and foundations are in place at the correct locations, and have been constructed in accordance with sound construction practice. In addition, certify that the materials used are of the types, quality and quantity required by these Technical Specifications. The Contractor shall be responsible for the stability of all fills and backfills constructed by his forces and shall replace portions that in the opinion of the District’s Representative have been displaced or are otherwise unsatisfactory due to the Contractor’s operations.

G. Do not mix or place cement treated base when the temperature is below 36 degrees F or when the ground is frozen.

H. Identify and protect existing utilities.

I. Finish soil grade tolerance at completion of grading:
   1. Paved areas: +0.05 feet.
   2. Other areas: ±0.10 feet.

1.8 PROJECT CONDITIONS

A. Promptly notify the District and the District’s Representative of surface or subsurface conditions differing from those disclosed in conformance with Division 1 General Requirements.

B. Protect open excavations, trenches, and the like with fences, covers and railings to maintain
safe pedestrian and vehicular traffic passage.

C. Prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

D. Temporarily stockpile fill material in an orderly and safe manner and in a location approved by the District.

E. Provide dust and noise control in conformance with Division 1 General Requirements.

F. Environmental Requirements: When unfavorable weather conditions necessitate interrupting earthwork operation, areas shall be prepared by compaction of surface and grading to avoid collection of water. Provide adequate temporary drainage to prevent erosion. After interruption, compaction specified in last layer shall be re-established before resuming work.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from on-site excavations.

B. Obtain approval of on-site soil materials and borrow materials to be used for structural fill or structural backfill from the District's Representative.

C. On-Site Structural Fill and Structural Backfill: Soil or soil-rock mixture from on site excavations, free from organic matter or other deleterious substances. On-site structural fill and backfill shall not contain rocks or rock fragments over 3 inches in greatest dimension.

D. Imported Structural Fill and Structural Backfill: Conform to the requirements of on-site structural fill. Material shall also be non-expansive with a plasticity index of 12 or less, has a liquid limit less than 30, and has an expansion index less than 20. Gradation should meet the criteria in the following table:

<table>
<thead>
<tr>
<th>Fill Requirement</th>
<th>Test Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Size</td>
<td>ASTM¹</td>
</tr>
<tr>
<td>3 inch</td>
<td>100</td>
</tr>
<tr>
<td>¾ inch</td>
<td>70-100</td>
</tr>
<tr>
<td>No. 200</td>
<td>20-50</td>
</tr>
</tbody>
</table>

2.2 SOIL STERILANT

A. Commercial chemical for weed control, registered by EPA. Provide granular, liquid or wet-able powder form.
2.3 AGGREGATE BASE

   1. Class 2, 1-1/2-inch Maximum: Section 26-1.02B.
   2. Class 2, 3/4-inch Maximum: Section 26-1.02B.
   3. Class 3: Section 26-1.02C.

PART 3 - EXECUTION

3.1 GENERAL

A. Conform to Section 19, Earthwork, Caltrans Standard Specifications as modified by the
   Contract Documents.
B. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.
C. The use of explosives will not be permitted.

3.2 WET WEATHER CONDITIONS

A. Do not prepare subgrade, place or compact soil materials if above optimum moisture content.
B. If the District’s Representative allows work to continue during wet weather conditions, conform
   to supplemental recommendations provided by the District’s Representative and the project
   Geotechnical Report.

3.3 EXCAVATION

A. Excavate earth and rock to lines and grades shown on drawings as prepared by a licensed
   professional engineer and to the neat dimensions indicated on the Plans, required herein or as
   required to satisfactorily compact backfill.
B. Remove and dispose of large rocks, pieces of concrete and other obstructions encountered
   during excavation.
C. Where forming is required, excavate only as much material as necessary to permit placing and
   removing forms.
D. Provide supports, shoring and sheet piles required to support the sides of excavations or for
   protection of adjacent existing improvements. Refer to Section 31 50 00 – Temporary
   Excavation Support and Protection.

3.4 REMOVAL OF EXISTING FILLS AND UNSUITABLE MATERIAL

A. Over-excavate areas of existing fills and other unsuitable material encountered during mass
   grading as directed by the District’s Representative.
B. Conform with Division 1 General Requirements.

C. After site clearing, over-excavate by excavating the soil/bedrock to a level at least four (4) feet below the lower floor slab over the entire building footprint. Scarify to a depth of twelve (12) inches, uniformly moisture-condition to at least two (2) percent above optimum moisture content and re-compact as engineered fill to at least ninety (90) percent relative compaction (ASTM D 1557).

D. If the over-excavation bottom or subgrade surface consist of undisturbed bedrock, scarifying and re-compacting are not required.

E. The over-excavation should extend laterally to a minimum five (5) feet beyond the footprint of the new building, where physically possible.

F. Final over-excavation depths shall be determined by Geotechnical Engineer during construction based on the exposed subsurface conditions. Additional over-excavations may be required.

G. Imported material may be used to backfill the over-excavation. However, they should be placed in the upper portion of the over-excavation so that the new exterior continuous footings are keyed at least one foot into the onsite re-compacted clayey soils. Refer to Section 6.3.1 of the Geotechnical Report for fill requirements underneath the building footings.

H. Depressions, voids, and holes (including excavations from removal of underground improvements) that extend below the proposed finished grades should be cleaned and backfilled with engineered fill compacted to the requirements given. All clearing and backfill work should be performed under the observation of the project Geotechnical Engineer.

3.5 GRADING

A. Uniformly grade the Project to meet existing conditions.

B. Finish ditches, gutters and swales to the sections, lines and grades indicated and to permit proper surface drainage.

C. Round tops and bottoms of slopes as indicated or to blend with existing contours.

D. Cut and fill shall be no steeper than two (2) horizontal to one (1) vertical.

3.6 SUBGRADE PREPARATION

A. Prepare subgrades under paved areas, curbs, gutters, walks, structures, other surface facilities and areas to receive structural fill. A six (6) inch layer of three quarter (3/4) inch crushed rock or slab capillary break material shall be underlain with at least twelve (12) inches of “non-expansive” fill material. The material shall be placed beneath exterior flatwork and extend at least five (5) feet beyond the slab edges. Slab subgrade soils will also need to be properly moisture-conditioned prior to the placement of the “non-expansive” material. In a similar fashion, exterior concrete flatwork should be underlain by six (6) inches of “non-expansive” material along with proper moisture conditioning of the subgrade soil.
1. **Scarify the top twelve (12) inches of underlying subgrade soils, moisture-conditioned to at least two (2) percent above optimum moisture content, and compacted to ninety (90) percent relative compaction per ASTM D1557 to reduce its expansion potential.**

B. Prepare subgrades for paved areas, curbs and gutters by plowing or scarifying surface at least twelve (12) inches in one lift below final subgrade elevations and a minimum of two (2) feet beyond edge of pavement unless specified otherwise by the District’s Representative. Uniformly moisture condition to obtain optimum moisture contents. Break clods and condition surface by harrowing or dry rolling. Remove boulders, hard ribs and solid rock. Prepare earth uniform for full depth and width of subgrade.

1. Scarify the top twelve (12) inches of underlying subgrade soils, moisture-conditioned to at least two (2) percent above optimum moisture content, and compacted to ninety (90) percent relative compaction per ASTM D1557 to reduce its expansion potential.

C. Protect utilities from damage during compaction of subgrades and until placement of final pavements or other surface facilities.

D. Obtain the District’s Representative’s approval of subgrades prior to placing pavement.

3.7 **PLACEMENT OF STRUCTURAL FILL**

A. Obtain the District’s Representative’s approval of surface to receive structural fill prior to placement of structural fill material.

B. Place structural fill on prepared subgrade.

C. **Backfill over-excavation with competent on site soils, as determined by the District’s Representative, moisture-conditioned to at least two (2) percent above the optimum moisture content. Compact onsite soils to between ninety (90) and ninety-three (93) percent of the maximum dry density as determined by ASTM Test Method D 1557.**

D. Spread structural fill material placed in horizontal lifts less than eight (8) inches in loose thickness, and compacted to between ninety (90) and ninety-three (93) percent of the maximum dry density.

E. **The uppermost six (6) inches of structural fill underneath exterior slabs and pavement where vehicular traffic is expected shall be compacted to a minimum of ninety-five (95) percent of the maximum dry density.**

F. Place structural fill material to suitable elevations above grade to provide for anticipated settlement and shrinkage.

G. Overbuild fill slopes, as required by the District’s Representative, to obtain required compaction. Remove excess material to lines and grades indicated.

H. Do not drop fill on structures. Do not backfill around, against or upon concrete or masonry structures until structure has attained sufficient strength to withstand loads imposed and the horizontal structural system had been installed.
3.8 AGGREGATE BASE

A. Watering, Spreading and Compacting: Section 26-1.03, of Caltrans Standard Specifications.

3.9 COMPACTION AND TESTING

A. Do not compact by ponding, flooding or jetting.

B. Compact soils at optimum water content. Onsite clayey fill should be uniformly moisture-conditioned to a moisture content of at least two (2) percent above the optimum moisture content, placed in horizontal lifts less than eight (8) inches in loose thickness, and compacted to between ninety (90) and ninety-three (93) percent of the maximum dry density as determined by ASTM Test Method D 1557. Imported granular fill should be uniformly moisture-conditioned to a moisture content to near the optimum moisture content, placed in horizontal lifts less than eight (8) inches in loose thickness, and compacted to at least ninety (90) percent of the maximum dry density.

C. Aerate material if it is too wet. Add water to material if it is too dry. Thoroughly mix lifts before compaction to ensure uniform moisture distribution.

D. Perform compaction using rollers, pneumatic or vibratory compactors or other equipment and mechanical methods approved by the District’s Representative.

E. Compaction requirements:
   1. Compact structural fills less than five (5) feet thick to ninety (90) percent compaction.
   2. Compact structural fill five (5) feet thick or greater to ninety-five (95) percent compaction.
   3. Compact the upper six (6) inches of subgrade soils beneath pavements, curbs and gutters to ninety-five (95) percent compaction. Extend compaction two (2) feet beyond pavement edges unless specified otherwise by the District’s Representative.
   4. Compact the upper six (6) inches of subgrade soils under walks, structures and areas to receive structural fill to ninety (90) percent compaction.

3.10 SOIL STERILIZATION

A. Apply soil sterilant to areas indicated, such as beneath asphalt concrete pavement, brick pavement, concreate pavement and at grade concrete slabs, including sidewalks, curbs and gutters. Also where indicated apply soil sterilant below expansion and control joints and at areas where pipes, ducts or other features penetrate slabs.

B. Apply soil sterilant uniformly and at the rates recommended by the manufacturer.

C. Apply soil sterilant to prepared subgrade, or after installation of aggregate base as recommended by the manufacturer.

3.11 DISPOSAL

A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the
District.

END OF SECTION
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SECTION 31 23 19 - DEWATERING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section describes the requirements for construction dewatering.

1.2 PERFORMANCE REQUIREMENTS

A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water to permit excavation and construction to proceed on dry, stable subgrades.

1. Delegated Design: Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of - excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.

3. Prevent surface water from entering excavations by grading, dikes, or other means.

4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.

5. Remove dewatering system when no longer required for construction.

1.3 RELATED SECTIONS:

A. Section 31 23 00 Excavation and Fill.

B. Division 1- General Requirements

C. Section 01 81 13 – Sustainable Design Requirements

1.4 REGULATORY REQUIREMENTS


B. California Regional Water Quality Control Board
1.5 SUBMITTALS

A. Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, and discharge lines; and means of discharge, control of sediment, and disposal of water. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.

B. Include a written plan for dewatering operations including control procedures to be adopted if dewatering problems arise.

C. Delegated-Design Submittal: For dewatering system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Qualification Data: For qualified Installer.

E. Field quality-control reports.

F. LEED Submittals: Indicate location of manufacturing facility including name, address and distance between manufacturing facility and the project site. Provide manufacturer’s documentation indicating location where the base materials were extracted, mined, quarried, harvested, etc. and the distance between this location and the project site. Also include material costs, excluding cost of installation.

G. LEED Product Data Submittal Form: Submit completed product data form provided by Architect; certified by vendor, installer, subcontractor, and/or manufacturer as appropriate.

   1. Electronic file (.pdf) of LEED Product Data Submittal Form is available from the Architect

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer that has specialized in design of dewatering systems and dewatering work as determined by the authorities having jurisdiction.

B. Regulatory Requirements: Comply with governing EPA and California Regional Water Quality Control Board notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Review methods and procedures related to dewatering with the College including, but not limited to, the following:

   1. Inspection and discussion of condition of site to be dewatered including coordination with temporary erosion control measures and temporary controls and protections.
   2. Geotechnical report.
   3. Proposed site clearing and excavations.
   4. Existing utilities and subsurface conditions.
   5. Coordination for interruption, shutoff, capping, and continuation of utility services.
   6. Construction schedule. Verify availability of Installer’s personnel, equipment, and facilities needed to make progress and avoid delays.
7. Testing and monitoring of dewatering system.

1.7 PROJECT CONDITIONS

A. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer.

B. Make additional test borings and conduct other exploratory operations necessary for dewatering.

C. The geotechnical report is referenced elsewhere in the Project Manual.

D. Survey Work: Engage a land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

E. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

F. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by the College or others unless permitted under Division 1.

PART 2 - PRODUCTS:

2.1 Not Applicable

PART 3 - EXECUTION

3.1 PREPARATION:

A. Protect structures, utilities sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
   1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
   2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

B. Provide temporary grading to facilitate dewatering and control of surface water.

C. Monitor dewatering system continuously and report in a weekly log of dewatering performance.

D. Promptly repair damages to adjacent facilities caused by dewatering to the satisfaction of the Architect and/or College.
E. Protect and maintain temporary erosion and sedimentation controls, which are specified in Section 312500 “Erosion and Sedimentation Control” during dewatering operations.

F. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.

3.2 INSTALLATION:

A. Install dewatering system to ensure minimum interference with roads, streets, walks and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
   1. Space well points or wells at intervals required to provide sufficient dewatering.
   2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.

C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
   1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.

D. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
   1. Maintain piezometric water level a minimum of 48 inches (600 mm) below surface of excavation.

E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

F. Contractor shall make provisions for emergency standby equipment available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the College.
   1. Remove dewatering system from Project site on completion of dewatering.

G. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations. Submit proposed repair plan to Architect for review and approval.

H. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.
3.3 FIELD QUALITY CONTROL

A. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.

3.4 CONSTRUCTION WASTE MANAGEMENT

A. General: Comply with General Contractor's Waste Management Plan in Division 1.

B. To the greatest extent possible, separate reusable and recyclable products from contaminated waste and debris in accordance with the General Contractor's Waste Management Plan. Place recyclable and reusable products in designated containers and protect from moisture and contamination.

END OF SECTION
SECTION 31 50 00 - TEMPORARY EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes temporary excavation support and protection systems.

B. Temporary excavation support performance: Design, furnish, install, monitor, and maintain temporary excavation support and protection system capable of supporting temporary excavation sidewalls and of resisting soil, which will require a back drainage system as to eliminate hydrostatic pressures, and superimposed and construction loads.

1. Delegated Design: Design temporary excavation support and protection system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

2. Prevent surface water from entering temporary excavations by grading, dikes, or other means.

3. Install temporary excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to temporary excavation.


1.2 RELATED SECTIONS

A. Section 31 23 19: Dewatering

1.3 REGULATORY REQUIREMENTS

A. Geotechnical Report: “Geotechnical Engineering Investigation Report, C-4016 New Allied Science Building, Contra Costa College, 2600 Mission Bell Drive, San Pablo, California.” Kleinfelder Project No.: 20181569.001A, Dated: October 17, 2017, including:

1. Addendum Letters No. 1 and No. 2 dated March 2 and March 4, respectfully.

1.4 SUBMITTALS

A. Shop Drawings: For temporary excavation support and protection system.

B. Delegated-Design Submittal: For temporary excavation support and protection system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Other Informational Submittals:

1. Record Drawings: Identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions.

   a. Note locations and capping depth of wells and well points.
1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to temporary excavation support and protection system including, but not limited to, the following:
      a. Geotechnical report.
      b. Existing utilities and subsurface conditions.
      c. Proposed temporary excavations.
      d. Proposed equipment.
      e. Monitoring of temporary excavation support and protection system.
      f. Working area location and stability.
      g. Coordination with waterproofing.
      h. Abandonment or removal of temporary excavation support and protection system.

1.6 PROJECT CONDITIONS

A. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by the College or others unless permitted under Division 1.

B. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer.
   1. Make additional test borings and conduct other exploratory operations necessary for temporary excavation support and protection.
   2. The geotechnical report is referenced elsewhere in the Project Manual.

C. Survey Work: Engage a land surveyor or professional engineer with a California license to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
   1. During installation of temporary excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Architect if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Furnish and install the following as specified herein and required to eliminate potential erosion and sedimentation during construction works.
   1. Structural steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.
2. Steel sheet piling with continuous interlocks: ASTM A 328/A 328M, ASTM A 572/A 572M,
or ASTM A 690/A 690M; with continuous interlocks
3. Wood Lagging: Preservative treated Lumber, mixed hardwood, nominal rough thickness of
   size and strength required for application
4. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.
5. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
6. Tiebacks: Steel bars, ASTM A 722/A 722M.
7. Tiebacks: Steel strand, ASTM A 416/A 416M.

2.2 LEED REQUIREMENTS

A. Provide documentation necessary to satisfy the LEED requirements for Construction Activity
   Pollution Prevention Plan which will be part of the SWPPP.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor to engage surveyor or engineer to survey adjacent existing structures and site
   improvements before and regularly during installation of temporary excavation support and
   protection system.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by
   settlement, lateral movement, undermining, washout, and other hazards that could develop
   during temporary excavation support and protection system operations.
   1. Shore, support, and protect utilities encountered.

C. Install temporary excavation support and protection systems to ensure minimum interference with
   roads, streets, walks, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without
      permission from the College and authorities having jurisdiction. Provide alternate routes
      around closed or obstructed traffic ways if required by authorities having jurisdiction.

D. Locate temporary excavation support and protection systems clear of permanent construction so
   that forming and finishing of concrete surfaces are not impeded.

E. Monitor temporary excavation support and protection systems daily during temporary excavation
   progress and for as long as temporary excavation remains open. Promptly correct bulges,
   breakage, or other evidence of movement to ensure that temporary excavation support and
   protection systems remain stable.

F. Promptly repair damages to adjacent facilities caused by installing temporary excavation support
   and protection systems.
3.2 SOLDIER PILES AND LAGGING

A. Install steel soldier piles before starting temporary excavation. Extend soldier piles below temporary excavation grade level to depths adequate to prevent lateral movement. Space soldier piles at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than tolerances as specified by a qualified professional engineer.

B. Install wood lagging within flanges of soldier piles as temporary excavation proceeds. Trim temporary excavation as required to install lagging. Fill voids behind lagging with soil, and compact.

C. Install wales horizontally at locations indicated on Drawings as prepared by a qualified professional engineer and secure to soldier piles.

3.3 SHEET PILING

A. Before starting temporary excavation, install one-piece sheet piling lengths and tightly interlock to form a continuous barrier. Accurately place the piling, using templates and guide frames unless otherwise recommended in writing by the sheet piling manufacturer. Limit vertical offset of adjacent sheet piling to tolerances as specified by a qualified professional engineer. Accurately align exposed faces of sheet piling to vary not more than tolerances as specified by a qualified professional engineer. Cut tops of sheet piling to uniform elevation at top of temporary excavation.

3.4 BRACING

A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work unless otherwise approved by Architect.

2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and a backdrainage system is in place as to eliminate hydrostatic pressures.

3.5 REMOVAL AND REPAIRS

A. Remove temporary excavation support and protection systems when construction has progressed sufficiently to support temporary excavation and bear soil and a backdrainage system is in place as to eliminate hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.

1. Remove temporary excavation support and protection systems to a minimum depth of 48 inches (1200 mm) below overlaying construction and abandon remainder.

2. Fill voids immediately with approved backfill compacted to density specified in Section 31 23 00 Excavation and Fill.*

3. Repair or replace, as approved by the College, adjacent work damaged or displaced by
removing temporary excavation support and protection systems.

B. Leave temporary excavation support and protection systems permanently in place as directed by the Architect.

3.6 DISPOSAL

A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the College.

3.7 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

A. General: Comply with General Contractor’s Waste Management Plan and Division 1.

B. To the greatest extent possible, separate reusable and recyclable products from contaminated waste and debris in accordance with the General Contractor’s Waste Management Plan. Place recyclable and reusable products in designated containers and protect from moisture and contamination.

END OF SECTION
SECTION 33 41 00 - STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Provide and install all appurtenances as necessary to complete the storm drainage system, as shown on the plans, including piping and joints, flexible joints, manholes, catch basins, drain inlets, and area drains.

1.2 RELATED SECTIONS

A. Section 31 23 33, Utility Trenching and Backfill

1.3 RELATED DOCUMENTS:

A. AASHTO:
   1. M 199: Precast Reinforced Concrete Manhole Sections.

B. ASTM:
   1. A615/A615M: Deformed and Billet-Steel Bars for Concrete Reinforcement.
   2. C 443: Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
   6. D 1785: Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
   10. F 477: Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

C. AWWA:
3. C110: Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm Through 1,219 mm) for Water.

D. Caltrans Standard Specifications
   1. Section 52 Reinforcement
   2. Section 65 Reinforced Concrete Pipe

1.4 REGULATORY REQUIREMENTS:
   A. City, Standard Specifications and Details.
   B. Alameda County Flood Control District, Standard Specifications and Details.

1.5 Definitions
   A. AASHTO: American Association of State Highway and Transportation Officials.
   D. HDPE: High-density polyethylene.
   E. NPS: Nominal pipe size.
   F. PVC: Polyvinyl chloride.
   G. RCP: Reinforced concrete pipe.

1.6 SUBMITTALS
   A. Submittal procedure shall be as outlined in Division 1 – General Requirements.
   B. Product Data Shop Drawings, etc. for the following:
      1. Piping materials and fittings.
      2. Special pipe couplings.
      4. Plastic area drains.
      5. Cleanout plugs or caps.
6. Precast manholes
7. Precast concrete catch basins, inlets, curb inlets, junction structures and area drains, including frames and grates.
8. Precast clean out boxes and box covers.

C. Design Mix Reports and Calculations: For each class of cast in place concrete.

D. Field Test Reports: Indicate and interpret test results for compliance with performance.

1.7 DELIVERY, STORAGE AND HANDLING

A. Do not store plastic structures, pipe and fittings in direct sunlight.

B. Protect pipe, fittings, and seals from dirt and damage.

C. Handle precast concrete pipe, manholes and other precast structures according to manufacturer’s written instructions.

D. Protect imported bedding and backfill material from contamination by other materials.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS FOR GRAVITY FLOW

A. PVC Pipe and Fittings: Pipes 12“ and smaller in diameter shall be SDR 26 PVC conforming to ASTM D3034 using elastomeric gasket joint in a bell and spigot assembly system or as shown on plans. Minimum 2 feet cover, maximum 15 feet cover.
   1. Fittings: Shall conform to ASTM F 1336.

B. Reinforced Concrete Pipe: Pipes greater than 12“ in diameter shall be Class III, Type II Portland Cement conforming to ASTM C76 and C150 or as shown on plans.

C. HDPE Pipe and Fittings: (As alternate to PVC only) pipes can be HDPE (High Density Polyethylene Pipe) DR-11 (160 psi), conforming to ASTM F714 and AASHTO designation M-294.

D. Manholes
   1. General:
      a. Size, shape, configuration, depth, etc. of manhole and frame and cover shall be as indicated.
   2. Portland Cement Concrete and Reinforcing:
      a. Poured-in-Place Portion: Section 03 30 00 – Portland Cement Concrete.
      b. Precast Portion:
         1) Pre-cast Concrete manhole conforming to ASTM C478 and shall be Type II modified cement with a minimum compressive strength of 4,000 psi at 28
days. Iron Castings for manhole covers and frames shall conform to ASTM A48, Class 25

2) ASTM C 478. Rate for AASHTO H20 loading in traffic areas.

3. Frames and Covers: As indicated and in accordance with Caltrans Standard Specification Section 75-1.02.

4. Steps: Manufacture from deformed, ½-inch steel reinforcement rod complying with ASTM A 615/A 615M and encased in polypropylene complying with ASTM D 4101. Include pattern designed to prevent lateral slippage off step.
   a. Acceptable manufacturers include:
      1) Hanson Concrete Products, (Milpitas, CA) (Tel 408-262-1091)
      2) Or approved equal.

E. Concrete Trench Drains
1. Modular system of concrete channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling. Include number of units required to form total length required.

2. Include the following components:
   a. Channel Sections: Interlocking-joint, precast modular units with end caps. Inside width as indicated with deep, rounded bottom, with built in slope or flat invert as indicated and outlets in number, sizes, and locations indicated. Include extension sections necessary for required depth.
   b. Frame and Grate: Ductile iron as indicated. Where drain is located in traffic areas, rate for AASHTO H20 loading.

3. Locking Mechanism: Manufacturer's standard device for securing grates to channel sections.

4. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Project include, but are not limited to, the following:
   a. “Polydrain” by ABT Inc. (Troutman, NC) (Tel 704-528-9806).
   b. “ACO Drain” by ACO Polymer Products Inc. (Chardon, OH) (Tel. 800-543-4764).
   c. Or approved equal.

F. Cleanouts
1. Piping: Same as storm drain line if possible.

2. Top Plug or Cap: Same material as piping if possible. Plug or cap to be secure but removable, threaded or non-threaded.

3. Box Size: As required to provide access and allow easy removal and reinstallation of plug or cap.

4. Box Types:
   b. Traffic Areas: Portland cement concrete box and box cover or steel or cast iron cover, heavy duty, both box and cover to be rated for AASHTO H20 loading.

6. Available Manufacturers: Subject to compliance with requirements, box manufacturers offering products that may be incorporated into the Project include, but are not limited to, the following:
   a. Associated Concrete Products, Inc. (Santa Ana, California) (Tel. 714-557-7470).
   b. Brooks Products Inc. (El Monte, California) (Tel. 818-443-3017).
   c. Christy Concrete Products, Inc. (Fremont, California) (Tel. 800-486-7070).

G. Area drains shall only be used on 6 inch in diameter or smaller storm drain lines.
   1. Area drains shall be polyvinyl chloride.
   2. Grates shall be brass and comply with accessibility requirements.
   3. Rate for AASHTO H20 loading in traffic areas.

H. Catch Basins shall be pre-cast or cast-in-place with 3,000 psi concrete and 1-1/2 inch max aggregate size.

I. Frames, Grates and Covers for Catch Basins: Caltrans Standard Specification Section 75-1.02, 75-1.03 and 75-1.05.
   1. Galvanize steel frames, grates and covers.
   2. Grates and covers shall be non-rocking.
   3. Rate for AASHTO H20 loading in traffic areas.

2.2 Special Pipe Couplings
   1. Gravity Piping: ASTM C 1173. Rubber or elastomeric sleeve and band assembly fabricated to match outside diameters of pipes to be joined.

2.3 Joint sealant for precast structures and manholes
      1. Use to seal around pipes at connections to structures and manholes. Also use to seal joints between precast sections of structures and manholes.
   B. Gaskets: Preformed flexible rubber or plastic gasket.
      2. Plastic Gaskets: Federal Specification SS-S-00210 (GSA-FSS), Type I, Rope Form; or alternate standard which may exist.

PART 3 - EXECUTION

3.1 Gravity PIPE INSTALLATION
   A. Construct all storm drainage utilities to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations.
B. Install pipe, fittings, and appurtenances utilizing best practices, manufacturer’s instructions, and in accordance with Section 6 and 7 of ASTM D 2321 for plastic pipe, Caltrans Standard Specification Section 65-1.07 for reinforced concrete pipe, and chapter 11.3.3 of AWWA M41 for cast iron and ductile iron pipe.

C. Pipe Depth and Trench Configuration: Conform to typical trench section(s) indicated.

D. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Utility Trenching and Backfill

E. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with manufacturer’s recommendations.

F. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Start laying the pipeline at the low end and proceed upstream. Lay bell and spigot pipe with the bell end facing upstream. Lay pipe on a bed prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout its entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.

G. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. Use shorter lengths of pipe than the standard length if necessary to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.

H. Closure: Close open ends of pipes and appurtenance openings at the end of each days work or when work is not in progress.

3.2 SPECIAL PIPE COUPLINGS

A. General: Use where required to join piping and no other appropriate method is specified. Do not use instead of specified joining methods.

B. Installation: Manufacturers instructions.

3.3 CLEANOUT INSTALLATION

A. General: Install as indicated.

3.4 INSTALLATION OF CURB INLETS, CATCH BASINS, DROP INLETS, JUNCTION STRUCTURES, AREA DRAINS, ETC. AND MANHOLES

A. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Utility Trenching and Backfill
3.5 CONCRETE TRENCH DRAIN INSTALLATION

A. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Utility Trenching and Backfill

B. Install: As indicated and in accordance with the manufacturer’s instructions.

C. Valve shall be installed in accordance with manufacturer’s written Installation and Operation Manual and approved submittals.

3.6 TRENCHING AND EXCAVATION

A. Existing PCC or AC Areas: Cut PCC or AC to full depth at a minimum distance of 12-inches beyond the edge of the trench.

B. Excavate by hand or machine. For gravity systems begin excavation at the outlet end and proceed upstream. Excavate sides of the trench parallel and equal distant from the centerline of the pipe. Hand trim excavation. Remove loose matter.

C. Excavation Depth for Bedding: Minimum of 4-inches below bottom of pipe or as otherwise allowed or required by the District’s Representative, except that bedding is not required for nominal pipe diameters of 2-inches or less.

D. Excavation Width at Springline of Pipe:
   1. Up to a nominal pipe diameter of 24-inches: Minimum of twice the outside pipe diameter, or as otherwise allowed or required by the District.
   2. Nominal pipe diameter of 30-inches through 36-inches: Minimum of the outside pipe diameter plus 2-feet, or as otherwise allowed or required by the District.
   3. Nominal pipe diameter of 42-inches through 60-inches: Minimum of the outside pipe diameter plus 3-feet, or as otherwise allowed or required by the District.

E. Over-Excavations: Backfill trenches that have been excavated below bedding design subgrade, with approved bedding material.

F. Comply with the District limitations on the amount of trench that is opened or partially opened at any one time. Do not leave trenches open overnight without the approval of the District.

G. Where forming is required, excavate only as much material as necessary to permit placing and removal of forms.

H. Bottoms of trenches will be subject to testing by District. Correct deficiencies as directed by the
I. Grade bottom of trench to provide uniform thickness of bedding material and to provide uniform bearing and support for pipe along entire length. Remove stones to avoid point bearing.

3.7 BACKFILLING

A. Backfill per Section 31 23 33: Utility Trenching and Backfill.

3.8 CLEANUP

A. Upon completion of utility earthwork all lines, manholes catch basins, inlets, water meter boxes and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the District.

3.9 TESTING

A. General: Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
   1. Do not enclose, cover, or put into service before inspection and approval.
   2. Test completed piping systems according to authorities having jurisdiction.
   3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours advance notice.
   4. Submit separate reports for each test.
   5. Where authorities having jurisdiction do not have published procedures, perform tests in accordance with latest edition of the Uniform Plumbing Code (UPC) Section 1109.0, Testing.
   6. Leaks and loss in test pressure constitute defects that must be repaired.
   7. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

B. Storm Drain Pipe:
   1. Storm drain pipe, shall be hydrostatically joint tested, (air test is not to be used), in the field for water-tightness in accordance with ASTM Standard C 1103.
   2. Perform test after pipe is bedded but prior to any backfill.
   3. Testing may be done by manufacturing pipe with double gasket joints, or by utilizing a joint tester. Contractor shall obtain the District’s Representative’s approval of details of the Contractor’s selected method prior to performing the testing.
   4. Inspect all joints for leakage.
   5. If the pressure holds, or drops less than 1psi in 5 seconds, the joint is acceptable.
   6. After backfill of storm drain, the Contractor shall video inspect the pipeline. The video shall be supplied to the District for review.
3.10 DISPOSAL

A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the District.

3.11 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

A. Construction Waste shall be managed in accordance with provisions of Standard Construction Waste Management and Disposal Practices. Documentation shall be submitted to satisfy the requirements of that section.

END OF SECTION
TABLE 2: TOP OF DEMOLISHED PILE ELEVATION CHART

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NOTES:

1. ENGINEERED FILM SHALL MEET THE MATERIAL AND COMPACTION REQUIREMENTS OUTLINED IN THE SPECIFICATIONS AND GEOTECHNICAL REPORT.

2. backfill during inc. 1 with engineered fill after excavation of piles. see specification section 31.23.00 and geotechnical report for compaction requirements.

3. CONTRACTOR SHALL DEMOLISH PILE TO THE MINIMUM ELEVATION SHOWN IN TABLE 1. DEMOLITION ELEVATIONS AND LOCATIONS SHALL BE FINALIZED AFTER THE PRE-DEMOLITION SURVEY IS COMPLETE.


5. THE PILE CUT-OFF ELEVATIONS SHOWN IN THE TABLE ABOVE FOLLOW THE GEOTECHNICAL RECOMMENDATION TO BE CUT OFF A MINIMUM OF 3 FEET BELOW THE BOTTOM OF FUTURE PROPOSED FOOTINGS, SLABS, AND UNDERGROUND UTILITY LINES.
ROUGH GRADING NOTES

1. EXCAVATION CRANES WILL NOT CROSS ON E肟FUXC XX4C. XX4C, XX4C, XX4C, XX4C.
2. THE EXCAVATION CRANES WILL NOT CROSS ON E肟FUXC XX4C. XX4C, XX4C, XX4C, XX4C.
3. PROGRESSIVE INSTRUCTIONS TO DRILL HOLES CYCLIC XX4C. XX4C, XX4C, XX4C.
4. DRAINAGE TO BE DRAINED CYCLIC XX4C. XX4C, XX4C, XX4C, XX4C.
5. E肟FUXC XX4C. XX4C, XX4C, XX4C, XX4C.

ROUGH GRADING LEGEND

- [Legend for drainage and excavation]
5. STREET LIGHT CONDUIT, SEE NOTE 4