ADDENDUM #1

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

C-608 PE/K SERVICE ROAD RE-PAVING

Contra Costa College
2600 Mission Bell Drive
San Pablo, CA. 94806

Date: 1/26/2023

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 ***1/11/2023.*** 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

Item:

1. **Change:** Bid Opening Date
   BID OPENING DATE/TIME has been extended from January 31, 2023 @ 2:00 PM to FEBRUARY 2, 2023 @ 2:00 PM
2. **Add:** Responses to Requests for Information (RFIs)
3. **Replace: SECTION 00010 TABLE OF CONTENTS**
   Delete the existing Section 00010 Table of Contents, in its entirety, and replace with the attached Section 00010 Table of Contents, in its entirety.
4. **Revise: SECTION 00100 NOTICE INVITING BIDS**
   Revise Section 00100 Notice Inviting Bids as follows:
   Replace "OPENING DATE/TIME: January 31, 2023 @ 2:00 PM" with "OPENING DATE/TIME: **February 2**, 2023 @ 2:00 PM"

5. **Replace: SECTION 00300 BID PROPOSAL FORM**
   Delete the existing SECTION 00300 BID PROPOSAL FORM, in its entirety, and replace with the attached SECTION 00300 BID PROPOSAL FORM, in its entirety.

6. **Replace:** Technical Specifications:

   Delete the following, existing technical specification sections, in their entirety, and replace with the attached technical specification sections, in their entirety:

   SECTION 31 11 00 Clearing and Grubbing
   SECTION 31 23 00 Excavation and Fill
   SECTION 32 05 23 Cement and Concrete for Exterior Improvements
   SECTION 32 11 00 Base Courses
   SECTION 32 12 00 Flexible Paving
   SECTION 32 16 13 Concrete Curbs and Gutters
   SECTION 32 17 23 Pavement Markings
   SECTION 33 05 13 Manhole Grade Adjustment

7. **Add: Technical Specifications:**

   Add the following technical specification sections:

   SECTION 31 23 33 Trenching and Backfilling
   SECTION 33 05 16 Utility Structures
   SECTION 33 40 00 Storm Drainage Utilities

8. **Replace: Drawings**

   Delete the following, existing drawings, in their entirety, and replace with the attached drawings, in their entirety:

   C3.0 DEMOLITION PLAN
   C4.1 SURFACE IMPROVEMENT PLAN
   C4.2 DEMOLITION & IMPROVEMENT PLAN - PR #76
   C5.0 GRADING PLAN

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

Ben M. Cayabyab, Contracts Manager
Contra Costa Community College District
500 Court St., Martinez, CA 94553
Email: bcayabyab@4cd.edu

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

Attachments:
Responses to RFIs (Requests for Information)
SECTION 00010 Table of Contents
SECTION 00300 Bid Proposal Form

ADDENDUM #1

SECTION 31 11 00	Clearing and Grubbing
SECTION 31 23 00	Excavation and Fill
SECTION 31 23 33	Trenching and Backfilling
SECTION 32 05 23	Cement and Concrete for Exterior Improvements
SECTION 32 11 00	Base Courses
SECTION 32 12 00	Flexible Paving
SECTION 32 16 13	Concrete Curbs and Gutters
SECTION 32 17 23	Pavement Markings
SECTION 33 05 13	Manhole Grade Adjustment
SECTION 33 05 16	Utility Structures
SECTION 33 40 00	Storm Drainage Utilities
C3.0	DEMOLITION PLAN
C4.1	SURFACE IMPROVEMENT PLAN
C4.2	DEMOLITION & IMPROVEMENT PLAN - PR #76
C5.0	GRADING PLAN

END OF ADDENDUM #1

REQUEST FOR INFORMATION

C-608 PE/K SERVICE ROAD RE-PAVING

Contra Costa College, 2600 Mission Bell Dr, San Pablo, CA 94806

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1) Question:

DI to be removed and replaced in service road C4.1?

Response:

Two existing SDCBs shall match existing grade but receive H-20 traffic-rated tops. One existing SDDI shall be removed and replaced. See Addendum 1, drawing C3.0, C4.1, and C6.0 for clarification.

2) Question:

Vertical curb call out on drawings in C4.1?

Response:

A vertical curb shall be installed along a portion of the alternative #2 parking perimeter. See Addendum 1, drawing C4.2.

3) Question:

The increased AC or AB section along the building wall to the bottom of the brick line C4.1?

Response:

See Addendum 1, drawing C4.2 for AC elevations along the building wall.

4) Question:

Clear & Grub aren't called out in C3.0 drawings?

Response:

See Addendum 1, drawing C3.0 for clear and grub delineation.

5) Question:

Drainage line from the roof for the down spouts C4.1?

Response:

New storm drain piping and bubble-up structure shall be installed per Addendum 1, drawing C4.2.

6) Question:

There is an existing speed bump on north end of the main drive isle on sheet C-4.1. Are we to install a new speed bump in the same location even though the plants don't call for it?

Response:

Install a new speed bump as shown on the revised plan set. See Addendum 1, drawing C4.1.

7) Question:

There is an existing drain pipe on the west side of the building adjacent to the staircase. It looked to be plugged during the job walk. There were talks about running a pipe beneath the new pavement into the landscape area. Can you confirm what work needs to be done in this location?

Response:

New storm drain piping and bubble-up structure shall be installed per Addendum 1, drawing C4.2.

8) Question:

Note 6 on sheet C4.2 calls for a new vertical curb, however, it isn't called out where the new vertical curb is to be located. Can you clarify if a new curb is required or not and where it is located?

Response:

A vertical curb shall be installed along a portion of the alternative #2 parking perimeter. See Addendum 1, drawing C4.2.;

9) Question:

There is an existing utility box that is above grade in the second new parking stall from the bottom of sheet C-4.2. Should we figure adjusting the grade and re-using the existing box or do we need to figure installing a new one box?

Response:

Rim elevations for existing utility structures shall be raised to proposed surface elevations. For existing structures located within the proposed vehicular roadway, an H-20 traffic-rated top shall be used to replace the existing top of the adjusted structure. See Addendum 1, drawing C4.2 and C6.0.

10) Question:

There are a few catch basins in the middle of the drive isle shown on sheet C-5.0. It was mentioned on the job walk about replacing the existing grates. Can you please confirm what work (if any) is associated with the existing catch basins?

Response:

Two existing SDCBs shall match existing grade but receive H-20 traffic-rated tops. One existing SDDI shall be removed and replaced. See Addendum 1, drawing C3.0, C4.1, and C6.0 for clarification.

SECTION 00010

TABLE OF CONTENTS

SPECIFICATIONS

VOLUME 1

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

See SECTION 00800 SUPPLEMENTARY GENERAL CONDITIONS

VOLUME 2

TECHNICAL SPECIFICATIONS - DIVISION 31 - 33, Provided by Lionakis/BKF

DRAWINGS

C3.0 DEMOLITION PLAN
C4.1 SURFACE IMPROVEMENT PLAN
C4.2 DEMOLITION & IMPROVEMENT PLAN - PR #76
C5.0 GRADING PLAN

END OF SECTION

SECTION 00300
BID PROPOSAL FORM
(INFORMAL BIDS)

Bidder's Name

C-608 PE/K SERVICE ROAD RE-PAVING

Contra Costa College
2600 Mission Bell Dr.
San Pablo, CA 94806

BID DATE: February 2, 2023, 2:00 PM [Adden. 1]

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INSTRUCTIONS TO BIDDERS:

- *Submit your BID Proposal via mail/overnight mail or deliver, in person, to:*
  Contra Costa Community College District
  500 Court Street
  Martinez, CA 94553
  Attn: Ben M. Cayabyab, Contracts Manager
- *Don't forget to include a Bid Bond for 10% of the Bid amount; (copy attached to Bid Proposal is accepted, original by mail to follow); and signed Certification of Site Visit;*
- *Bid results shall be sent to you via email message and posted at the District Website;*

For clarification, please email: ***Ben M. Cayabyab, Contracts Manager,*** **bcayabyab@4cd.edu**

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Attention is directed to Labor Code Section 1725.5 regarding Department of Industrial Relations (DIR) contractor registration process; registration criteria and implementation of DIR registration requirements. Labor Code Section 1771.7 establishes contractor's obligation to submit Certified Payroll (CPR) to the Department of Labor and Standards Enforcement (DLSE) and public works monitoring and enforcement. Labor Code Section 1773.3 requires the District to submit a PWC-100 to DIR for all public works contract awarded effective January 1, 2015.

1. INTRODUCTION
   A. The Bidder proposes to perform the Work for the Contract Sum and within the proposed time, based upon an examination of the Job Site and Specifications.
   B. The Bidder certifies this proposal is submitted in good faith.
   C. The signed copy of the Certification of Visit to the Site shall be attached to the Bid Proposal Form.
   D. The Bidder shall attach a Bid Security for ten percent (10%) of the Bid Amount in the form of Bid Bond, or Certified Check payable to the District.
   E. The District shall award the contract to the lowest responsive and responsible Bidder. The evaluation of the low bid shall be based on the total of Base Bid plus Add Alternates #1 and #2.

   Please Note: PCC 20651 (b); In the event, the successful bidder fails to provide the required Payment and Performance bonds, the Bid Security shall be forfeited in favor of the District and Contractor shall not be entitled for contract award.

2. BID AMOUNT

For labor, materials, insurances, bonds, fixtures, equipment, tools, transportation, services, sales taxes and other costs necessary to complete the public project in accordance with Contract Drawings and Specifications, for a stipulated Contract Sum in the amount of:

A. Quote for the BASE BID Scope of Work:

_____ Dollars **$** _____

(Write amount of Base Bid)

B. ADD ALTERNATES:

B1) **ADD ALTERNATE 1**: Add parking along the east side of service road. See Drawing C4.2

ADD: _____ Dollars **$** _____

(Write amount of ALTERNATE 1 Bid)

B2) **ADD ALTERNATE 2**: Add parking along the west side of service road. See Drawing C4.2

ADD: _____ Dollars **$** _____

(Write amount of ALTERNATE 2 Bid)

3. ADDENDUM (if applicable): **#1** Received Date: _____; **#2** Received Date: _____;

4. SUBCONTRACTORS LIST (If Any)

Attention is directed to Section 4100 through 4113 of the Public Contract Code concerning Subcontractors, with emphasis on Section 4104, known as the "Subletting and Subcontracting Fair Practices Act, effective July 1, 2014.

	Type of Work	Subcontractor's Name	Address/Phone	Business License # & DIR Registration #
(1)				
(2)				
(3)				

4. COMPLETION TIME

A. For establishing the Date of Substantial Completion, the contract time shall be ***42 calendar days*** after date of Notice to Proceed.

B. Final Completion shall be **15 calendar days** after the date of Substantial Completion.

C. Prior to the Notice to Proceed issued by the District, the Contractor shall provide a CPM construction schedule, prepared in Microsoft Project format, utilizing the entire time allowed to complete the project. Schedule shall be subject to District's approval.

5. ACCEPTANCE AND AWARD

The District reserves the right to waive minor irregularities or reject all bids; or negotiate changes before or after execution of the Contract. This Bid shall remain open and shall not be withdrawn for a period of 10 days after Bid Opening date.

If written notice of acceptance of this Bid is mailed or delivered to the Bidder within 10 days after the date set for the receipt of this Bid, or other time before it is withdrawn, the Bidder shall execute and deliver to the District a Contract prepared by District with the required Surety Bonds and Certificates of Insurance, within 10 days after personal delivery or deposit in the mail of the notification of acceptance.

Notice of acceptance or request for additional information may be addressed to the Bidder at the address provided.

The undersigned hereby certifies under penalty of perjury under the laws of the State of California that all the information submitted by the bidder in connection with this proposal and all the representations herein made are true and correct.

_____ CSLB License No.: _____ Exp: _____
Firm Name

_____ DIR Registration No.: _____
Address

_____ Phone: _____

_____ Email: _____

_____
Authorized Signature Print Name Date

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 311100

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SUMMARY

A. Clearing vegetation, debris, trash and other materials within limits indicated.

B. Grubbing of vegetation within limits indicated.

1.2 RELATED DOCUMENTS

A. Caltrans Standard Specifications.

1. Section 16, Clearing and Grubbing.

B. California Building Code: Chapter 33 – Site Work, Demolition and Construction.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 PREPARATION

A. Locate and clearly flag vegetation to remain or to be relocated.

3.2 RESTORATION

A. Repair or replace vegetation indicated to remain that is damaged by construction operations, as directed by the Owner.

B. Employ a qualified arborist, licensed in jurisdiction where the Project is located, to submit details of proposed repairs and to repair damage to shrubs.

3.3 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

B. Remove trash, debris, logs, concrete, masonry and other waste materials.

C. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

D. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18-inches below subgrade.

E. Use only hand methods for grubbing within drip line of remaining trees.

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 312300

EXCAVATION AND FILL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Excavation and/or embankment from existing ground to subgrade, including soil sterilant, for roadways, driveways, parking areas, walks, paths, or trails and any other site improvements called for on the Plans.

1.2 SECTION EXCLUDES

A. Not applicable.

1.3 RELATED SECTIONS

A. Not applicable.

1.4 RELATED DOCUMENTS

A. Not applicable.

B. ASTM:

1. D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
2. D 1586, Method for Penetration Tests and Split-Barrel Sampling of Soils.
3. D 2487, Classification of Soils for Engineering Purposes.
4. D 3740, Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
5. D 4318. Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
6. E 329, Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
7. E 548, Guide for General Criteria Used for Evaluating Laboratory Competence.

C. California Code of Regulation Title 24, Part 2, California Building Code:

1. Chapter 11B – Accessibility to Public Buildings.
2. Chapter 33 – Site Work, Demolition and Construction.

D. Caltrans Standard Specifications:

1. Section 17, Watering.
2. Section 19, Earthwork.

E. 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 Geotechnical Consultant.
2. Unauthorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions without authorization by the Geotechnical Consultant. Unauthorized excavation shall be without additional compensation.

C. Geotechnical Testing Agency: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.

D. Structural Backfill: Soil materials approved by the Geotechnical Consultant and used to fill excavations resulting from removal of existing below grade facilities, including trees.

E. Structural Fill: Soil materials approved by the Geotechnical Consultant and used to raise existing grades.

F. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material ¾-cubic yards or more in volume that, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.

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

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

I. Unsuitable Material: Any soil material that is not suitable for a specific use on the Project.

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

1.6 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

B. Submit material certificates signed by the material producer and the Contractor, certifying that 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 Geotechnical Report and meet the approval of the Geotechnical Consultant.

B. Conform all work to the appropriate portion(s) of the California Code of Regulations, Title 24 and Caltrans Standard Specifications, Sections 17 and 19.

C. 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.

D. Perform excavation, filling, compaction and related earthwork under the observation of the Geotechnical Consultant. Materials placed without approval of the Geotechnical Consultant will be presumed to be defective and, at the discretion of the Geotechnical Consultant, shall

be removed and replaced at no cost to the Owner. Notify the Geotechnical Consultant at least 24-hours prior to commencement of earthwork and at least 48 hours prior to testing.

E. The Geotechnical Consultant 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 Geotechnical Consultant, does not meet the requirements of these Technical Specifications and the Geotechnical Report.

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.

G. Finish soil grade tolerance at completion of grading:

1. Building and paved areas: +0.05
2. Other areas: ±0.10 feet.

1.8 PROJECT CONDITIONS

A. Promptly notify the Owner of surface or subsurface conditions differing from those disclosed in the Geotechnical Report. First notify the Owner verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents and disclosed in the Geotechnical Report will be allowed unless the Contractor has notified the Owner in writing of differing conditions prior to the Contractor starting work on affected items.

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 Owner.

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 Geotechnical Consultant.

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, and 90% by weight shall pass the 1" sieve and with an organic content less than 3.0 percent by weight.

D. Imported Structural Fill and Structural Backfill: Conform to the requirements of on-site structural fill. Material shall also be a non-expansive and predominantly granular soil or soil-rock mixture with plasticity index of 15 or less in accordance with ASTM D 4318 and an R-Value of 25 or greater.

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 CONTROL OF WATER AND DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the site and surrounding area. Provide dewatering equipment necessary to drain and keep excavations and site free from water.

B. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.

C. Obtain the Geotechnical Consultant's approval for proposed control of water and dewatering methods.

D. Protect subgrades from softening, undermining, washout and damage by rain or water accumulation.

E. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations.

F. Maintain dewatering system in place until dewatering is no longer required.

3.3 WET WEATHER CONDITIONS

A. Do not prepare subgrade, place or compact soil materials if above optimum moisture content.

B. If the Geotechnical Consultant allows work to continue during wet weather conditions, conform to supplemental recommendations provided by the Geotechnical Consultant.

3.4 BRACING AND SHORING

A. Conform to California and Federal OSHA requirements.

B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.

C. Be solely responsible for all bracing and shoring and, if requested by the Owner, submit details and calculations to the Owner. The Owner may forward the submittal to the Geotechnical Consultant, the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the Owner.

D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

3.5 EXCAVATION

A. Excavate earth and rock to lines and grades shown on drawings 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.

3.6 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 Geotechnical Consultant.

B. Compensation for increased removal widths and depths that are not required by the Geotechnical Consultant will not be considered, except when such increase is necessary for protection of life and property as determined by and approved by the Owner.

C. The Geotechnical Consultant will provide written approval for each excavation prior to placement of fill. Allow adequate time after excavation and before filling for the Geotechnical Consultant’s review and written approval and, if necessary, time for the Owner to conduct as built survey prior to placing fill. Basis for calculating the quantity of material excavated or placed may be the difference between the grading shown on the Plan and an as built survey of the grading.

3.7 GRADING

A. Uniformly grade the Project to the elevations shown on plans.

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.

3.8 SUBGRADE PREPARATION

A. Install underground utilities and service connections prior to final preparation of subgrade and placement of base materials for final surface facilities. Extend services so that final surface facilities are not disturbed when service connections are made.

B. Prepare subgrades under paved areas, curbs, gutters, walks, structures, other surface facilities and areas to receive structural fill.

C. Prepare subgrades for paved areas, curbs and gutters by plowing or scarifying surface at least 6 inches below final subgrade elevations and 5-feet beyond edge of pavement unless specified otherwise by the Geotechnical Consultant. 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.

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

E. Obtain the Geotechnical Consultant's approval of subgrades prior to placing pavement.

3.9 PLACEMENT OF STRUCTURAL FILL

A. Obtain the Geotechnical Consultant's approval of surface to receive structural fill prior to placement of structural fill material.

B. Place structural fill on prepared subgrade.

C. Spread structural fill material in uniform lifts not more than 8-inches in un-compacted thickness and compact.

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

E. Overbuild fill slopes, as required by the Geotechnical Consultant, to obtain required compaction. Remove excess material to lines and grades indicated.

F. 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.

3.10 KEYWAYS AND BENCHES

A. Provide keyways as indicated for fill slopes steeper than 6 horizontal to 1 vertical. Extend keyway 5-feet minimum into competent, undisturbed soil or 3-feet minimum into competent, undisturbed rock as directed by the Geotechnical Consultant.

B. Place subsurface drains in bottom of keyway in conformance with Section 334600 – Subdrainage.

C. Bench subgrade as indicated above toe of fill.

D. Place subsurface drains at benches every 20 vertical feet or as directed by the Geotechnical Consultant.

3.11 LOT FINISH GRADING

A. Blade finish lots to lines and grades indicated.

3.12 COMPACTION AND TESTING

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

B. Compact soils at optimum water content. 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.

C. Perform compaction using rollers, pneumatic or vibratory compactors or other equipment and mechanical methods approved by the Geotechnical Consultant.

D. Compaction requirements:

1. Compact structural fills less than 5-feet thick to 90 percent compaction.
2. Compact structural fill 5-feet thick or greater to 95 percent compaction.
3. Compact the upper 6 inches of subgrade soils beneath pavements, curbs and gutters to 95 percent compaction. Extend compaction 5-feet beyond pavement edges unless specified otherwise by the Geotechnical Consultant.
4. Compact the upper 6-inches of subgrade soils under walks, structures and areas to receive structural fill to 90 percent compaction.

3.13 DISPOSAL

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

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Excavation, bedding, and backfill for underground storm drain, sanitary sewer, and water piping and associated structures.

1.2 SECTION EXCLUDES

A. Drainage fill material and placement around subdrains.

B. Trenching and backfill for other utilities such as underground HVAC piping, electrical conduit, telephone conduit, gas piping, cable TV conduit, etc.

1.3 RELATED SECTIONS

A. Section 31 23 00 – Excavation and Fill.

B. Not applicable.

1.4 RELATED DOCUMENTS

A. Not applicable.

B. ASTM:

1. C 33, Specification for Concrete Aggregates.
2. C 150, Specification for Portland Cement.
3. C 260, Specification for Air-Entraining Admixtures for Concrete.
4. C 618, Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
5. D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
6. D 2321, Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
7. D 2487, Classification of Soils for Engineering Purposes.
8. D 3740, Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
9. E 329, Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
10. E 548, Guide for General Criteria Used for Evaluating Laboratory Competence.

C. California Code of Regulation Title 24, Part 2, California Building Code:

1. Chapter 11B – Accessibility to Public Buildings.

2. Chapter 33 – Site Work, Demolition and Construction.

D. Caltrans Standard Specifications:

1. Section 19, Earthwork.
2. Section 26, Aggregate Bases.
3. Section 68, Subsurface Drains.
4. Section 96, Engineering Fabrics.

E. CAL/OSHA, Title 8.

1.5 DEFINITIONS

A. AC: Asphalt Concrete.
B. ASTM: American Society for Testing and Materials.
C. Bedding: Material from bottom of trench to bottom of pipe.
D. CDF: Controlled Density Fill.
E. DIP: Ductile Iron Pipe.
F. Initial Backfill: Material from bottom of pipe to 12-inches above top of pipe.
G. PCC: Portland Cement Concrete.
H. RCP: Reinforced Concrete Pipe.
I. Springline of Pipe: Imaginary line on surface of pipe at a vertical distance of ½ the outside diameter measured from the top or bottom of the pipe.
J. Subsequent Backfill: Material from 12-inches above top of pipe to subgrade of surface material or subgrade of surface facility or to finish grade.
K. Trench Excavation: Removal of material encountered above subgrade elevations and within horizontal trench dimensions.

1. Authorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions as shown on plans or authorized by the Geotechnical Consultant.
2. Unauthorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions without authorization by the Geotechnical Consultant. Unauthorized excavation shall be without additional compensation.

L. Utility Structures:

1. Storm drainage manholes, catch basins, drop inlets, curb inlets, vaults, etc.
2. Sanitary sewer manholes, vaults, etc.
3. Water vaults, etc.

1.6 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

B. Product Data:

1. Grading and quality characteristics showing compliance with requirements for the Work.
2. Certify that material meets requirements of the Project.

C. Samples:

1. If required by the Geotechnical Consultant, provide 40-pound samples of all imported trench bedding and backfill material sealed in airtight containers, tagged with source locations and suppliers of each proposed material. Do not import materials to Project without written approval of the Geotechnical Consultant.
2. Provide materials from same source throughout work. Change of source requires approval of the Geotechnical Consultant and the Owner.

1.7 QUALITY ASSURANCE

A. Conform all work and materials to the recommendations or requirements of the Geotechnical Report and meet the approval of the Geotechnical Consultant.

B. Conform all work to the appropriate portion(s) of the Caltrans Standard Specifications, Section 19.

C. 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.

D. The Geotechnical Consultant will perform observations and tests required to enable him to form an opinion of the acceptability of the trench backfill. Correct the trench backfill that, in the opinion of the Geotechnical Consultant, does not meet the requirements of these Technical Specifications and the Geotechnical Report.

E. Conform work to the requirements of the California Building Code.

1. Section 1806A.11 – Pipe and Trenches.

1.8 PROJECT CONDITIONS

A. Promptly notify the Owner of surface or subsurface conditions differing from those disclosed in the Geotechnical Report. First notify the Owner verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents and disclosed in the Geotechnical Report will be allowed unless Contractor has notified the Owner in writing of differing conditions prior to contractor starting work on affected items.

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

C. Stockpile on-site and imported backfill material temporarily in an orderly and safe manner.

D. Provide dust and noise control in conformance with local requirements and project storm water pollution prevention plan.

2.1 PIPE BEDDING AND INITIAL BACKFILL

A. ASTM D 2321, Class IA, IB or II.

1. Clean and free of clay, silt or organic matter.

B. Permeable Material: Conform to Section 68-2.02F of Caltrans Standard Specifications, Class 1, Type A or Class 2.

C. Class 2 Aggregate Base: Conform to Section 26 of Caltrans Standard Specifications, ¾-inch maximum.

D. Sand: Conform to Section 19-3.02E(2) of Caltrans Standard Specifications.

2.2 WARNING TAPE

A. Not applicable.

2.3 SUBSEQUENT BACKFILL

A. Conform to on-site or imported structural backfill in Section 31 23 00 – Excavation and Fill.

2.4 CONTROLLED DENSITY FILL (CDF) (IN TRENCHES)

A. Provide non-structural CDF, from bottom of trench to finish subgrade of subbase or base material, that can be excavated by hand and produce unconfined compressive 28-day strengths from 50-psi to a maximum of 150-psi. Provide aggregate no larger than 3/8-inch top size. The 3/8-inch aggregate shall not comprise more than 30% of the total aggregate content.

B. Cement: Conform to the standards as set forth in ASTM C-150, Type II Cement.

C. Fly Ash: Conform to the standards as set forth in ASTM C-618, for Class F pozzolan. Do not inhibit the entrainment of air with the fly ash.

D. Air Entraining Agent: Conform to the standards as set forth in ASTM C-260.

E. Aggregates need not meet the standards as set forth in ASTM C-33. Any aggregate, producing performances characteristics described herein will be accepted for consideration. The amount of material passing a #200 sieve shall not exceed 12% and no plastic fines shall be present.

F. Provide CDF that is a mixture of cement, Class F pozzolan, aggregate, air entraining agent and water. CDF shall be batched by a ready mixed concrete plant and delivered to the job site by means of transit mixing trucks.

G. The Contractor shall determine the actual mix proportions of the controlled density fill to meet job site conditions, minimum and maximum strengths, and unit weight. Entrained air content shall be a minimum of 4.0%. The actual entrained air content shall be established for

each job with the materials and aggregates to be used to meet the placing and unit weight requirements. Entrained air content may be as high as 20% for fluidity requirements.

H. Mix design shall meet the Geotechnical Consultant's approval.

2.5 CONCRETE STRUCTURE BEDDING AND BACKFILL

A. Precast Structures: Same materials to the same heights as specified for pipe bedding and backfill, or other material approved by the Geotechnical Consultant.

B. Poured-in-Place Structures:

1. Bedding: Bedding shall meet the approval of the Geotechnical Consultant. In general, bedding is not required, pour bases against undisturbed native earth in cut areas and against engineered fill compacted to 90% relative compaction in embankment areas.
2. Side Backfill: On-site or imported structural fill meeting the requirements given in Section 31 23 00 – Excavation and Fill.

2.6 FILTER FABRIC

A. Filter Fabric:

1. Filter Fabric: Section 96-1.02B of Caltrans Standard Specifications.
2. Mirafi 140N (Mirafi Inc., Charlotte, NC) (Tel. 800-438-1855) or equal.

3.1 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 Geotechnical Consultant, 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 Geotechnical Consultant.
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 Geotechnical Consultant.
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 Geotechnical Consultant.

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

F. Comply with the Owner's 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 Owner.

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 Geotechnical Consultant. Correct deficiencies as directed by the Geotechnical Consultant.

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.

3.2 CONTROL OF WATER AND DEWATERING

A. Be solely responsible for dewatering trenches and excavations and subsequent control of ground and surface water. Provide and maintain such pumps or other equipment as may be necessary to control ground water and seepage to the satisfaction of the Geotechnical Consultant and the Owner until backfilling is completed.

B. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.

C. Obtain the Geotechnical Consultant's approval for proposed control of water and dewatering methods.

D. Reroute surface water runoff away from open trenches and excavations. Do not allow water to accumulate in trenches and excavations.

E. Maintain dewatering system in place until dewatering is no longer required.

3.3 BRACING AND SHORING

A. Conform to California and Federal OSHA requirements.

B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the pipes and appurtenances being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.

C. Be solely responsible for all bracing and shoring and, if requested by the Owner, submit details and calculations to the Owner. The Owner may forward the submittal to the Geotechnical Consultant, the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations in trench section or around structures shall precede a response to the submittal by the Owner.

D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the line, grade, or backfill compaction or operation of the utility being installed or adjacent utilities and facilities.

3.4 PIPE BEDDING

A. Obtain approval of bedding material from the Geotechnical Consultant.

B. Accurately shape bedding material to the line and grade called for on the Plans. Carefully place and compact bedding material to the elevation of the bottom of the pipe in layers not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction unless specified otherwise on the Plans or by the Geotechnical Consultant. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Consultant. Jetting or ponding of bedding material will not be permitted.

C. Upon completion of bedding operations, and prior to the installation of pipe, notify the Geotechnical Consultant, who will inspect the bedding layer. Do not commence pipe laying until the Geotechnical Consultant has approved the bedding.

3.5 WARNING TAPE

A. Not applicable.

3.6 BACKFILLING

A. Obtain approval of backfill material from Geotechnical Consultant.

B. Bring initial backfill up simultaneously on both sides of the pipe, so as to prevent any displacement of the pipe from its true alignment. Carefully place and compact initial backfill material to an elevation of 12-inches above the top of the pipe in layers not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction unless specified otherwise on the Plans or by the Geotechnical Consultant. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Consultant. Jetting or ponding of initial backfill material will not be permitted.

C. Bring subsequent backfill to subgrade or finish grade as indicated. Carefully place and compact subsequent backfill material to the proper elevation in layers not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction, except that the upper 36-inches in areas subject to vehicular traffic shall be compacted to at least 95% relative compaction, unless specified otherwise on the Plans or by the Geotechnical Consultant. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Consultant. Jetting or ponding of subsequent backfill material will not be permitted.

D. Do not use compaction equipment or methods that produce horizontal or vertical earth pressures that may cause excessive pipe displacement or damage the pipe.

E. Utility backfill shall be inspected and tested by the Geotechnical Consultant during placement. Cooperate with the Geotechnical Consultant and provide working space for

such tests in operations. Backfill not compacted in accordance with these specifications shall be re-compacted or removed as necessary and replaced to meet the specified requirements, to the satisfaction of the Geotechnical Consultant and the Owner prior to proceeding with the Project.

3.7 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 Owner.

END OF SECTION 312333

SECTION 320523

CEMENT AND CONCRETE FOR EXTERIOR IMPROVEMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials for portland cement concrete.

B. Aggregate and aggregate grading for portland cement concrete.

C. Water for portland cement concrete.

D. Admixtures for portland cement concrete.

E. Proportioning for portland cement concrete.

F. Mixing and transporting portland cement concrete.

G. Formwork for cast in place portland cement concrete.

H. Embedded materials for portland cement concrete.

I. Steel reinforcement for portland cement concrete.

J. Placing and finishing portland cement concrete.

K. Curing portland cement concrete.

L. Protecting portland cement concrete.

1.2 RELATED SECTIONS

A. Section 312300, Excavation and Fill.

B. Section 321613, Concrete Curbs and Gutters.

1.3 RELATED DOCUMENTS

A. ASTM Standards

1. A 82, Cold Drawn Steel Wire for Concrete Reinforcement.
2. A 185, Steel Welded Wire Fabric, Plain for Concrete Reinforcement.
3. A 615, Deformed and Plain Billet Steel Bars, for Concrete Reinforcement.
4. C 94, Specification for Ready-mixed Concrete.
5. C 114, Method for Chemical Analysis of Hydraulic Cement.
6. C 150. Portland Cement.
7. C 618, Fly Ash and Raw or Calcined Natural Pozzolan for use as Natural Admixture in Portland Cement.
8. C 1751, Preformed Expansion Joint Fillers for Concrete. Paving and Structural Construction (Non-extruded and Resilient Bituminous Types).

B. Caltrans Standard Specifications:

1. Section 51: Concrete Structures.
2. Section 73: Concrete Curbs and Sidewalks.
3. Section 90: Portland Cement Concrete.

C. California Building Code:

1. Chapter 11B – Accessibility To Public Buildings.
2. Chapter 19A – Concrete.
3. Chapter 33 – Site Work, Demolition and Construction.
4. Section 1133B – General Accessibility for Entrances, Exits and Paths of Travel.

1.4 DEFINITIONS

A. ASTM: American Society for Testing and Materials.

1.5 SUBMITTALS

1.6 Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

A. Design Mixes: Have all concrete mixes designed by a testing laboratory and approved by the Consulting Engineer. Conform all mixes to the applicable building code requirement, regardless of other minimum requirements listed herein or on the drawings. Submit mix designs for review before use. Show proportions and specific gravities of cement, fine and coarse aggregate, and water and gradation of combined aggregates.

B. Reinforcing Steel Shop-Drawings

1.7 QUALITY ASSURANCE

A. Concrete shall be subject to quality assurance in accordance with Section 90 of the Standard Specifications.

1. Slump tests: Have available, at job site, equipment required to perform slump tests. Make one slump test for each cylinder sample, from same concrete batch. Allowable maximum slump shall be 4 inches for walls and 3 inches for slabs on grade and other work.

B. Certifications:

1. Provide Owner's Representative at the time of delivery with certificates of compliance signed by both Contractor and Supplier containing the following statements:
2. Materials contained comply with the requirements of the Contract Documents in all respects.
3. Proportions and mixing comply with the design mix approved by the Consulting Engineer. Design mix shall have been field tested in accordance with the herein requirements of the Caltrans Standard Specifications and produces the required compressive strength under like conditions.
4. Statement of type and amount of any admixtures.

5. Provide Owner's Representative, at time of delivery, with certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.

C. Conform to the applicable provisions of Section 51, 73 and 90 of the Caltrans Standard Specification and these Technical Specifications.

1. Conform construction of portland cement concrete surface improvements (including curbs, gutters, medians, valley gutters, walks) to the requirements of Section 73 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
2. Construct "V" ditches in accordance with Section 72-4 of the Standard Specifications; except that finishing shall be in accordance with Standard Specification Section 73 instead of 53, or as otherwise required in these Technical Specifications or shown on the Plans.
3. Conform other construction of portland cement concrete items to the requirements of Section 51 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.

D. Conform to the requirements of the California Building Code section 1929A.2 for testing of reinforcing bars.

1.8 DESIGNATION

A. General: Whenever the 28-day compressive strength is designated herein or on the plans is greater than 3,600 psi, the concrete shall considered to be designated by compressive strength. The 28-day compressive strength shown herein or on the plans which are 3,600 psi or less are shown for design information only and are not considered a requirement for acceptance of the concrete. Whenever the concrete is designated by class or as minor concrete herein or on the plans, the concrete shall contain the cement per cubic meter shown in section 90-1.01 of the Caltrans Standard Specifications.

B. Unless specified otherwise herein or on the Plans, Portland Cement Concrete for this Project shall be Class "2" as specified in Section 90-1.01 of the Caltrans Standard Specifications.

PART 2 PRODUCTS

2.1 GENERAL

A. For products to be installed within the jurisdiction of a local, state or federal agency, product(s) shall conform to the agency's standard specifications.

2.2 PORTLAND CEMENT

A. General: Type V or type II (modified) cement conforming to the requirements of ASTM C 150, with the following modifications:

1. Cement shall not contain more than 0.60% by weight of alkalies, calculated as the percentage of Na2O plus 0.658 times the percentage of K2O when determined by either 4 intensity flame photometry or by the atomic absorption method. The instrument and procedure used shall be qualified as to precision and accuracy in accordance with the requirements of ASTM C 114.

2. The autoclave expansion shall not exceed 0.50%.
3. Mortar containing the Portland Cement to be used and the sand, when tested in accordance with Test Method No. Calif. 527, shall not expand in water more than 0.010% and shall have an air content less than .048%.
4. Allowable tri-calcium Aluminate (C3A) by weight shall not exceed 5%. Allowable tetracalcium alumino ferrite plus twice the tricalcium aluminate (C4AF+2C3A) by weight shall not exceed 25%. The sulfate expansion test (ASTM C 452) may be used in lieu of the above chemical requirements, provided the sulfate expansion does not exceed 0.040% at 14 days (max.).
5. Contractor may substitute pozzolan for Portland Cement in amounts up to 15% of the required mix unless high early strength concrete is specified. Pozzolan shall consist of Class F Fly Ash meeting the requirements of ASTM C 618.

2.3 AGGREGATE AND AGGREGATE GRADING

A. General: Conform to the requirements of Section 90-1.02C of the Caltrans Standard Specifications.

B. Aggregate Size and Gradation: Conform to the requirements of section 90-1.02C of the Caltrans Standard Specifications for 25-mm (1-inch) maximum combined aggregate.

2.4 WATER

A. General: Conform to the requirements of section 90-1.02D of the Caltrans Standard Specifications, for mixing and curing portland cement concrete and for washing aggregates.

2.5 CLASSIFICATION OF PORTLAND CEMENT CONCRETE

A. Concrete for the following items shall be designated by the following classes per Section 90-1.01 of the Caltrans Standard Specifications:

1. Vehicular Pavement: Class 2.
2. Curbs, Gutters, and Sidewalks: Minor Concrete per Section 90-2 of the Caltrans Standard Specifications.
3. Cast in place Concrete Pipe: The concrete shall consist of a minimum of 564 pounds of Portland cement per cubic yard of concrete.
4. Thrust Blocks: The concrete shall have a minimum compressive strength of 3,000 psi.
5. Sign and Fence Footings: The concrete shall consist of a minimum of 376 pounds of Portland cement per cubic yard of concrete.
6. Water, Storm, and Sanitary Structures: The concrete shall consist of a minimum of 564 pounds of Portland cement per cubic yard of concrete.

2.6 EXPANSION JOINT MATERIAL

A. Material for expansion joints in portland cement concrete improvements shall be premolded expansion joint fillers conforming to the requirements of ASTM Designation D 1751. Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site. Unless noted otherwise herein or on the Plans expansion joint thickness shall be as follows:

1. Curbs, Curb Ramps, Sidewalks, Driveways and Gutter Depressions: 1/4-inch.
2. Concrete Slope Protection, Gutter Lining, Ditch Lining and Channel Lining: 1/2-inch.
3. Structures: As indicated.

2.7 REINFORCEMENT AND DOWELS

A. Bar reinforcement for concrete improvements shall be deformed steel bars of the size or sizes called for on the plans conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Size and shape for bar reinforcement shall conform to the details shown or called for on the Plans. Substitution of wire mesh reinforcement for reinforcing bars will not be allowed.

B. Slip dowels, where noted or called for on the plans or detail drawings shall be smooth billet-steel bars as designated and conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Ends of bars inserted in new work shall be covered with a cardboard tube sealed with cork; no grease or oil shall be used.

C. Mesh for reinforcement for concrete improvements shall be cold drawn steel wire mesh of the size and spacing called for on the plans conforming to the requirements of ASTM Designation A 82 for the material and ASTM Designation A 185 for the mesh. Size and extent of mesh reinforcement shall conform to the details shown or called for on the plans.

D. Tie wire for reinforcement shall be eighteen (18) gauge or heavier, black, annealed conforming to the requirements of ASTM Designation A 82.

E. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site.

2.8 ACCESSORY MATERIALS

A. Conform water stops and other items required to be embedded in of Portland Cement Concrete structures to the applicable requirements of Section 51 of the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans or detail drawings.

B. Curing Compounds:

1. Regular Portland Cement Concrete: "Non-Pigmented Curing Compound - chlorinated Rubber Base-Clear" conforming to the requirements contained in Section 90-1.02J, of the Caltrans Standard Specifications.

2.9 FORMS

A. Conform to the requirements of Section 51-1.03C(2) of the Caltrans Standard Specifications.

2.10 PRECAST CONCRETE STRUCTURES

A. Conform to the following Sections of Caltrans Standard Specifications:

1. 51-1.02, Minor Structures.
2. 70-1.02C, Flared End Sections.
3. 70-1.02H, Precast Concrete Structures.

2.11 PORTLAND CEMENT CONCRETE VEHICLUAR PAVEMENT

A. Not applicable.

PART 3 EXECUTION

3.1 STRUCTURAL EXCAVATION

A. Structural excavation may be either by hand, or by machine and shall be neat to the line and dimension shown or called for on the plans. Excavation shall be sufficient width to provide adequate space for working therein, and comply with CAL-OSHA requirements.

B. Where an excavation has been constructed below the design grade, refill the excavation to the bottom of the excavation grade with approved material and compact in place to 95% of the maximum dry density.

C. Remove surplus excavation material remaining upon completion of the work from the job site, or condition it to optimum moisture content and compact it as fill or backfill on the site, if the material is approved by the Geotechnical Consultant.

3.2 SOIL STERILANT

A. Not applicable.

3.3 BRACING AND SHORING

A. Conform to California and Federal OSHA requirements.

B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.

C. Be solely responsible for all bracing and shoring and, if requested by the Owner's Representative, submit details and calculations to the Owner's Representative. The Owner's Representative may forward the submittal to the Geotechnical Consultant, the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the Owner's Representative.

D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

3.4 PLACING CONCRETE FORMS

A. Form concrete improvements with a smooth and true upper edge. Side of the form with a smooth finish shall be placed next to concrete. Construct forms rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.

B. Thoroughly clean all forms prior to placement and coat forms with an approved form oil in sufficient quantity to prevent adherence of concrete prior to placing concrete.

C. Carefully set forms to the alignment and grade established and conform to the required dimensions. Rigidly hold forms in place by stakes set at satisfactory intervals. Provide sufficient clamps, spreaders and braces to insure the rigidity of the forms.

D. Provide forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs that are equal to the full depth of the concrete as shown, noted or called for on the Plans. On curves and curb returns provide composite forms made from benders or thin planks of sufficient ply to ensure rigidity of the form.

3.5 PLACING STEEL REINFORCEMENT

A. Bars shall be free of mortar, oil, dirt, excessive mill scale and scabby rust and other coatings of any character that would destroy or reduce the bond. All bending shall be done cold, to the shapes shown on the plans. The length of lapped splices shall be as follows:

1. Reinforcing bars No. 8, or smaller, shall be lapped at least 45 bar diameters of the smaller bar joined, and reinforced bars Nos. 9, 10, and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the plans.
2. Splice locations shall be made as indicated on the plans.

B. Accurately place reinforcement as shown on the plans and hold firmly and securely in position by wiring at intersections and splices, and by providing precast mortar blocks or ferrous metal chairs, spacers, metal hangers, supporting wires, and other approved devices of sufficient strength to resist crushing under applied loads. Provide supports and ties of such strength and density to permit walking on reinforcing without undue displacement.

C. Place reinforcing to provide the following minimum concrete cover:

1. Surfaces exposed to water: 4-inches.
2. Surfaces poured against earth: 3-inches.
3. Formed surfaces exposed to earth or weather: -inches.
4. Slabs, walls, not exposed to weather or earth: 1-inch.

D. Minimum spacing, center of parallel bars shall be two and one half (2-1/2) times the diameter of the larger sized bar. Accurately tie reinforcing securely in place prior to pouring concrete. Placing of dowels or other reinforcing in the wet concrete is not permitted.

3.6 MIXING AND TRANSPORTING PORTLAND CEMENT CONCRETE

A. Transit mix concrete in accordance with the requirements of ASTM Designation C 94. Transit mix for not less than ten (10) minutes total, not less than three (3) minutes of which shall be on the site just prior to pouring. Mix continuous with no interruptions from the time the truck

is filled until the time it is emptied. Place concrete within one hour of the time water is first added unless authorized otherwise by the Owner's Representative.

B. Do not hand mix concrete for use in concrete structures.

3.7 PLACING PORTLAND CEMENT CONCRETE

A. Thoroughly wet subgrade when concrete is placed directly on soil. Remove all standing water prior to placing concrete.

B. Do not place concrete until the subgrade and the forms have been approved.

C. Convey concrete from mixer to final location as rapidly as possible by methods that prevent separation of the ingredients. Deposit concrete as nearly as possible in final position to avoid re-handling.

D. Place and solidify concrete in forms without segregation by means of mechanical vibration or by other means as approved by the Owner's Representative. Continue vibration until the material is sufficiently consolidated and absent of all voids without causing segregation of material. The use of vibrators for extensive shifting of fresh concrete will not be permitted.

E. Concrete in certain locations may be pumped into place upon prior approval by the Owner's Representative. When this procedure requires redesign of the mix, such redesign shall be submitted for approval in the same manner as herein specified for approval of design mixes.

3.8 PLACING ACCESSORY MATERIALS

A. Place water stops and other items required to be embedded in of portland cement concrete structures at locations shown or required in accordance with Section 51 of the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans.

B. Curing Compounds:

1. Regular Portland Cement Concrete: Apply "Non-Pigmented Curing Compound - chlorinated Rubber Base-Clear" in accordance with Section 90-1.02J of the Caltrans Standard Specifications.

3.9 EXPANSION JOINTS

A. Construct expansion joints incorporating premolded joint fillers at twenty (20) foot intervals in all concrete curbs, gutters, sidewalks, median/island paving, valley gutters, driveway approaches and at the ends of all returns. At each expansion joint install one-half inch by twelve inch (1/2" x 12") smooth slip dowels in the positions shown or noted on the detail drawings.

B. Orient slip dowels at right angles to the expansion joint and hold firmly in place during the construction process by means of appropriate chairs.

3.10 WEAKENED PLANE JOINTS

A. Construct weakened plane joints in concrete curbs, gutters, sidewalks, median/island paving and valley gutters between expansion joints at ten (10) foot intervals throughout, or as

otherwise indicated. Depth of joint score depth to be one-fourth (25%) the thickness of the concrete.

1. Grooved Joints: Form weakened plane joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8-inch. Repeat grooving of weakened plane joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

3.11 FINISHING CONCRETE

A. Finish curb and gutter in conformance with the applicable requirements of Section 73-2.03 of the Caltrans Standard Specifications as modified herein.

B. Where monolithic curb, gutter and sidewalk is specified, separate concrete pours will not be allowed.

C. Provide a medium broom finish to all horizontal surfaces unless otherwise shown.

3.12 FORM REMOVAL

A. Remove forms without damage to the concrete. Remove all shores and braces below the ground surface, before backfilling.

B. Do not backfill against concrete until the concrete has developed sufficient strength to prevent damage.

C. Leave forms for cast-in-place walls in place at least 72 hours after pouring.

D. Leave edge forms in place at least 24 hours after pouring.

3.13 CONSTRUCTION

A. Form, place and finish concrete walkways, island paving, valley gutters and driveway approaches in conformance with the applicable requirements of Section 73-1.03, 73-2.03 and 73-3.03 of the Caltrans Standard Specifications as modified herein.

B. Construct new concrete curb, curb and gutter and valley gutters against existing asphalt concrete by removing a minimum of 12-inches of the asphalt concrete to allow placement of curb or gutter forms. Patch pavement with a 6-inch deep lift of asphalt concrete after gutter form is removed.

3.14 CONNECTING TO EXISTING CONCRETE IMPROVMENTS

A. New curb, gutter, or sidewalk is to connect to existing improvements to remain by saw cutting to existing sound concrete at the nearest score line, expansion joint or control joint. Drill and insert 1/2-inch diameter by 12-inch long dowels at 24-inches on center into existing improvements. Install pre-molded expansion joint filler at the matching joint.

B. A cold joint to the existing curb is not acceptable.

3.15 FIELD QUALITY CONTROL

A. Finish subgrade for concrete improvements shall be subject to approval prior to placement of forms.

B. No concrete shall be placed prior to approval of forms.

C. Concrete improvements constructed shall not contain "bird baths" or pond water and shall be smooth and ridge free.

D. Conform the finish grade at top of curb, flow line of gutter, and the finish cross section of concrete improvements to the design grades and cross sections.

E. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established in Section 73 of the Caltrans Standard Specifications.

3.16 RESTORATION OF EXISTING IMPROVEMENTS

A. Replace in kind all pavement or other improvements removed or damaged due to the installation of concrete improvements.

B. Remove, landscaping or plantings damaged or disturbed due to the installation of concrete improvements. Replace in kind.

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 321100

BASE COURSES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aggregate subbase.

B. Aggregate base.

C. Cement treated base.

1.2 RELATED SECTIONS

A. Section 312300 – Excavation and Fill.

B. Section 321200 – Flexible Paving.

1.3 RELATED DOCUMENTS

A. Not applicable.

B. ASTM:

1. D 3740, Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
2. E 329, Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
3. E 548, Guide for General Criteria Used for Evaluating Laboratory Competence.

C. Caltrans Standard Specifications:

1. Section 24, Lime Stabilization.
2. Section 25, Aggregate Subbases.
3. Section 26, Aggregate Bases.
4. Section 27, Cement Treated Bases.

1.4 DEFINITIONS

A. Geotechnical Testing Agency: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.

B. 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, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.

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

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

1.5 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

B. Submit material certificates signed by the material producer and the Contractor, certifying that that each material item complies with, or exceeds the specified requirements.

1.6 QUALITY ASSURANCE

A. Conform all work and materials to the recommendations or requirements of the Geotechnical Report and meet the approval of the Geotechnical Consultant.

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. Perform installation of base materials under the observation of the Geotechnical Consultant. Materials placed without approval of the Geotechnical Consultant will be presumed to be defective and, at the discretion of the Geotechnical Consultant, shall be removed and replaced at no cost to the Owner. Notify the Geotechnical Consultant at least 24-hours prior to commencement of base material installation and at least 48 hours prior to testing.

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

E. Finish surface of material to be stabilized prior to lime treatment shall be as specified in Section 24-1.02 of Caltrans Standard Specifications.

F. Finish surface of the stabilized material after lime treatment shall be as specified in Section 24-2.03F of Caltrans Standard Specifications.

G. Finish surface of cement treated base shall be as specified in Section 27 of Caltrans Standard Specifications.

H. Do not project the finish surface of aggregate subbase above the design subgrade.

I. Finish grade tolerance at completion of base installation: +0.05

1.7 PROJECT CONDITIONS

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

B. Temporarily stockpile material in an orderly and safe manner and in a location approved by the Owner.

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

PART 2 PRODUCTS

2.1 AGGREGATE SUBBASE

A. Material: Caltrans Standard Specification Section 25.

1. Class 1, 2, or 3: Section 25-1.02B.
2. Class 4: Section 25-1.02C.
3. Class 5: Section 25-1.02D.

2.2 AGGREGATE BASE

A. Material: Caltrans Standard Specification Section 26.

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.

2.3 CEMENT TREATED BASE

A. Materials: Caltrans Standard Specification Section 27-1.02.

PART 3 EXECUTION

3.1 GENERAL

A. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.

3.2 WET WEATHER CONDITIONS

A. Do not place or compact subgrade if above optimum moisture content.

B. If the Geotechnical Consultant allows work to continue during wet weather conditions, conform to supplemental recommendations provided by the Geotechnical Consultant.

3.3 AGGREGATE SUBBASE

A. Spreading and Compacting: Sections 25-1.03D and 25-1.03E of Caltrans Standard Specifications.

3.4 AGGREGATE BASE

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

3.5 CEMENT TREATED BASE

A. Cement treated base shall be as follows: Proportioning and Mixing Plant-Mixed: Section 27-1.03D of Caltrans Standard Specifications.

3.6 LIME STABILIZATION

A. Performing the stabilization shall conform to Section 24-2.03 of Caltrans Standard Specifications and the following:

1. Add lime in the amount specified by the Geotechnical Consultant.
2. Lime treat subgrade soils from back of curb to back of curb to a depth specified by the Geotechnical Consultant.
3. Mix in two mixing periods, both with the tines lowered to the same depth. Both mixing periods shall be monitored and verified by a Geotechnical Consultant. The second mixing shall occur at about 24 hours after the initial mixing.
4. Compact and grade the lime mixed subgrade immediately after the second mixing.
5. Compact the lime treated subgrade to 93 percent as determined by ASTM D1557.
6. After application of the curing seal, do not allow traffic on the lime treated material for a period of 7 days in lieu of the 3 days specified in Section 24-2.03A of Caltrans Standard Specifications.
7. Proof-roll the stabilized subgrade after compacting to confirm that a non-yielding surface has been achieved. Yielding areas, if any, shall be mitigated. Mitigation could consist of over-excavation, utilization of stabilization fabric, or chemical treatment. Each case shall be addressed individually in the field by the Geotechnical Consultant.

3.7 DISPOSAL

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

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 321200

FLEXIBLE PAVING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tack coat.

B. Asphaltic concrete paving.

C. Asphaltic concrete overlay.

D. Slurry seals.

E. Speed bumps.

F. Asphalt curbs.

G. Pavement grinding.

1.2 RELATED SECTIONS

A. Section 321100 – Base Courses.

1.3 RELATED DOCUMENTS

A. Geotechnical Report.

B. ASTM:

1. D 979: Practice for Sampling Bituminous Paving Mixtures.
2. D 1073: Specification for Fine Aggregate for Bituminous Paving Mixtures.
3. D 1188: Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens.
4. D 2041: Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.
5. D 2726: Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures.
6. D 2950: Test Method for Density of Bituminous Concrete in Place by Nuclear Method.
7. D 3549: Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
8. D 3666: Specifications for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Mixtures.

C. Caltrans Standard Specifications.

1. Section 37: Bituminous Seals.
2. Section 39: Asphalt Concrete.
3. Section 96: Engineering Fabrics.

4. Section 92: Asphalts.
5. Section 94: Asphaltic Emulsions.

D. California Building Code:

1. Chapter 11B – Accessibility to Public Buildings.
2. Section 1127B – Exterior Routes of Travel.

1.4 DEFINITIONS

A. ASTM: American Society for Testing Materials.

1.5 QUALITY ASSURANCE

A. Testing Agency: Owner will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.

B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

C. Thickness of Asphaltic Concrete: In-place compacted thickness of asphalt courses will be determined according to ASTM D 3549.

D. Surface Smoothness: Finished surface of each asphalt course will be tested for compliance with smoothness tolerances.

E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.

1. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
2. In-place density of compacted pavement may be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

    a. One core sample may be taken for every 1000 sq. yd. or less of installed pavement, but in no case will fewer than 3 cores be taken.
    b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

1.6 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

B. Job-Mix Designs: Certificates signed by manufacturers certifying that each asphaltic concrete mix complies with requirements.

C. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

1.7 PROJECT CONDITIONS

A. Environmental Limitations:

1. Tack Coat: Minimum surface temperature of 60 deg F at application.
2. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at application.
3. Asphalt Surface Course: Minimum surface temperature of 60 deg F at application.
4. Reinforcing Fabric: Air temperature is 50 deg F and rising and pavement temperature is 40 deg F and rising.

1.8 PRODUCTS

1.9 ASPHALTIC CONCRETE

A. Caltrans Standard Specifications Section 39, Type A.

B. Asphalt Materials:

1. Asphalt: Caltrans Standard Specification Section 92, steam refined paving asphalt.
    a. Asphalt Curbs: use grade PG 70-10
    b. All other asphalt products: use grade PG 64-10.
2. Tack Coat: Caltrans Standard Specification Section 93, SS1.
3. Asphaltic Emulsion: Caltrans Standard Specification Section 94, quick-setting type, Grade QS1h anionic or CQS1h cationic.

C. Aggregates: Conform to Caltrans Standard Specification Sections 37-2.02C and 39-2.01B(4) as applicable.

D. Storing, Proportioning and Mixing Materials: Caltrans Standard Specification Section 39-3.

E. Pavement Reinforcing Fabric (If indicated on drawings): Caltrans Standard Specification Section 96.

F. Sand: ASTM D 1073, Grade No. 2 or 3.

PART 2 EXECUTION

2.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.

B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.

C. Notify Owner in writing of any unsatisfactory conditions. Do not begin paving until these conditions have been satisfactorily corrected.

2.2 PAVEMENT GRINDING

A. Clean existing paving surface of loose or deleterious material immediately before pavement grinding.

B. Grind conforms as indicated.

2.3 SOIL STERILANT

A. Not applicable.

2.4 SURFACE PREPARATION FOR AGGREGATE BASE MATERIALS

A. General: Immediately before placing asphalt materials remove loose and deleterious material from substrate surfaces and ensure that prepared subgrade is ready to receive paving according to the Caltrans Standard Specification Section 39-2.02C.

B. Tack Coat: Apply uniformly to all vertical surfaces against which asphaltic concrete is to be placed, including existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new asphalt pavement, according to the Caltrans Standard Specification Section 39-2.01C(3)(f).

1. Allow tack coat to cure undisturbed before paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

2.5 SURFACE PREPARATION FOR PAVEMENT AT ASPHALTIC CONCRETE OVERLAYS AND SLURRY SEALS

A. Pavement Irregularities: Level with asphaltic concrete, Type B, No. 4 maximum.

B. Pavement Cracks:

1. Less than ¼-inch wide: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion.
2. Wider than ¼-inch: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion and skin patch.

C. Clean surface of all material, such as leaves, dirt, sand, gravel, water and vegetation prior to applying binder of paving asphalt to existing surface.

2.6 PAVEMENT REINFORCING FABRIC

A. Protect from exposure to ultraviolet rays until placed.

B. Reject rolls with broken or damaged cores, or factory wrinkled fabric that prevents wrinkle free placement.

C. Place with binder of paving asphalt in accordance with Section 39-2.01B(3) of Caltrans Standard Specifications.

2.7 ASPHALTIC CONCRETE SPREADING AND COMPACTING EQUIPMENT

A. Spreading Equipment: Caltrans Standard Specification Section 39-2.01C(2).

B. Compaction Equipment: Caltrans Standard Specification Section 39-2.01C(2).

2.8 ASPHALTIC CONCRETE PLACEMENT

A. Place, spread and compact asphaltic concrete to required grade, cross section, and thickness according to the Caltrans Standard Specification Sections 39-2.01C(1).

B. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

2.9 JOINTS

A. Construct joints to ensure continuous bond between adjoining paving sections according to the Caltrans Standard Specification Sections 39-2.01C(4).

1. Construct joints free of depressions with same texture and smoothness as other sections of asphalt course.
2. Clean contact surfaces and apply tack coat.
3. Offset longitudinal joints in successive courses a minimum of 6 inches.
4. Offset transverse joints in successive courses a minimum of 24 inches.
5. Compact joints as soon as asphaltic concrete will bear roller weight without excessive displacement.

2.10 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact according to the Caltrans Standard Specification Sections 39-2.01C(2).

B. Compaction Requirements: Average Density to be 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

C. Finish Rolling: Finish roll paved surfaces to remove roller marks while asphalt is still warm.

D. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.

E. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh asphalt. Compact by rolling to specified density and surface smoothness.

F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

2.11 INSTALLATION TOLERANCES

A. Asphalt Pavement:

1. Course thickness and surface smoothness within the tolerances in the Caltrans Standard Specification Section 39.
2. Total Thickness: Not less than indicated.

B. Trench Patch:

1. Compacted surface: Within 0.01 foot of adjacent pavement.
2. Do not create ponding.

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 321613

CONCRETE CURBS AND GUTTERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Portland Cement Concrete curbs and gutters.

1.2 RELATED SECTIONS

A. Section 312300 – Excavation and Fill.

B. Section 321100 – Base Courses.

C. Section 320523 – Cement and Concrete for Exterior Improvements.

1.3 RELATED DOCUMENTS

A. American Concrete Institute (ACI):

1. ACI 301 - Specifications for Structural Concrete for Buildings.
2. ACI 308 - Standard Practice for Curing Concrete.

B. American society for Testing and Materials (ASTM):

1. ASTM A 185 - Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement.
2. ASTM A 615 - Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
3. ASTM D 1751 - Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

C. Caltrans Standard Specifications:

1. Section 73: Concrete Curbs and Sidewalks.
2. Section 90: Portland Cement Concrete.

1.4 DEFINITIONS

A. ASTM: American Society for Testing Materials

1.5 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

B. Concrete Mix Design: Have all concrete mixes designed by a testing laboratory and approved by the Owner. Conform all mixes to the applicable building code requirement, regardless of other minimum requirements listed herein or on the drawings. Submit mix designs for review before use. Show proportions and specific gravities of cement, fine and coarse aggregate, and water and gradation of combined aggregates.

1.6 QUALITY ASSURANCE

A. Concrete shall be subject to quality assurance in accordance with Section 90 of the Standard Specifications.

B. Certifications:

1. Provide Owner at the time of delivery with certificates of compliance signed by both Contractor and Supplier containing the following statements:

    a. Materials contained comply with the requirements of the Contract Documents in all respects.
    b. Proportions and mixing comply with the design mix approved by the Consulting Engineer. Design mix shall have been field tested in accordance with the herein requirements of the Caltrans Standard Specifications and produces the required compressive strength under like conditions.
    c. Statement of type and amount of any admixtures.

2. Provide Owner, at time of delivery, with certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.

C. Conform to the applicable provisions of Section 51, 73 and 90 of the Caltrans Standard Specification and these Technical Specifications.

1. Conform construction of portland cement concrete surface improvements (including curbs, gutters, medians, valley gutters, walks) to the requirements of Section 73 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
2. Construct "V" ditches in accordance with Section 72-4 of the Standard Specifications; except that finishing shall be in accordance with Standard Specification Section 73 instead of 53, or as otherwise required in these Technical Specifications or shown on the Plans.

1.7 DESIGNATION

A. General: Whenever the 28-day compressive strength is designated herein or on the Plans is 3,500 psi or greater, the concrete shall considered to be designated by compressive strength. The 28-day compressive strength shown herein or on the plans which are less than 3,500 psi are shown for design information only and are not considered a requirement for acceptance of the concrete. Whenever the concrete is designated by class or as minor concrete herein or on the Plans, the concrete shall contain the cement per cubic yard shown in Section 90-1.01 of the Caltrans Standard Specifications.

PART 2 PRODUCTS

2.1 GENERAL

A. Comply with requirements of Section 320523 – Cement and Concrete for Exterior Improvements.

2.2 PORTLAND CEMENT CONCRETE

A. Unless specified otherwise herein or on the Plans, Portland Cement Concrete for items in this section shall be Minor Concrete as specified in Section 90-1.01 of the Caltrans Standard Specifications.

2.3 CURBS AND GUTTERS FORMS

A. Use flexible spring-steel forms or laminated boards to form radius bends. Tolerance: Not to deviate more than 1/4 inch in 10 feet in grade and alignment.

2.4 EXPANSION JOINT MATERIAL

A. Material for expansion joints in portland cement concrete improvements shall be premolded expansion joint fillers conforming to the requirements of ASTM Designation D 1751. Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site.

B. Unless noted otherwise herein or on the Plans expansion joint thickness shall be as follows:

1. Curbs, Curb Ramps, Island Paving, Driveways and Gutter Depressions: ¼-inch.

PART 3 EXECUTION

3.1 GENERAL

A. Comply with requirements of Section 320523 – Cement and Concrete for Exterior Improvements.

B. Form, place and finish concrete walkways, island paving, valley gutters and driveway approaches in conformance with the applicable requirements of Section 73-1.03 and 73-2.03 of the Caltrans Standard Specifications as modified herein.

C. Construct new concrete curb, curb and gutter and valley gutters against existing asphalt concrete by removing a minimum of 12-inches of the asphalt concrete to allow placement of curb or gutter forms. Patch pavement with a 6-inch deep lift of asphalt concrete after gutter form is removed.

3.2 SUBGRADE

A. Conform to Section 40-1.03B of Caltrans Standard Specifications.

3.3 SOIL STERILANT

A. Not applicable.

3.4 PLACING CONCRETE FORMS

A. Form concrete improvements with a smooth and true upper edge. Side of the form with a smooth finish shall be placed next to concrete. Construct forms rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.

B. Thoroughly clean all forms prior to placement and coat forms with an approved form oil in sufficient quantity to prevent adherence of concrete prior to placing concrete.

C. Carefully set forms to the alignment and grade established and conform to the required dimensions. Rigidly hold forms in place by stakes set at satisfactory intervals. Provide sufficient clamps, spreaders and braces to insure the rigidity of the forms.

D. Provide forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs that are equal to the full depth of the concrete as shown, noted or called for on the Plans. On curves and curb returns provide composite forms made from benders or thin planks of sufficient ply to ensure rigidity of the form.

3.5 PLACING STEEL REINFORCEMENT

A. Bars shall be free of mortar, oil, dirt, excessive mill scale and scabby rust and other coatings of any character that would destroy or reduce the bond.

B. Accurately place reinforcement as shown on the plans and hold firmly and securely in position by wiring at intersections and splices, and by providing precast mortar blocks or ferrous metal chairs, spacers, metal hangers, supporting wires, and other approved devices of sufficient strength to resist crushing under applied loads. Provide supports and ties of such strength and density to permit walking on reinforcing without undue displacement.

C. Place reinforcing to provide the following minimum concrete cover:

1. Surfaces exposed to water: 4-inches.
2. Surfaces poured against earth: 3-inches.
3. Formed surfaces exposed to earth or weather: 2-inches.
4. Slabs, walls, not exposed to weather or earth: 1-inch.

D. Minimum spacing, center of parallel bars shall be two and one half (2-1/2) times the diameter of the larger sized bar. Accurately tie reinforcing securely in place prior to pouring concrete. Placing of dowels or other reinforcing in the wet concrete is not permitted.

3.6 PLACING PORTLAND CEMENT CONCRETE

A. Thoroughly wet subgrade when concrete is placed directly on soil. Remove all standing water prior to placing concrete.

B. Do not place concrete until the subgrade and the forms have been approved.

C. Convey concrete from mixer to final location as rapidly as possible by methods that prevent separation of the ingredients. Deposit concrete as nearly as possible in final position to avoid re-handling.

D. Place and solidify concrete in forms without segregation by means of mechanical vibration or by other means as approved by the Owner. Continue vibration until the material is sufficiently consolidated and absent of all voids without causing segregation of material. The use of vibrators for extensive shifting of fresh concrete will not be permitted.

E. Concrete in certain locations may be pumped into place upon prior approval by the Owner. When this procedure requires redesign of the mix, such redesign shall be submitted for approval in the same manner as herein specified for approval of design mixes.

3.7 EXPANSION JOINTS

A. Construct expansion joints incorporating premolded joint fillers at twenty (20) foot intervals in all concrete curbs, gutters, median/island paving, valley gutters, driveway approaches and at the ends of all returns. At each expansion joint install one-half inch by twelve inch (1/2" x 12") smooth slip dowels in the positions shown or noted on the detail drawings.

3.8 WEAKENED PLANE JOINTS

A. Construct weakened plane joints in concrete curbs, gutters, median/island paving and valley gutters between expansion joints at ten (10) foot intervals throughout, or as otherwise indicated. Depth of joint score depth to be one-fourth (25%) the thickness of the concrete.

B. Grooved Joints: Form weakened plane joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8-inch. Repeat grooving of weakened plane joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

3.9 FINISHING CONCRETE

A. Finish curb and gutter in conformance with the applicable requirements of Section 73-1.03 and 73-2.03 of the Caltrans Standard Specifications as modified herein.

B. Where monolithic curb, gutter and sidewalk is specified, separate concrete pours will not be allowed.

C. Provide a medium broom finish to all horizontal surfaces unless otherwise shown.

3.10 FORM REMOVAL

A. Remove forms without damage to the concrete. Remove all shores and braces below the ground surface, before backfilling.

B. Do not backfill against concrete until the concrete has developed sufficient strength to prevent damage.

C. Leave edge forms in place at least 24 hours after pouring.

3.11 CONNECTING TO EXISTING CONCRETE IMPROVEMENTS

A. New curb or gutter is to connect to existing improvements to remain by saw cutting to existing sound concrete at the nearest score line, expansion joint or control joint. Drill and insert ½-inch diameter by 12-inch long dowels at 24-inches on center into existing improvements. Install pre-molded expansion joint filler at the matching joint.

B. A cold joint to the existing curb is not acceptable.

3.12 FIELD QUALITY CONTROL

A. Conform the finish grade at top of curb, flow line of gutter, and the finish cross section of concrete improvements to the design grades and cross sections.

B. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established in Section 73 of the Caltrans Standard Specifications.

3.13 RESTORATION OF EXISTING IMPROVEMENTS

A. Replace in kind all pavement or other improvements removed or damaged due to the installation of concrete improvements.

B. Remove, landscaping or plantings damaged or disturbed due to the installation of concrete improvements. Replace in kind.

END OF SECTION

SECTION 321723

PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removal of existing traffic stripes and pavement markers.

B. Removal of existing signs.

C. Cleaning and sweeping of streets before application of traffic stripes and pavement markings.

D. Materials and application for traffic stripes and pavement markings.

E. Materials and application for pavement markers.

F. Traffic control signs and street name signs.

G. Object markers.

H. Survey monuments.

1.2 RELATED SECTIONS

A. Section 320523 – Cement and Concrete for Exterior Improvements.

1.3 RELATED DOCUMENTS

A. Caltrans Standard Specifications:

1. Section 56, Signs.
2. Section 81, Monuments.
3. Section 82, Markers and Delineators.
4. Section 84, Traffic Stripes and Pavement Markings.
5. Section 85, Pavement Markers.

B. Caltrans Standard Plans:

1. Plan A20A through A20D: Pavement Markers and Traffic Lines, Typical Details.
2. Plan A24A and A24B: Pavement Markings Arrows.
3. Plan A24C: Pavement Markings, Symbols and Numerals.
4. Plan A24D: Pavement Markings, Words.
5. Plan A24E: Pavement Markings, Words and Crosswalks.
6. Plan A73A: Object Markers.
7. Plan A73B: Markers.
8. Plan A74: Survey Monuments.
9. Plan RS1: Roadside Sign, Typical Installation Details No. 1.

C. The Manual of Uniform Traffic Control Devices (MUTCD), and the California Supplement to the MUTCD, the editions in effect at time of date on plans.

D. The regulations, standards, and tests of the State of California Department of Transportation Materials and Research Division, edition in effect at time of date on plans.

1.4 QUALITY ASSURANCE

A. Deliver certificates showing conformance with this specification to the Owner with each shipment of materials and equipment to the Project site.

1.5 PROJECT CONDITIONS

A. Do not apply traffic striping or pavement markings to the pavement until after approval to proceed has been given by the Owner.

B. Thoroughly cure new asphalt concrete and portland cement concrete before application of stripes, markings or markers.

PART 2 PRODUCTS

2.1 GENERAL

A. For products to be installed within the jurisdiction of a local, state or federal agency, product(s) shall conform to the agency's standard specifications.

2.2 THERMOPLASTIC STRIPES AND MARKING

A. Conform thermoplastic striping and marking materials to Section 84-2.02 of Caltrans Standard Specifications, unless noted otherwise herein or on the Plans.

2.3 PAINTED STRIPES AND MARKINGS

A. Conform painted striping and marking materials to Section 84-3.02 of Caltrans Standard Specifications, unless noted otherwise herein or on the Plans.

2.4 PAVEMENT MARKERS

A. Types: Section 85-1.02 of Caltrans Standard Specifications and as indicated.

B. Sampling, Tolerances and Packaging: Section 85-1.03 of Caltrans Standard Specifications.

C. Material

1. Non-reflective: Section 85-1.04 of Caltrans Standard Specifications.
2. Retroreflective: Section 85-1.05 of Caltrans Standard Specifications.

2.5 TRAFFIC CONTROL SIGNS

A. General: Section 56-2 of the Caltrans Standard Specifications.

B. Sign Panels: Conform type (regulatory or warning), size, shape and pattern to the State of California, Department of Transportation, Traffic Manual, edition in effect at the date of the Plans. Sign faces to be of reflectorized porcelain enamel.

C. Posts:

1. Metal: Two (2) inch inside diameter steel pipe. Conform to Section 56-2.02A of Caltrans Standard Specifications, unless otherwise specified.
2. Wood: Conform to Section 56-2.02B.

D. Mounting Hardware: Section 56-2.02D of Caltrans Standard Specifications, unless otherwise specified.

E. Post Foundations: Portland cement concrete conforming to Section 320523 – Cement and Concrete for Exterior Improvements.

2.6 REFLECTORIZED OBJECT MARKERS

A. Reflectorized Metal Object Markers: Conform to the applicable requirements of Section 82 of Caltrans Standard Specifications for target plates and reflectors, and Caltrans Standard Plan A73A for type L-1 or L-2 object markers.

B. Posts: Metal posts conforming to the applicable requirements of Section 82-1.02B of Caltrans Standard Specifications and Caltrans Standard Plan A73B.

C. Mounting Hardware: Conform to the applicable requirements of Section 82-1.02G of Caltrans Standard Specifications.

PART 3 EXECUTION

3.1 REMOVAL OF TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS

A. Where blast cleaning is used for the removal of painted traffic stripes and pavement markings, or for removal of objectionable material, remove the residue, including dust and water, immediately after contact with the surface being treated. Remove by a vacuum attachment operating concurrently with the blast cleaning operation.

B. Where grinding is used for the removal of thermoplastic traffic stripes and pavement markings; remove the residue by means of a vacuum attachment to the grinding machine. Do not allow the residue to flow across or be left on, the pavement.

C. Where markings are to be removed by blast cleaning or by grinding, the removed area shall be approximately rectangular so that no imprint of the removed marking remains on the pavement.

D. Contractor will be responsible for repairing any damage to the pavement during removal of pavement markers. Damage to the pavement, resulting from removal of pavement markers, shall be considered as any depression more than 1/4-inch deep.

3.2 TEMPORARY PAVEMENT MARKERS

A. If permanent pavement markers cannot be installed immediately, and the street or road is to be placed in service, install short term, temporary pavement markers on the new pavement prior to opening the street or road to traffic.

B. Place markers, at a minimum, of 24 feet on centers or as required by the governmental agency having jurisdiction, in the appropriate colors to delineate centerlines and travel lanes on multi-lane roadways.

3.3 THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS

A. Apply in conformance with the manufacturer's instructions and the applicable requirements of Section 84-2.04 of Caltrans Standard Specifications and Caltrans Standard Plans A20A through A20D, and A24A through A24E.

3.4 PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS

A. Apply in conformance with the manufacturer's instructions and the applicable requirements of Section 84-3.03, 3.04 and 3.05 of Caltrans Standard Specifications and Caltrans Standard Plans A20A through A20D, and A24A through A24E.

3.5 PAVEMENT MARKERS

A. Place in conformance with the requirements of Section 85-1.06 of the Caltrans Standard Specifications.

B. Pavement recesses are not required. Markers shall be installed accurately to the line established by the Engineer. No markers shall be installed until the surface has been approved by the Owner.

3.6 TRAFFIC CONTROL SIGNS

A. Install in conformance with Sections 56-2.03 and 2.04 of Caltrans Standard Specifications, Caltrans Standard Plan RS1, the applicable requirements of the State of California Department of Transportation Maintenance Manual and the details shown on the Plans. The horizontal locations shown on Caltrans Standard Plan RS1 shall not be applicable, the horizontal location shall be as shown on the Plans.

B. Portland cement concrete for post foundations shall be of the configuration shown on the Plans.

C. After erection, damage to traffic sign faces shall be touched up or the sign replaced.

3.7 STREET NAME SIGNS

A. Install in accordance with the manufacturer’s instructions and as shown on the Plans.

B. Horizontal location shall be as shown on the Plans.

C. Portland cement concrete for post foundations shall be of the configuration shown on the Plans.

3.8 REFLECTORIZED OBJECT MARKERS

A. Install in conformance with the requirements of Section 82-1.03 of Caltrans Standard Specifications, except that the metal marker posts shall not be driven in place without prior approval of the Owner.

B. Install at locations shown on the Plans.

3.9 STREET SURVEY MONUMENTS

A. General: Conform to Section 81-03 of Caltrans Standard Specifications and Caltrans Standard Plan A74, except that the marker disk will not be furnished. Exact point in marker to be determined by an accurate survey and clearly punched in top of marker together with California Registered Civil Engineer's or California Licensed Land Surveyor's license number.

3.10 PROTECTION

A. Protect the newly installed and traffic stripes and pavement markings from damage until the material has cured.

B. Replace any traffic stripes or pavement markings or markers broken, misaligned or otherwise disturbed prior to opening roadway to traffic.

3.11 RESTORATION OF EXISTING IMPROVEMENTS

A. Existing signs striping or other markings removed or damaged due to the installation of new facilities shall be replaced in kind.

B. Existing landscaping or planting removed, damaged or disturbed due to the installation of traffic control signs or street name signs shall be replaced in kind.

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 330513

MANHOLE GRADE ADJUSTMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Adjusting manholes, valves, monument covers and other structures to grade.

1.2 RELATED SECTIONS

A. Section 321200 – Flexible Paving.

1.3 DEFINITIONS

A. ASTM: American Society for Testing Materials.

1.4 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.

1.5 RELATED DOCUMENTS

A. California Building Code: Section 1127B – Exterior Routes of Travel.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 ADJUSTING MANHOLES, VALVES, MONUMENT COVERS AND OTHER STRUCTURES TO GRADE

A. Remove pavement, using vertical cuts, as needed to remove frame and provide for concrete collar. Do not damage adjacent pavement.

1. Circular Covers: Cut circle with radius 6 inches larger than cover and concentric with cover.
2. Rectangular Covers: Cut rectangle 6 inches larger than cover on all sides.

B. Install grade rings or blocking as needed to raise cover to finish grade.

C. Pour concrete collar:

1. Bottom of Collar: Top of existing collar or 6 inches below top of proposed collar, whichever is at a higher elevation.
2. Top of Collar: Bottom of existing asphalt pavement.
3. Apply tack coat to all exposed surfaces.
4. Fill excavation with asphaltic concrete and, while still hot, compact flush with adjacent surface.

3.2 INSTALLATION TOLERANCES

A. Adjust Covers:

1. Compacted surface: Up to 0.01 foot higher, and no lower, than adjacent pavement.
2. Do not create ponding.

END OF SECTION

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 33 05 16

UTILITY STRUCTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Manhole structures for gravity storm drain and sanitary sewer utilities.

1.2 RELATED SECTIONS

A. Section 31 23 33 – Trenching and Backfilling.

1.3 RELATED DOCUMENTS

A. AASHTO:

1. M 199: Precast Reinforced Concrete Manhole Sections.

B. ASTM:

1. A 615/A615M: Deformed and Billet-Steel Bars for Concrete Reinforcement.
2. C 478: Precast Reinforced Concrete Manhole Sections.
3. C 1244: Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test.

C. Caltrans Standard Specifications.

1. Section 51, Concrete Structures.
2. Section 75, Miscellaneous Metal.

D. California Building Code.

1. Section 1172B – Exterior Routes of Travel.

1.4 DEFINITIONS

A. AASHTO: American Association of State Highway and Transportation Officials.
B. ASTM: American Society for Testing Materials.

1.5 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions.
B. Product data for the following:

1. Cleanout plugs or caps.

C. Shop drawings: Include plans, elevations, details and attachments for the following:

1. Precast concrete manholes, frames and covers.
2. Precast concrete clean out boxes and box covers.

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

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

1.6 DELIVERY, STORAGE AND HANDLING

A. Handle precast concrete manholes according to manufacturer's written instructions.

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

PART 2 – PRODUCTS

2.1 CLEANOUTS

A. Piping: Same as utility line if possible.

B. Top Cap: Threaded and of same material as piping if possible.

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

D. Box Types:

1. Landscape Areas: Portland cement concrete box and box cover (bolt-down), light duty.
2. Traffic Areas: Portland cement concrete box and box cover or steel or cast iron cover, heavy duty, both box and cover (bolt down) to be rated for AASHTO H20 loading.
3. Pedestrian Areas: Same as traffic area, with ADA-Compliant cover.

E. Box Cover Markings: "S.D." for storm drain cleanouts, "S.S." for sanitary sewer cleanouts, unless otherwise specified.

F. 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:

1. Brooks Products Inc. (El Monte, California) (Tel. 818-443-3017).
2. Christy Concrete Products, Inc. (Fremont, California) (Tel. 800-486 7070).

2.2 MANHOLES

A. General: Size, shape, configuration, depth, etc. of manhole and frame and cover shall be as indicated.

B. Portland Cement Concrete and Reinforcing:

1. Cast-In-Place Portion: Use Class A Concrete per Caltrans Standard Specification Section 90, and ASTM A615 Grade 60 reinforcing steel bars.
2. Precast Portion: ASTM C 478. Rate for AASHTO H20 loading in traffic areas.

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

D. Steps: ASTM C 478 or AASHTO M 199. Manufacture from deformed, ½-inch steel reinforcement rod complying with ASTM A 615 and encased in polypropylene complying with ASTM D4101. Include pattern designed to prevent lateral slippage off step. Acceptable manufacturer is Hanson Concrete Products, (Milpitas, CA) (Tel 408-262-1091) or equal.

2.3 JOINT SEALANT FOR STRUCTURES AND MANHOLES

A. Mortar: Caltrans Standard Specification Section 51-1.135.

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.

1. Rubber Gaskets: ASTM C443.
2. Plastic Gaskets: Federal Specification SS-S-00210 (GSA-FSS), Type I, Rope Form; or alternate standard which may exist. Acceptable material is "Ram-Nek," as manufactured by the K. T. Snyder Company (Houston TX), or equal.

PART 3 - EXECUTION

3.1 CLEANOUT INSTALLATION

A. General: Install as indicated.

3.2 MANHOLE INSTALLATION

A. General: Install as indicated.

3.3 TESTING OF MANHOLES ON GRAVITY LINES

A. At the option of the Contractor, either the following hydrostatic or vacuum test shall be performed.

B. Hydrostatic Test:

1. Insert inflatable plugs in all sewer inlets and outlets.
2. Fill the manhole with water to a point six inches below the base of the manhole frame.
3. Maintain the water at this point for one hour to allow time for absorption.
4. Begin one-hour test period. Measure the amount of water added in one-hour period to maintain the water level at six inches below the base of the manhole frame. Do not allow water level to drop more than 25% of the manhole depth.
5. Determine the allowable leakage by the following formula.
6. L=0.0002 x D X H 1/2
7. L = Allowable leakage, gallons per minute.
8. D = Depth of manhole from top to bottom, feet.

9. H = Head of water in feet as measured from the surface of the water in the manhole to the sewer line invert or to the prevailing ground water surface outside the manhole. The lesser height governs.
10. If the leakage exceeds the allowable, determine the cause, take remedial action and re-test the manhole. If the leakage is less than the allowable and leaks are observed, repair the leaks.

C. Vacuum Test:

1. General: Test in accordance with ASTM C 1244.
2. Test prior to backfilling around the manhole.
3. Test Preparation: Plug all lift holes and pipes entering or exiting the manhole.
4. Place test head inside the top section of the manhole's cone section and inflate in accordance with the manufacturer's instructions.
5. Draw a vacuum of 10-inches of mercury and shut the pump off.
6. With the valve closed, the time for the vacuum to drop 9-inches shall be measured.
7. The manhole shall pass the test if the time is greater than 60 seconds for a 48-inch diameter manhole, 75 seconds for a 60-inch diameter manhole and 90 seconds for a 72-inch diameter manhole.
8. If the manhole fails the initial test, make necessary repairs with a non-shrink grout while the vacuum is still being drawn. Retest until a satisfactory test is obtained.

END OF SECTION 330516

ADDENDUM NO.1

C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION - PR#76

2023-01-24

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Roadway and/or site storm drainage up to 5-feet of any on-site building.

1.2 RELATED SECTIONS

A. Section 31 23 33 – Trenching and Backfilling.

1.3 RELATED DOCUMENTS

A. AASHTO:

1. M 252: Corrugated Polyethylene Drainage Tubing.
2. M 294: Corrugated Polyethylene Pipe, 12 to 24-inch Diameter.

B. ASTM:

1. A 74: Cast Iron Soil Pipe and Fittings.
2. A 615/A615M: Deformed and Billet-Steel Bars for Concrete Reinforcement.
3. C 443: Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
4. C 564: Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
5. C 1173: Flexible Transition Couplings for Underground Piping Systems.
6. D 1785: Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
7. D 2235: Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and fittings.
8. D 2321: Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.
9. D 2564: Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
10. D 2751: Acrylontrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
11. D 3034: Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings.
12. D 4101: Specifications for Propylene Injection and Extrusion Materials.
13. F 477: Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
14. F 656: Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC)Plastic Pipe and Fittings.
15. F 679: Specification for Poly Vinyl Chloride (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings.
16. F-1336: Poly Vinyl Chloride (PVC) Gasket Sewer Fittings.

C. AWWA:

1. C104: Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. C105: Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. C110: Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm Through 1,219 mm) for Water.
4. C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. C150: Thickness design of Ductile Iron Pipe.
6. C151: Ductile-Iron Pipe, Centrifugally Cast, for Water.
7. C153: Ductile-Iron Compact Fittings for Water Service.
8. M41: Ductile Iron Pipe and Fittings.

D. Caltrans Standard Specifications:

1. Section 65, Reinforced Concrete Pipe.
2. Section 66, Corrugated Metal Pipe.
3. Section 70. Miscellaneous Facilities.
4. Section 72, Slope Protection.

E. Caltrans Standard Plans:

1. Plan D94A: Metal and Plastic Flared End Sections.
2. Plan D94B: Concrete Flared End Sections.
3. Plan D97A: Corrugated Metal Pipe Coupling Details No.1, Annular Coupling Band Bar and Strap and Angle Connection.
4. Plan D97B: Corrugated Metal Pipe Coupling Details No. 2, Hat Band Coupler and Flange Details.
5. Plan D97C: Corrugated Metal Pipe Coupling Details No. 3, Helical and Universal Couplers.
6. Plan D97D: Corrugated Metal Pipe Coupling Details No. 4, Hugger Coupling Bands.
7. Plan D97E: Corrugated Metal Pipe Coupling Details No. 5, Standard Joint.
8. Plan D97F: Corrugated Metal Pipe Coupling Details No. 6, Positive Joint.
9. Plan D97G: Corrugated Metal Pipe Coupling Details No. 7, Positive Joints and Downdrains.
10. Plan D98A: Slotted Corrugated Steel Pipe Drain Details.
11. Plan D98B: Slotted Corrugated Steel Pipe Drain Details.

F. California Building Code:

G. Section 1806A.11 – Pipes and Trenches.

H. Section 1133B.7.2 – Gratings.

I. California Plumbing Code.

1.4 DEFINITIONS

A. AASHTO: American Association of State Highway and Transportation Officials.
B. ABS: Acylonitrile-butadiene-styrene.
C. ASTM: American Society for Testing Materials.
D. AWWA: American Water Works Association.
E. CMP: Corrugated metal pipe.
F. DIP: Ductile iron pipe.
G. HDPE: High-density polyethylene.
H. NPS: Nominal pipe size.
I. PE: Polyethylene.
J. PVC: Polyvinyl chloride.
K. RCP: Reinforced concrete pipe.

1.5 SUBMITTALS

A. Follow submittal procedures outlined in Section 00800 Supplementary General Conditions
B. Product Data Shop Drawings, Etc.: For the following:

1. Piping materials and fittings.
2. Special pipe couplings.
3. Polymer-concrete, channel drainage systems (trench drains).
4. Joint sealants.
5. Plastic area drains.
6. Precast concrete catch basins, inlets, curb inlets, and area drains, including frames and grates.
7. Concrete, metal and plastic flared end sections.

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.

1.6 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 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 GENERAL

A. Products and materials listed are acceptable unless otherwise specified within the construction documents.

2.2 PIPING MATERIALS

A. Reinforced Concrete Pipe: Designated by Class, rubber gasketed joints.

1. Circular Reinforced Concrete Pipe: Caltrans Standard Specification Section 65-1.02A(1). Class III.
2. Oval shaped (Elliptical) Reinforced Concrete Pipe: Caltrans Standard Specification Section 65-1.02B. Class HE-III and VE-III.
3. Reinforced Concrete Pipe Arch: Caltrans Standard Specification Section 65-1.02C.
4. Rubber Gasketed Joints: Caltrans Standard Specification Section 65-1.06.

B. PE Pipe and Fittings: 4-inch through 10-inch, AASHTO M 252 Type S, smooth interior and corrugated exterior. Bell and spigot joints.

1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
2. Couplings: AASHTO M 252, corrugated band type. Engage a minimum of 4 corrugations, 2 on each side of pipe joint.

C. PE Pipe and Fittings: 12-inch through 48-inch, AASHTO M 294.Type S, smooth interior and corrugated exterior. Bell and spigot joints.

1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
2. Couplings: AASHTO M 252, corrugated band type. Engage a minimum of 4 corrugations, 2 on each side of pipe joint.

D. PVC Pipe and Fittings-Smaller than 4-Inch: ASTM D1785, Schedule 40.

1. Joints: Solvent Cement, ASTM D 2564. Include primer according to ASTM F656.

E. PVC Pipe and Fittings,4-Inch and Larger

1. Pipe:
   (a) 4-inch through 15-inch: ASTM D 3034, SDR 35. Bell and spigot joints.
   (b) 18 inch through 36-inch: ASTM F 679, T-1 wall. Bell and spigot joints.

2. Fittings:
   (a) 4-inch through 27-inch: ASTM F 1336.
   (b) 30-inch through 36-inch: ASTM D 3034, SDR 35
3. Joint Gasket: Elastomeric seal, ASTM F 477.

2.3 PIPE ANCHORS

A. Section 32 05 23 – Cement and Concrete for Exterior Improvements.

2.4 SPECIAL PIPE COUPLINGS

A. Plastic, Cast Iron and Ductile Iron Pipe: ASTM C 1173, rubber or elastomeric sleeve and band assembly fabricated to match outside diameters of pipes to be joined.
B. Reinforced Concrete Pipe: Portland cement concrete collar as indicated.
C. Section 32 05 23 – Cement and Concrete for Exterior Improvements.

2.5 CURB INLETS, CATCH BASINS, DROP INLETS, AREA DRAINS, ETC.

A. General: Size, shape, configuration, depth, etc. of structure and frame, grate, or cover shall be as indicated.
B. Section 32 05 23 – Cement and Concrete for Exterior Improvements.
C. Precast Structure: Rate for AASHTO H20 loading in paved areas.
D. Steps: ASTM C 478 or AASHTO M 199. Manufacture from deformed, ½-inch steel reinforcement rod complying with ASTM A 615 and encased in polypropylene complying with ASTM D4101. Include pattern designed to prevent lateral slippage off step. Acceptable manufacturer is Hanson Concrete Products, (Milpitas, CA) (Tel 408-262-1091).
E. Frames, Grates and Covers: 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, bolt-down type.
3. Rate for AASHTO H20 loading in paved areas.
4. Provide ADA-compliant grate within pedestrian areas.

2.6 MANHOLES AND CLEANOUTS

A. See Section 33 05 16 – Utility Structures.

2.7 POLYMER-CONCRETE TRENCH DRAINS

A. General: Modular system of precast, polymer-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.
B. Include the following components:

1. 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.

2. Frame and Grate: Gray iron, ductile iron or galvanized steel as indicated. Where drain is located in traffic areas, rate for AASHTO H20 loading.

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

D. 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:

1. "Polydrain" by ABT Inc. (Troutman, NC) (Tel 704-528-9806).
2. "ACO Drain" by ACO Polymer Products Inc. (Chardon, OH) (Tel. 800-543-4764).

PART 3 - EXECUTION

3.1 PIPE INSTALLATION

A. General: 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, Caltrans Standard Specification Sections 66-1.045 and 66-105 for corrugated metal pipe and chapter 11.3.3 of AWWA M41 for cast iron and ductile iron pipe.

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

C. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.

D. 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.

E. 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 it's 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.

F. 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.

G. 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 INSTALLATION OF PIPE ANCHORS

A. Install at location, configuration and details shown on the Plans.

3.3 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: Per manufacturer's instructions.

3.4 INSTALLATION OF CURB INLETS, CATCH BASINS, DROP INLETS, AREA DRAINS, ETC.

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

B. Poured in Place Structures: Install as indicated and Caltrans Standard Specification Section 51.

1. Shape bottoms to convey flows as indicated.

C. Precast Structures: Install as indicated.

1. Seal all joints and pipe entrances and exits.
2. Place concrete in bottom and shape to convey flows as indicated.

3.5 POLYMER-CONCRETE TRENCH DRAIN INSTALLATION

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

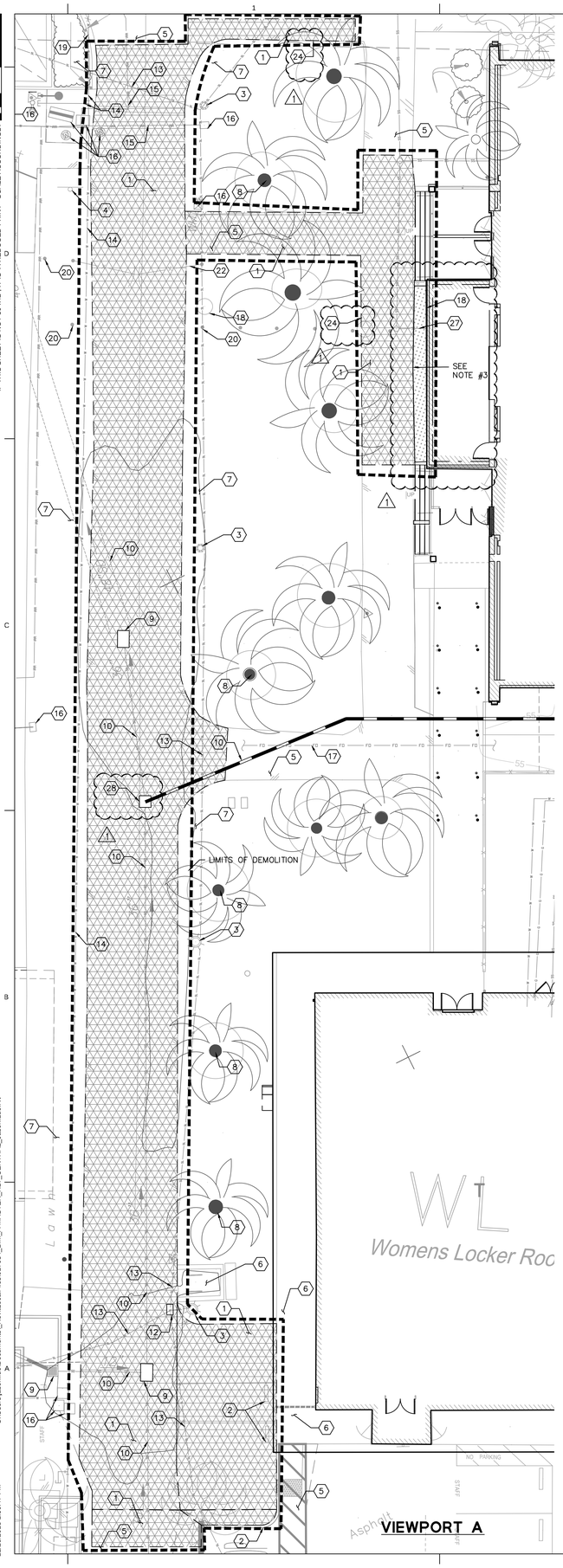
B. Install: As indicated and in accordance with the manufacturer’s instructions.

3.6 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.

END OF SECTION 334000



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0 1/4" 1/2" 1" 2"

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DEMOLITION ITEMS

- DEMOLITION LIMIT LINE
- (1) REMOVE EX AC/AB
- (2) PROTECT EX CURB
- (3) PROTECT EX SITE LIGHT
- (4) PROTECT EX SIGN
- (5) PROTECT EX AC
- (6) PROTECT EX CONCRETE
- (7) PROTECT EX LANDSCAPE
- (8) PROTECT EX TREE
- (9) PROTECT EX STORM DRAIN STRUCTURE
- (10) PROTECT EX UNDERGROUND STORM DRAIN UTILITY
- (11) PROTECT EX HIGH VOLTAGE ELEC. UTILITY
- (12) PROTECT EX ELECTRICAL UTILITY STRUCTURE
- (13) PROTECT EX UNDERGROUND ELECTRICAL UTILITY
- (14) PROTECT EX UNDERGROUND WATER UTILITY
- (15) PROTECT EX UNDERGROUND IRRIGATION UTILITY
- (16) PROTECT EX WATER UTILITY STRUCTURE
- (17) PROTECT EX UNDERGROUND COMMUNICATION UTILITY
- (18) PROTECT EX STRUCTURE
- (19) PROTECT EX CURB AND GUTTER
- (20) PROTECT EX BOLLARD
- (21) PROTECT EX COMMUNICATION UTILITY STRUCTURE
- (22) RELOCATE EX TEMPORARY FENCE
- (23) CLEAR AND GRUB
- (24) WHERE APPLICABLE, REMOVE EX HEADER BOARD ADJACENT TO AC
- (25) SALVAGE AND REUSE EX WHEELSTOPS
- (26) PROTECT EX CLEANOUT AND RAISE RIM TO GRADE
- (27) PROTECT EX SANITARY SEWER UTILITY
- (28) REMOVE EX STORM DRAIN STRUCTURE

*KEYNOTES APPLY TO ALL DEMOLITION SHEETS.

DEMOLITION NOTES

1. CONTRACTOR TO USE CAUTION WHEN WORKING ADJACENT TO EXISTING BUILDING.
2. CONTRACTOR TO CLEAR AND GRUB WITHIN THE LIMITS OF PROPOSED WORK, UNLESS OTHERWISE NOTED ON PLANS.
3. WHERE APPLICABLE IN LANDSCAPE AREAS, CONTRACTOR SHALL REMOVE EXISTING IRRIGATION UTILITY LINES AND CAP A MINIMUM OF 18" BELOW GRADE.
4. RIM ELEVATIONS FOR EXISTING UTILITY STRUCTURES SHALL BE RAISED TO PROPOSED SURFACE ELEVATIONS.
5. THE UTILITY LINES AND STRUCTURES SHOWN ON THESE PLANS ARE DERIVED FROM RECORD DATA AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES AND STRUCTURES NOT SHOWN ON THIS PLAN, SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
6. THE CONTRACTOR IS REQUIRED BY STATE LAW TO ACTIVELY RESEARCH THE WORK AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION, REFERENCE ANY MONUMENTS, AND REPLACE THOSE DAMAGED OR REMOVED DURING CONSTRUCTION.
7. THE LIMITS OF DEMOLITION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING SURROUNDINGS, LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, AND SIDEWALKS AND AVOIDING ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES OR HAZARDOUS CONDITIONS.
8. EXISTING CURB AND SIDEWALK AND LANDSCAPE/IRRIGATION WITHIN THE PROJECT LIMITS THAT ARE DAMAGED OR DISPLACED, EVEN THOUGH THEY WERE NOT TO BE REMOVED, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
9. PROTECT ALL EXISTING UTILITIES AND SITE FEATURES FROM BEING DAMAGED, UNLESS OTHERWISE NOTED. ALL UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED AT NO ADDITIONAL COST TO THE OWNER AND TO THE SATISFACTION OF THE ENGINEER.

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500 COURT ST, MARTINEZ, CA 94553

ISSUED

MARK	DATE	DESCRIPTION
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1	2023/01/24	ADDENDUM #1

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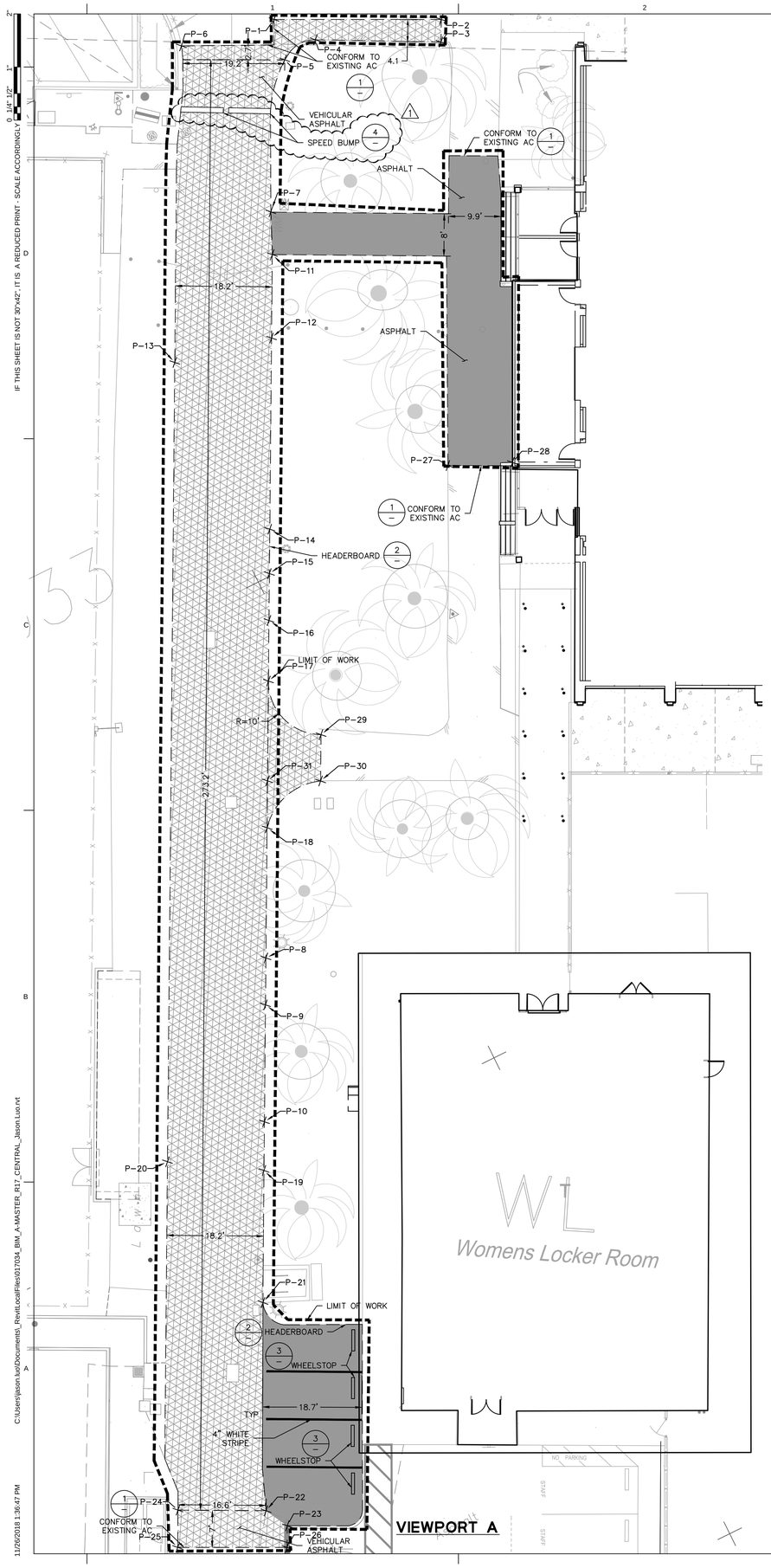
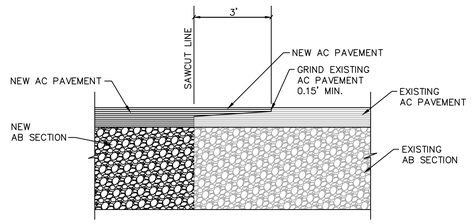
TITLE

DEMOLITION PLAN

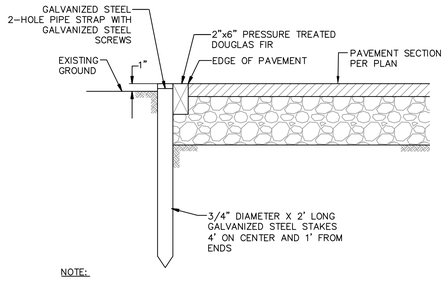
SHEET

C3.0





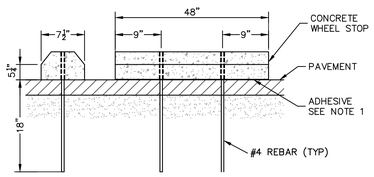
1 **AC PAVEMENT CONFORM**
NTS



NOTE:

1. ADD HEADERBOARD WHERE PROPOSED AC PAVEMENT IS ADJACENT TO LANDSCAPE

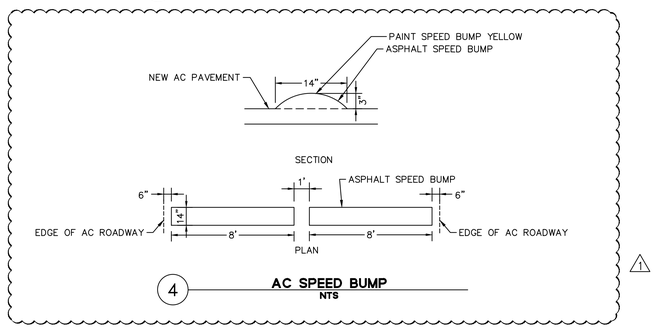
2 **HEADERBOARD**
NTS



NOTE:

1. ADHESIVE FOR ANCHORING WHEEL STOPS TO PAVEMENT SHALL BE AN EPOXY ADHESIVE MANUFACTURED FOR THE PURPOSE, SIMILAR AND EQUAL TO THE ADHESIVES SPECIFIED IN SECTION 95 OF THE CALTRANS STANDARD SPECIFICATIONS, SECTION 95-2.04 (RAPID SET EPOXY ADHESIVE) OR 95-2.05 (STANDARD SET EPOXY ADHESIVE).

3 **WHEEL STOP**
NTS



4 **AC SPEED BUMP**
NTS

SURFACE IMPROVEMENTS LEGEND

VEHICLA ASPHALT PAVEMENT (3" AC/10" CLASS II AB)

ASPHALT CONCRETE (2"AC/6" CLASS II AB, TI=5)

SURFACE IMPROVEMENTS NOTES:

1. THE LIMITS OF WORK ARE APPROXIMATE ONLY. CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING SURROUNDINGS, LANDSCAPE, AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION, AVOIDING ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS-SLOPES OR HAZARDOUS CONDITIONS.
2. ALL NEW CONCRETE SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS, INCLUDING DIAGONAL.
3. EXISTING CONCRETE SHALL BE REMOVED AT THE NEAREST EXPANSION JOINTS.
4. NEW WORK SHALL MATCH EXISTING AS CLOSELY AS POSSIBLE IN FINISH, SCORING, AND COLOR.
5. EXISTING SITE FEATURES (CURBS, CONCRETE WALKS, LANDSCAPE, IRRIGATION, ETC.) DEMOLISHED DURING CONSTRUCTION SHALL BE REPLACED IN KIND.
6. CONTROL POINTS TABLE SHOWN INCLUDES POINTS ON ALL SURFACE IMPROVEMENT PLAN SHEETS.

CONSTRUCTION NOTES:

1. AGGREGATE BASE SHALL BE ¾" MAX, CLASS 2 PER SECTION 26 OF CALTRANS STANDARD SPECIFICATIONS SUGGRADE AND BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
2. ASPHALT SHALL BE ½" MAX TYPE A PER SECTION 39 OF CALTRANS STANDARD SPECIFICATION. ASPHALT BINDER SHALL BE PG 64-10 OR PG 64-16 PER SECTION 92 OF THE CALTRANS SPECIFICATION.
3. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC, PER CALTRANS SECTION 84-2, UNLESS OTHERWISE NOTED. (1)

Point Table			
Point #	DESCRIPTION	Northing	Easting
1	ASPHALT IMPROVEMENTS	2180593.6065	6031149.6887
2	ASPHALT IMPROVEMENTS	2180579.6165	6031177.9211
3	ASPHALT IMPROVEMENTS	2180575.8223	6031175.9686
4	ASPHALT IMPROVEMENTS	2180586.7120	6031154.9750
5	ASPHALT IMPROVEMENTS	2180585.9088	6031148.1205
6	ASPHALT IMPROVEMENTS	2180596.8951	6031131.8530
7	ASPHALT IMPROVEMENTS	2180561.4201	6031133.0724
8	ASPHALT IMPROVEMENTS	2180435.9385	6031069.8525
9	ASPHALT IMPROVEMENTS	2180428.0580	6031065.8574
10	ASPHALT IMPROVEMENTS	2180408.4118	6031055.8988
11	ASPHALT IMPROVEMENTS	2180554.0834	6031129.7443
12	ASPHALT IMPROVEMENTS	2180540.0656	6031122.6379
13	ASPHALT IMPROVEMENTS	2180544.0411	6031104.2581
14	ASPHALT IMPROVEMENTS	2180507.9547	6031106.3592
15	ASPHALT IMPROVEMENTS	2180500.5043	6031102.5822
16	ASPHALT IMPROVEMENTS	2180492.6238	6031098.5872
17	ASPHALT IMPROVEMENTS	2180482.4468	6031093.4279
18	ASPHALT IMPROVEMENTS	2180457.8069	6031080.9366
19	ASPHALT IMPROVEMENTS	2180400.2378	6031051.7573
20	ASPHALT IMPROVEMENTS	2180409.7996	6031036.2040
21	ASPHALT IMPROVEMENTS	2180378.0349	6031040.5420
22	ASPHALT IMPROVEMENTS	2180342.6540	6031023.6660
23	ASPHALT IMPROVEMENTS	2180338.3548	6031025.9911
24	ASPHALT IMPROVEMENTS	2180350.1327	6031008.8418
25	ASPHALT IMPROVEMENTS	2180343.8669	6031005.6807
26	ASPHALT IMPROVEMENTS	2180334.7202	6031024.1391
27	ASPHALT IMPROVEMENTS	2180503.7988	6031141.7450
28	ASPHALT IMPROVEMENTS	2180498.9226	6031152.8945
29	ASPHALT IMPROVEMENTS	2180469.0058	6031097.8255
30	ASPHALT IMPROVEMENTS	2180461.2296	6031093.8834
31	ASPHALT IMPROVEMENTS	2180465.6874	6031084.9317

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SURFACE IMPROVEMENT PLAN

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0 1/4" 1/2" 1" 2"

ADDITIONAL ALTERNATIVE A ITEMS

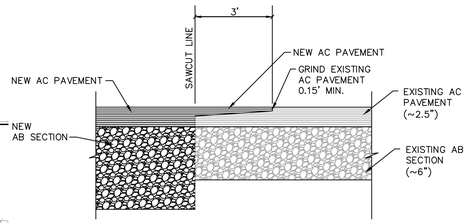
DEMOLITION LIMIT LINE

1. REMOVE EX AC/AB
2. REMOVE EX LANDSCAPE
3. PROTECT EX TREE
4. PROTECT EX STAIRS
5. PROTECT EX AC/AB
6. PROTECT EX LANDSCAPE
7. PROTECT EX CONCRETE
8. PROTECT EX BUILDING
9. PROTECT EX BOLLARD
10. PROTECT EX GATE
11. PROTECT EX UTILITY
12. PROTECT EX LIGHT POLE
13. PROTECT EX CURB
14. PROTECT EX STRUCTURE
15. PROTECT EX CLEANOUT AND RAISE RIM TO GRADE
16. SALVAGE AND RESUSE EX WHEELSTOPS
17. PROTECT EX TRANSFORMER

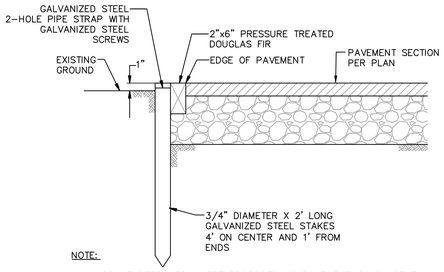
1. WHEELSTOP, SEE DETAIL 3
2. HEADBOARD, SEE DETAIL 2
3. AC CONFORM, SEE DETAIL 1
4. 4" WHITE STRIPE
5. VEHICULAR ASPHALT CONCRETE (3" AC/10" CLASS II AB, TI=5)
6. RAISE EX UTILITY RIM TO FINISHED GRADE, SEE UTILITY NOTE 2 ON SHEET C5.0

NOTES:

1. RECYCLED AGGREGATE MUST COMPLY WITH THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS FOR THE USE OF RECYCLED AGGREGATE.
2. WHERE APPLICABLE IN LANDSCAPE AREAS, CONTRACTOR SHALL REMOVE EXISTING IRRIGATION UTILITY LINES AND CAP A MINIMUM OF 18" BELOW GRADE.



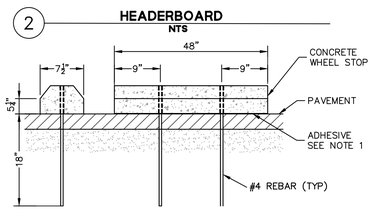
1 AC PAVEMENT CONFORM
NTS



NOTE:

1. ADD HEADERBOARD WHERE PROPOSED AC PAVEMENT IS ADJACENT TO LANDSCAPE

2 HEADERBOARD
NTS



NOTE:

1. ADHESIVE FOR ANCHORING WHEEL STOPS TO PAVEMENT SHALL BE AN EPOXY ADHESIVE MANUFACTURED FOR THE PURPOSE, SIMILAR AND EQUAL TO THE ADHESIVES SPECIFIED IN SECTION 95 OF THE CALTRANS STANDARD SPECIFICATIONS, SECTION 95-2.04 (RAPID SET EPOXY ADHESIVE) OR 95-2.05 (STANDARD SET EPOXY ADHESIVE).

3 WHEEL STOP
NTS

ALTERNATIVE 1

ALTERNATIVE 2

GRAPHIC SCALE
10 0 10 20

ADDITIONAL ALTERNATIVE B ITEMS

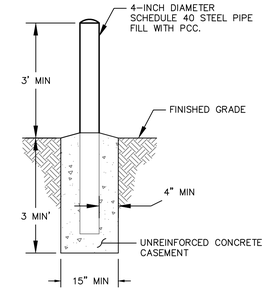
DEMOLITION LIMIT LINE

1. REMOVE EX AC/AB
2. REMOVE EX LANDSCAPE
3. PROTECT EX TREE
4. PROTECT EX STAIRS
5. PROTECT EX AC/AB
6. PROTECT EX LANDSCAPE
7. PROTECT EX CONCRETE
8. PROTECT EX BUILDING
9. PROTECT EX BOLLARD
10. PROTECT EX GATE
11. PROTECT EX UTILITY
12. PROTECT EX LIGHT POLE
13. PROTECT EX CURB
14. PROTECT EX STRUCTURE
15. PROTECT EX CLEANOUT AND RAISE RIM TO GRADE
16. SALVAGE AND REUSE EX WHEELSTOP

1. WHEELSTOP, SEE DETAIL 3, THIS SHEET
2. HEADBOARD, SEE DETAIL 2, THIS SHEET
3. AC CONFORM, SEE DETAIL 1, THIS SHEET
4. 4" WHITE STRIPE
5. VEHICULAR ASPHALT CONCRETE 3" AC/10" CLASS II AB, TI=5)
6. VERTICAL CURB, SEE DETAIL 5, THIS SHEET
7. BOLLARD, SEE DETAIL 4, THIS SHEET

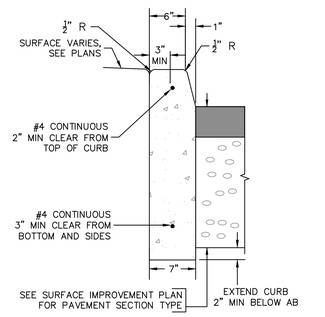
NOTES:

1. RECYCLED AGGREGATE MUST COMPLY WITH THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS FOR THE USE OF RECYCLED AGGREGATE.
2. WHERE APPLICABLE IN LANDSCAPE AREAS, CONTRACTOR SHALL REMOVE EXISTING IRRIGATION LINES AND CAP A MINIMUM OF 18: BELOW GRADE.



LOCATE 4-FEET ON CENTER AND 3-FEET FROM OBJECT BEING PROTECTED.

4 BOLLARD
NTS



5 VERTICAL CURB
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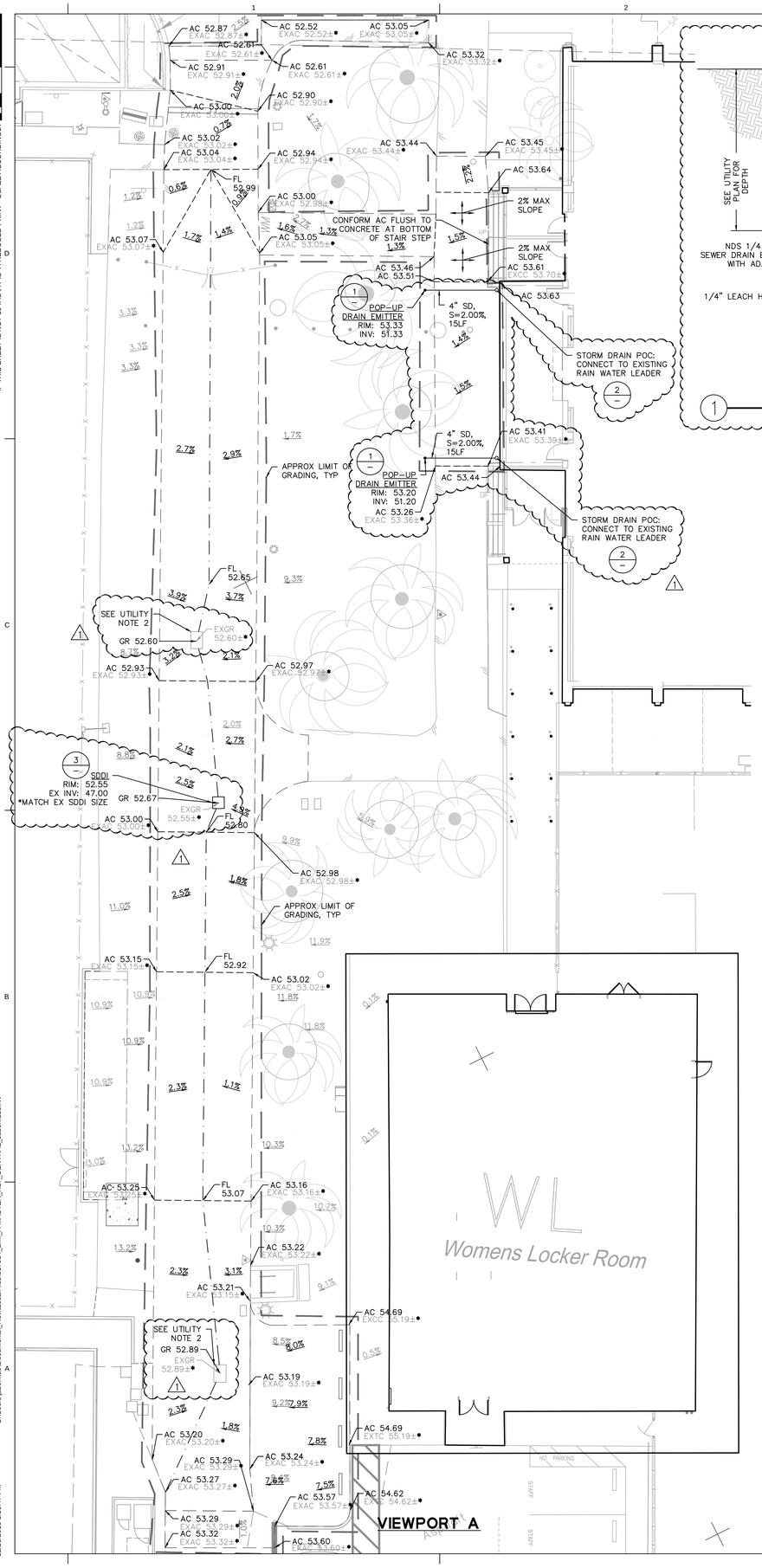
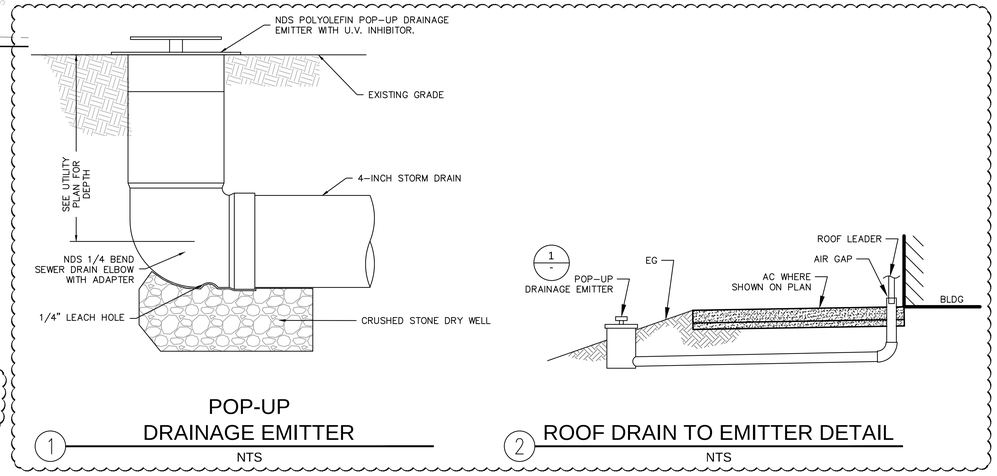
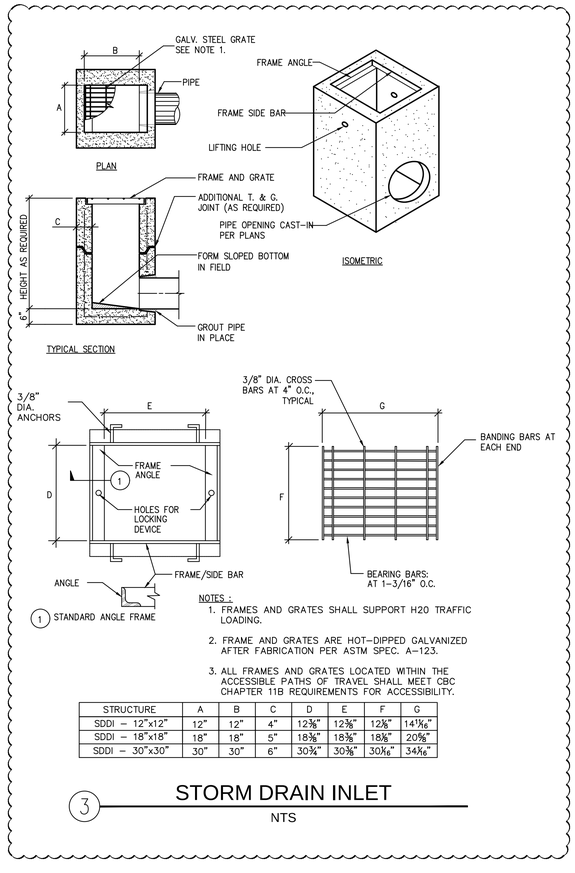




1 POP-UP DRAINAGE EMITTER NTS

2 ROOF DRAIN TO EMITTER DETAIL NTS



1 STANDARD ANGLE FRAME

NOTES :

1. FRAMES AND GRATES SHALL SUPPORT H20 TRAFFIC LOADING.
2. FRAME AND GRATES ARE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM SPEC. A-123.
3. ALL FRAMES AND GRATES LOCATED WITHIN THE ACCESSIBLE PATHS OF TRAVEL SHALL MEET CBC CHAPTER 11B REQUIREMENTS FOR ACCESSIBILITY.

STRUCTURE	A	B	C	D	E	F	G
SDDI – 12"x12"	12"	12"	4"	12 3/8"	12 3/8"	12 5/8"	14 1/16"
SDDI – 18"x18"	18"	18"	5"	18 3/8"	18 3/8"	18 5/8"	20 5/8"
SDDI – 30"x30"	30"	30"	6"	30 3/4"	30 3/8"	30 1/16"	34 1/16"

3 STORM DRAIN INLET NTS

LEGEND

100	PROPOSED MAJOR CONTOUR
99	PROPOSED MINOR CONTOUR
FF XX.XX	ELEVATION LABEL: AC: ASPHALT CONCRETE CC: CONCRETE EX: EXISTING FL: FLOW LINE GR: GRATE TC: TOP OF CURB
	FLOW LINE
	GRADE BREAK LINE
	LIMIT OF WORK

GRADING NOTES

1. PROPOSED SITE PLAN HAS BEEN SCREENED FOR CLARITY.
2. GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO CONFORM TO THE LINES, GRADES, SECTIONS, AND DIMENSIONS AS SET FORTH ON THESE PLANS. GRADED AREAS SHALL CONFORM TO THE VERTICAL ELEVATIONS SHOWN WITHIN TOLERANCE OF ONE-TENTH OF A FOOT IN LANDSCAPED AREAS AND TWO-HUNDREDTHS OF A FOOT IN HARDSCAPED OR PAVED AREAS. WHERE GRADED AREAS DO NOT CONFORM TO THESE TOLERANCES, THE CONTRACTOR SHALL BE REQUIRED TO DO CORRECTIVE GRADING, AT NO EXTRA COST TO THE OWNER.
4. CONTRACTOR SHALL TAKE CAUTION WHEN GRADING ADJACENT TO EXISTING BUILDINGS, TO PROTECT EXISTING FOUNDATIONS AND TO NOT TO COVER EXISTING VENTS.
5. RIMS OF UTILITY STRUCTURES SHALL BE ADJUSTED TO FINISHED GRADE IN AREAS OF RE-GRADING. IN PAVED AREAS, ELEVATION DIFFERENCE SHALL NOT BE MORE THAN ¼ INCH BETWEEN RIMS AND ADJACENT SURFACE.
6. SHALLOW UTILITIES MAY BE PRESENT. CONTRACTOR SHALL IDENTIFY AND LOCATE ALL UTILITIES IN PROJECT AREA PRIOR TO CONSTRUCTION.
7. WHERE IMPROVEMENTS INVOLVE ADA ACCESSIBILITY, CONTRACTOR'S ATTENTION IS DIRECTED TO THE FOLLOWING PARAMETERS THAT NEED TO BE MET WITH THE FINISHED CONSTRUCTION:
   a. WALKWAYS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 4.9% AND A MAXIMUM CROSS SLOPE OF 2%.
   b. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS, INCLUDING DIAGONAL.
   c. ADA PARKING STALLS AND STRIPED AISLE SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS, INCLUDING DIAGONAL.
   d. TRANSITIONS BETWEEN PROPOSED IMPROVEMENTS AND EXISTING CONDITIONS SHALL BE SMOOTH AND FREE OF ABRUPT CHANGES.

*** CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AT CONFORMS PRIOR TO FORMING AC WORK AND INFORM OWNER/ENGINEER.**

UTILITY NOTES

1. PROPOSED SITE PLAN HAS BEEN SCREENED FOR CLARITY.
2. RIM ELEVATIONS FOR EXISTING UTILITY STRUCTURES SHALL BE RAISED TO PROPOSED SURFACE ELEVATIONS. EXISTING STRUCTURES LOCATED WITHIN PROPOSED VEHICULAR ROADWAY, AN H-20 TRAFFIC-RATED TOP SHALL BE USED TO REPLACE THE EXISTING TOP OF THE ADJUSTED STRUCTURE.
3. PROTECT ALL EXISTING UTILITIES AND SITE FEATURES FROM BEING DAMAGED, UNLESS OTHERWISE NOTED. ALL UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED AT NO ADDITIONAL COST TO THE OWNER AND TO THE SATISFACTION OF THE ENGINEER.
4. THE EXISTING UTILITY LINES AND STRUCTURES SHOWN ON THESE PLANS ARE DERIVED FROM RECORD DATA, UNDERGROUND UTILITY SURVEY AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES AND STRUCTURES NOT SHOWN ON THIS PLAN, SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
5. EXISTING UNDERGROUND UTILITIES, INCLUDING THOSE MARKED UNKNOWN, ARE BASED ON SURVEY COMPLETED BY OTHERS AND PROVIDED TO BKF ENGINEERS FOR INCLUSION IN PLANS.
6. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES USING AN UNDERGROUND UTILITY LOCATOR PRIOR TO THE START OF CONSTRUCTION TO ENSURE EXISTING UTILITIES ARE NOT DAMAGED.
7. LENGTH OF PIPES ARE HORIZONTAL DISTANCES FROM CENTER TO CENTER OF STRUCTURES, ROUNDED TO THE NEAREST FOOT AND ARE SHOWN FOR ENGINEERING CALCULATIONS ONLY. CONTRACTOR SHALL ESTIMATE THEIR OWN PIPE LENGTHS PRIOR TO BIDDING.
8. UTILITY GRATES LOCATED IN PEDESTRIAN TRAFFIC AREAS SHALL MEET ADA ACCESSIBILITY REQUIREMENTS.
9. EXISTING PIPELINES MAY HAVE CATHODIC PROTECTION. CONTRACTOR SHALL ENSURE THAT ALL CONNECTIONS TO EXISTING PIPELINES ARE ELECTRICALLY COMMON WITH THE PIPE LINE.
10. STORM DRAIN PIPING SHALL BE PVC SDR-35 UNLESS OTHERWISE NOTED.

GRAPHIC SCALE
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LIONAKIS
1919 Nineteenth Street
Sacramento CA 95811
P 916.558.1900 F 916.558.1919
www.lionakis.com

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CIVIL
STATE OF CALIFORNIA

PROJECT
C-608 PHYSICAL EDUCATION & KINESIOLOGY RENOVATION
2600 MISSION BELL DRIVE
SAN PABLO, CA 95806

CLIENT
CONTRA COSTA COMMUNITY COLLEGE DISTRICT
500 COURT ST, MARTINEZ, CA 94553

ISSUED

MARK	DATE	DESCRIPTION
	2023/01/10	PR #76
1	2023/01/24	ADDENDUM #1

MANAGEMENT

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CLIENT PROJECT NO:	C-608
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AGENCY

FILE NO. 7-C1

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GRADING AND UTILITY PLAN

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