

WEST BAY
SANITARY DISTRICT
SAN MATEO COUNTY, CALIFORNIA

FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE
IMPROVEMENTS PROJECT
Menlo Park, California

ADDENDUM #3

WBSD Project No. 1762.0

This Addendum forms a part of the Contract Documents. All bidders submitting a bid to perform work on this project shall acknowledge receipt of this Addendum by completing the RECEIPT OF ADDENDA Specification Section 3.09, submitted as part of their bid. If a bidder does not acknowledge receipt of this Addendum on the Proposal submitted as part of their bid, the bidder will be deemed non-responsive or a non-responsible bidder and will be disqualified.

The Contractor's attention shall be directed to the following responses to questions received by West Bay Sanitary District before and during the second non-mandatory pre-bid meeting:

1. Specification Section 31-11-00 mentions Temporary Cofferdam location as shown on the plans. Please indicate where it is shown on the plans.
 - a. The temporary coffer dam alignment is not shown on the plans. The coffer dam alignment should follow the limit of grading on the outboard side of the existing levee on the northeast edge of the site, as directed by the Project Biologist.
2. Does the temporary cofferdam shoring follow the Salt Marsh Harvest Mouse (SMHM) Exclusion fence alignment in the ecotone area? Should the shoring be installed inboard or outboard of the SMHM Exclusion fence?
 - a. The temporary coffer dam alignment should follow the limit of grading on the outboard side of the existing levee on the northeast edge of the site, as directed by the Project Biologist. Salt Marsh Harvest Mouse (SMHM) Exclusion fence should tie-in to the terminal ends of the coffer dam and encircle the remainder of the facility to completely isolate the entire project site.
3. Can additional information about the temporary cofferdam be provided? The location of the temporary cofferdam is only described verbally in the specs and BCDC permit – 1491 LF as necessary to protect the 1.12-acre ecotone levee area.
 - a. The temporary coffer dam alignment should follow the limit of grading on the outboard side of the existing levee on the northeast edge of the site, as directed by the Project Biologist.

4. Is it the intent to install & remove the temporary cofferdam in year two of the project?
 - a. The purpose of the coffer dam is to isolate the work area from tidal inundation and help prevent sensitive species from entering the work area. The coffer dam should therefore be installed along the limit of grading on the outboard side of the existing levee on the northeast edge of the site and should remain in place until all work on the outboard side of the existing levee is complete. If the coffer dam is removed prior to completion of any work within the existing facility, then it should be replaced with SMHM exclusion fencing under the direction of the Project Biologist.

5. In the event where the sheet pile wall materials for the west outboard, NE inboard and NE outboard are not commercially available, and the work is unable to be completed by 1/14/2024 what is the contractor's remedy? Section B 8.17 states that this work has to be completed in the first year of construction. Would this be considered an unavoidable delay?
 - a. The construction of the sheet pile walls is desired to be installed by 1/14/2024 to help meet the project completion date and flood protect the west side of the site. In the event where sheet pile walls are not commercially available this would be considered an unavoidable delay however the project will still need to be completed by January 2025.

6. Standby time for biological or other non-contractor related delays?
 - a. Please refer to Section B 6.12 Extension of Time

7. Regarding Specification Section 31-00-00-16, can dewater liquids be disposed of at WBSD Plant? Is there any cost for water discharge?
 - a. The WBSD plant onsite is decommissioned. Dewater liquids can be disposed at Pond 2 at no additional cost for water discharge.

8. Section C1.31 General Construction info and Requirements, states the District will provide a SWPPP for the project. However, Technical Specification Section 02 41 00 Part 1.6.4 and Technical Specification Section 31 11 00 Part 1.3 B mentions Contractor shall prepare SWPPP. Please clarify who is providing the SWPPP.
 - a. The District will provide the SWPPP for the project.

9. Please define and clarify who provides the Project Proponent listed under Specification Part B Section 8.16.
 - a. The project proponent refers to WBSD, however it will be the responsibility of the Contractor to install and maintain any required buffer flagging or fencing under the direction of the Project's biologist.

10. Technical Specification Section 31 00 00 Part 1.11A states "trench and structure excavations have been designated as California Hazardous Waste". Does this mean all spoils from these excavations are hazardous waste and must be sent to hazardous landfills rather than reused on the site? We suggest a new unit price Bid Item for Cal-Haz soil haul/disposal if this is the case.
 - a. There are no known hazardous materials onsite, please disregard Technical Specification Section 31 00 00 Part 1.11 Hazardous Materials. Please see Technical Specification Section 31 00 00-Addendum 3

11. Technical Specifications Section 31 00 00 Part 3.1.A.6 indicates all soils should be assumed to be suitable for disposal at a Class II landfill, but 3.1B states all soil excavated from within the Project Area and transported along public streets must be done so by fully licensed hazardous waste haulers. These two statements conflict with each other – please clarify.
 - a. There are no known hazardous materials onsite, please disregard Technical Specification Section 31 00 00 Part 3.1 General. Please see Technical Specification Section 31 00 00-Addendum 3.
12. Please clarify the extent of concrete cap on West Outboard Sheet Pile Walls. Sheet C3.0 indicates “end of concrete cap” at STA 2+51.82. Where does the cap begin?
 - a. Concrete cap for the West Outboard Sheet Pile Walls will begin at West Outboard Sheet Pile start at STA 0+19.36, 12.14’ LT and end at STA 2+51.82, 20.36’ LT. Please see Sheet C3.0.
13. What is the order of work for the Marsh Road Over-excavation shown on detail 4 of C16.4? Is the west outboard sheet pile to be installed prior to over-excavation or after?
 - a. The west outboard sheet pile walls should be installed prior to over-excavation and placement of fill.
14. Following the capping of the 24-inch SSFM in the Marsh Road Over-Excavation Area, is the 24-inch SSFM to be removed? It seems to conflict with the sheet pile walls alignment.
 - a. After potholing the existing 24-inch and confirming that the sheet pile walls alignment conflicts with the abandoned 24-inch SSFM the pipe should be removed.
15. In Part C, section 1.05 it states that we are to provide a schedule including our proposed plan for pumping around (bypassing) sewer sections that are under construction. The only sewer line work shown on the drawings is a cap on a 24-inch SSFM. Are there other areas of sewer line work that are not shown?
 - a. No, there is no other sewer line work, the existing 24-inch SSFM is abandoned. Bypassing sewer sections is not needed for this project. Please see revised Spec Sheet C2.
16. Specification section 32 93 00 1.1A states plant material is to be provided by the District while Addendum 2 calls for contractors to provide plant material. Please advise.
 - a. Plant material is to be provided by the Contractor, other than the salvaged material from on-site.
17. Specification Part A 2.06 mentions Proposals shall be made on the Bidding Schedule prepared by the District without removal from the bound contract documents, can the Contractor remove the documents for PDF Editing, then reassemble into the bound binder for submittal?
 - a. Yes, Contractor can remove documents and reassemble into the bound binder for submittal.

18. Since we will have several additions to the bound documents as outlined in 2.28 – documents, are these to be simply inserted into the bound binder? Or can only the relative documents per Section 2.28 be submitted for the bid opening?
 - a. Contractors can add these into the bound binder for submittal.
19. The limits of the over excavation areas are not shown. Please provide limits.
 - a. Over excavation areas occur along Marsh Road and along Bedwell Bayfront Trails. Please see sheet C3.1 STA 1+00 and 2+00 Cross Sections.
20. Can the main entrance gate along Marsh road be closed for an extended period of time while over excavation and reconstruction is performed?
 - a. The main entrance gate along Marsh road can be closed as long as WBSD personnel are able to pass through and enter through the second entrance.
21. Sheet C17.4 which explains raising of a Leachate Structure is not provided. Please provide.
 - a. Please see City of Menlo Park provided plans attached. As Built or Record Drawings to be furnished upon Award of Contract.
22. Does this project have a Buy America/n clause?
 - a. Yes, under agreement with NFWF and in accordance with 2 C.F.R 200.322 there needs to be a domestic preference for procurements.
23. Can you provide a copy of the Pre-Bid Meeting sign in sheet?
 - a. Please see page 11 of Addendum 3 for sign in sheet.
24. Is irrigation of the seeded zone required, if so, can you provide an estimated frequency and quantity (inches)?
 - a. Irrigation is only required for salvaged plant material and containerized plantings within ecotone slope area. Irrigation of the 'Upland / Native Erosion Control Seed Mix' is not required.
25. Please clarify the zone to receive irrigation, per 32 84 00 1.3A sentence 3.
 - a. Please see response to question 24.
26. Where is the designated P.O.C for irrigation?
 - a. A new point of connection is not needed. Contractors can get a fire hydrant meter from Menlo Park Municipal Water. Please see Sheet C2.0 for the location of fire hydrant.
27. Please confirm the upland/native Erosion Control seed is to be hydroseeded only.
 - a. Confirmed. However, limited broadcast seeding by hand may be utilized in any locations where hydroseeding is infeasible, if approved by the Project Biologist / Restoration Ecologist prior to implementation.

28. Are weed whackers permitted during the mechanized equipment restriction period Feb-August 31? This is typically the time when invasive plants set seed, confirm hand removal only.
- a. Weed whackers are only permitted for use onsite for maintenance purposes but restricted outboard within the ecotone slope area. Weed whackers are not permitted during the mechanized equipment restriction period of Feb-August 31 outboard but may be utilized as needed outside of this restriction period. Only hand removal of invasive plants is permitted from Feb-August 31.
29. Is herbicide use permitted to control weeds?
- a. Any potential use of herbicide must be approved by the Project Biologist / Restoration Ecologist and permitting agencies prior to use. The contractor shall submit Safety Data Sheets for any proposed herbicide products for review and approval prior to use.
30. Please confirm the irrigation period is limited to 120 days and not the full 1-year plant establishment period.
- a. The Contractor is to maintain both the plants and the irrigation system as needed during a 1-year guarantee period after installation.
31. Please confirm pressure test is required on all lateral lines of the temporary irrigation system.
- a. Confirmed, pressure test is required on all lateral lines of the temporary irrigation system.
32. Is a permit required for the installation of the temporary irrigation system (32 84 00 1.3B) or is this only relevant to the new service?
- a. Please see response to question 26.
33. Please confirm the need for marking tape on irrigation laterals (these are to be above grade).
- a. Marking tape is not required for any above grade irrigation laterals.
34. Who is responsible for the permit cost with City of Menlo Park? Specification Section C1.21 Permit and Fees mention a City of Menlo Park permit fee of \$810 + 5.35% of construction costs.
- a. WBSD is currently coordinating with the City of Menlo Park. For bidding purposes, Contractors can assume District will be responsible for pulling encroachment permit and covering the fee associated with the encroachment permit.
35. The PG&E question in addendum 2 was not fully addressed, can you provide further clarification on who is responsible for working with PG&E to relocate these wires?
- a. WBSD is currently coordinating with PG&E and AT&T for the temporary relocation of the wires and potential changes to locations of poles to allow construction. For bidding purposes, Contractors can assume District will coordinate planning efforts however Contractor must coordinate work with PG&E and AT&T.

36. Can you provide as-builts and further information on proposed raising of gas leachate system facilities?

a. Please see response to question 21.

37. Who is responsible for paying the application fee of \$25,637 and the annual fee of \$2,297 for the Water Quality Control Board Permit?

a. WBSD will cover any permit fees listed in the environmental permits.

38. If California Ridgeway's rails and California black rails are not found can construction occur outside of September 1st through January 14th adjacent to marsh habitat?

a. No. The project's permits include a strict work window and any proposed work outside of that window would require re-initiation of the permitting process with the resource agencies.

39. Drying and exporting bay mud to a dump site will be very expensive. It may be WBSD best interest to conduct testing before hand to confirm whether bay mud can be reused. Plans and permits mention that bay mud will be reused however Addendum 1 mentions that Contractor should assume bay mud is being exported offsite. Please provide clarification.

a. Preliminary testing shows that bay mud fulfills requirements listed under the Draft Quality Assurance Project Plan (QAPP) for West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project.

40. What about dewatering Pond 3? (need to coordinate with WBSD)

a. Dewatering of Pond 3 can be disposed at Pond 2.

41. Can the brackish water needed for the excavated Bay Mud and salvaged native plants come from the Bay?

a. The contractor should schedule salvage operations to minimize the time between harvest and placement of native marsh plants. If the salvaged plant material is placed and the coffer dam is removed within two weeks of harvest, then the material may be watered with freshwater in lieu of brackish water.

If the harvested material will be maintained in an on-site nursery for more than two weeks, or if the coffer dam will remain in place for more than two weeks after placement, then occasional use of brackish water may be required to maintain salinity levels in the harvested soil. In this case the contractor must submit a plan for the proposed use of bay water for approval by the Project Biologist / Restoration Ecologist prior to implementation. The plan should include the anticipated frequency, duration, and flow requirements of the system, as well as a description of any pumps, screens, and piping that may be required to safely obtain water from the bay. This plan is anticipated to require approval by the resource agencies and should therefore be submitted at least 90 days prior to the scheduled installation of the system.

Once the salvaged plant material has been placed according to the planting plan and the coffer dam has been removed, the temporary irrigation system should utilize freshwater from a municipal source. Per the plans and specifications, the contractor is required to submit an irrigation plan to water both the salvaged marsh plants and

containerized plant material as needed for 2-3 years after installation. This plan must also be approved by the Project Biologist / Restoration Ecologist prior to implementation.

42. Is there any grading along the Western path with WBSD property?

- a. There will be minimal fill added to the western path to allow for drainage back into the ponds. Please see C3.1, C4.1 and C5.1.

43. Can the salvaged Bay Mud be stored in Pond 2 or Pond 3?

- a. Salvaged Bay Mud can be stored in Pond 3.

44. Is site preparation needed for hydroseeding areas?

- a. Yes, please refer to Technical Specification Section 32 92 91.16 Hydroseeding Part 3.1.D Site Preparation.

45. Is there a Mitigation Monitoring plan?

- a. Adaptive Management and Monitoring Plan was provided as part of the Appendix in the Bid Specifications.

46. Can the Contractor choose to use all containerized plant material in lieu salvaging the Salicornia?

- a. No. The Contractor is required to salvage and transplant existing Salicornia plant material from the project site under the direction of the Project Biologist. Supplemental containerized plant material may only be utilized if there is insufficient existing Salicornia plant material on-site. In that event the contractor may contact the on-site Save the Bay nursery to determine the feasibility of growing additional Salicornia from on-site sources.

47. What is the on-center spacing of Salicornia required if using containerized material to supplement the planting effort?

- a. If there is insufficient existing Salicornia plant material on-site, supplemental containerized Salicornia plant material should have an on-center spacing of 2'.

48. Is there a Mitigation Monitoring and Reporting Plan for the revegetation? Specifically, the success criteria for the planting survivorship and weed cover during the 12 month establishment period.

- a. Yes, an Adaptive Management and Monitoring Plan (AMMP) has been developed for the project. Year 1 success criteria is based upon achieving 5-40% vegetative cover on the ecotone slope and at least 10% vegetative cover in the created marsh area. In addition, the 1-year success criteria include a requirement to achieve 0% cover of non-native cordgrass or perennial pepper weed, and less than 5% cover of any other invasive species. Please see AMMP provided in the Appendix of Bid Specifications.

49. Addendum 2 states seeds for container plants need to be sourced from within the watershed of the project site. Can you confirm seed/plant material collected from within the San Francisco Bay is, okay?
- a. All required seed/plant material should be obtained from sources that are as close as possible to project site within San Francisco Bay watershed. The Contractor shall submit plant order forms from native plant nurseries within the watershed for approval prior to purchase and installation of the plant material.
50. Would the District allow Hobas fiber glass reinforced polymer mortar pipe for any of the civil pipe 18" and larger?
- a. Currently, the pipe material is not listed in WBSD standard specifications for types of pipes permitted, FRP will not be allowed for any pipes 18" and larger.
51. Can an allowance for any City of Menlo Park Inspection /Support Costs be added to Bid Items?
- a. Please see response to question 34.
52. Can an allowance for PG&E Overhead High Voltage Relocation be added to Bid Items?
- a. Please see response to question 35.
53. Can a Deductive Alternate 01 – Reuse harvested bay mud be added to Bid Items?
- a. Preliminary testing shows that Bay Mud can be reused. Please see revised Bid Descriptions.
54. Can Deductive Alternate 02 – Reuse onsite stockpile for engineered fill be added to Bid Items
- a. Preliminary testing shows that Bay Mud can be reused. Please see revised Bid Descriptions.
55. Can Alternate 03 – Daily Delay Rate (nonworking days due to environmental factors outside of contractors control) be added to Bid Items.
- a. A Daily Delay Rate Bid Item will not be added to the bid items. Any daily delay rate will be negotiated with WBSD.
56. Clarify that the basis of award will be based on the total of the base bid plus the alternates.
- a. The basis of award will be based on the total base bid. There are no alternatives in the bid schedule.
57. Per the bid schedule, bid items 37, 38, 39, 40, and 41 are to be paid for by cubic yard (CY). How will these items be quantified?
- a. Items will be quantified based on a survey of final grades versus existing grades. It will be the responsibility of Contractor to provide as built survey.
58. Per the bid documents and as clarified in Addendum #2, "Bidders shall also consider excavated borrow material on-site from stockpiles to be used for any construction inboard of

the top of the bank". Does the District know the volume of the existing on-site borrow material? Is it to be assumed that all fill material required inboard of the top of the bank will be from the on-site borrow area and import of fill material for this portion of the levee will not be required?

- a. Existing on-site borrow material is approximately 5,200 CY. Fill from on-site borrow areas is not sufficient for the raising of grades inboard of the top of bank. Imported fill material will be needed.

59. Plan Sheet C 2.1 & C 3.0 shows the Power Pole Note #7 to Protect in Place. The overhead lines include High Voltage Power above and Communication Lines below. Will the Power & Communication lines be removed prior to installation of the Shoring in this area? If not removed, will the power lines and communications lines be de-energized prior to shoring removal?

- a. Please see response to question 35.

60. Regarding Sheet C 3.0 & C 16.4 – Utility Overexcavation and backfilling with Light Weight Fill. What is the 30" SSFM pipe, the 3" FM, 8" Water Line, and communication line material?

- a. The four pipes listed are existing pipes. The 30-inch SSFM pipe is Welded Steel, Cement Mortar Lined & Coated, the 3" FM is PVC, the 8" water line's pipe material is unknown and the communication line's pipe material is unknown.

61. Along the west side of levee, Sheet C3.0, 4.0 and 5.0, the levee is extremely narrow for heavy equipment access and shoring installation. Can the Levee be lowered to increase width? Will crane mats be required for support on the levee?

- a. Yes, the levee can be lowered but shall be approved and coordinated with WBSD. However, after the sheetpile installation the levee shall be raised back to existing grades. The need for crane mats is the Contractor's means and methods.

62. Will the length of the pile have any variation due to unknown geological conditions?

- a. Unknown geological conditions are not anticipated.

63. Sheet C7.1 & 8.1. Although the markings are very light and do not print out, they are visible on a large screen showing PDF. Most sections shown the flowable fill as a keyway for levee fill. Detail 6 shows Keyway flowable fill slough side (station 0+25) of sheet pile but not on far inboard (Station -0+50)? Detail 7 shows it only on inboard section (station 0+50) where there is no fill? Should this be Note 6?

- a. Please see revised sheets C8.1 and C9.1.

64. Can the Menlo Park Permit Fee be broken out in a separate line item?

a. Please see response to question 34.

65. Spec 31-00-00 Page 9 – Multiple references to “Mission Bay”? Please Clarify.

a. There are no known hazardous materials onsite, please disregard Technical Specification Section 31 00 00 Part 1.11 Hazardous Materials and Technical Specification Section 31 00 00 Part 3.1 General. Please see Technical Specification Section 31 00 00-Addendum 3.

66. Can bay water from dewatering be pumped into one of the ponds on-site?

a. Dewater liquids can be disposed of at Pond 2.

The Contractor’s attention is directed to the following modifications to the Contract Documents:

PLANS

REPLACE Pages C2.0 with C2.0 Addendum 3

REPLACE Pages C8.1 and C9.1 with C8.1 – Addendum 3 and C9.1 Addendum 3

SPECIFICATIONS

REPLACE Page A1 (Section A1 NOTICE REQUESTING BIDS) with Page A1 - Addendum 3. Added information about 1-year plant establishment maintenance period.

REPLACE Page A11 through A14 (Section A3.02 BIDDING SCHEDULE) with Page A11 – Addendum 3 through A14 – Addendum 3. Revised Bid Item 21- Inlet Capture Bag quantity from 6 to 9. Revised Bid Item 31- North-East Inboard Sheet Pile Walls – 37’ 6” unit from LS to LF and quantity from 1 to 1,127. Revised Bid Item 32- North-East Outboard Sheet Pile Walls – 44’ 6” unit from LS to LF and quantity from 1 to 1,290. Added Bid Item 47-Dewatering and Discharge. Added Bid Item 48-Raising City of Menlo Park’s Leachate Infrastructure.

REPLACE Page C2 (Section C1.05 SEQUENCE OF CONSTRUCTION) with Page C2 - Addendum 3. Removed sentence about sewer bypassing.

REPLACE Page C13 through C22 (Section C2.06 MEASUREMENT AND PAYMENT) with Page C13 – Addendum 3 through C23 – Addendum 3. Revised Bid Descriptions for Bid Item 7, 36, 37, and 40. Added Bid Descriptions for Bid Item 47 and 48.

REPLACE Technical Specifications 31 00 00 with Technical Specification 31 00 00 – Addendum 3. Removed sections with hazardous materials present.

WEST BAY SANITARY DISTRICT

Flow Equalization and Resource Recovery Facility Levee Improvements Project
(1762.0)

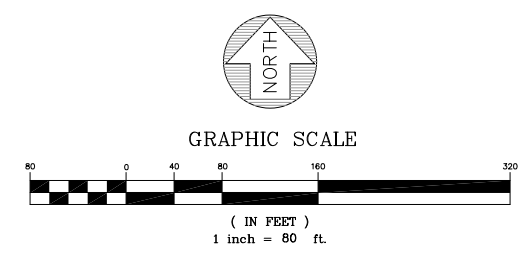
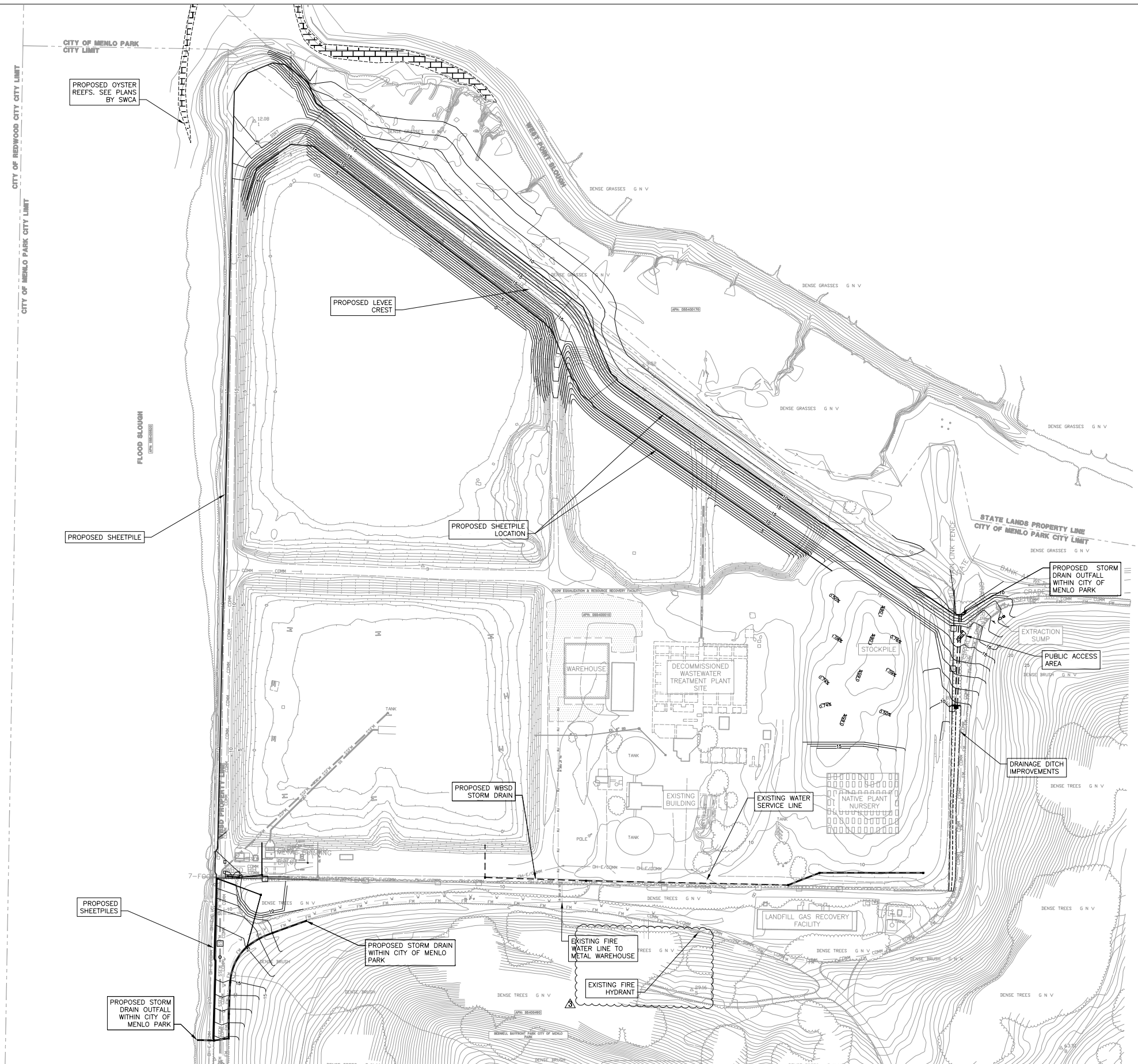
Pre-Bid Conference Documented Attendance

Location: District's Flow Equalization and Resource Recovery Facility

Date/Time: August 2, 2023, 11:00 a.m. – 12:00 a.m.

<u>NAME</u>	<u>AGENCY/COMPANY</u>
<u>FARIBORZ HEYDARI</u>	<u>WBSD</u>
<u>YUTAIN LEI</u>	<u>WBSD</u>
<u>LORRAINE HTOO</u>	<u>F&L</u>
<u>FERNANDO MONROY</u>	<u>F&L</u>
<u>BEAU BLUME</u>	<u>ANVIL BUILDERS</u>
<u>TODD WILSON</u>	<u>GRANITE ROCK</u>
<u>JOHN GARCIA</u>	<u>GRANITE ROCK</u>
<u>CHUCK REIKEN</u>	<u>ANVIL BUILDERS</u>
<u>SCOTT SCHUMACHER</u>	<u>ANDERSON PACIFIC</u>
<u>PETE TIMMERMAN</u>	<u>PACIFIC STATES</u>
<u>DANNY PEASE</u>	<u>PACIFIC STATES</u>
<u>RYAN YARBROUGH</u>	<u>CONFLUENCE RESTORATION</u>
<u>BILL HALLECK</u>	<u>CITY OF MENLO PARK</u>

*** END OF ADDENDUM ***



DATE:	06/23/2023	06/23/2023	BID SET
SCALE:	AS NOTED	07/19/2023	▲ ADDENDUM 1
DESIGNED:	LFH & FYM	07/21/2023	▲ ADDENDUM 2
DRAWN:	FYM & MPM	08/11/2023	▲ ADDENDUM 3
CHECKED:	LFH		
PROJ. ENGR:	RJL		
BY	DATE	DESCRIPTION OF REVISIONS	APP'D

FL FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 150 Executive Park Blvd #4200 • San Francisco, CA 94134
 (415)534-7070 • www.freyerlaureta.com

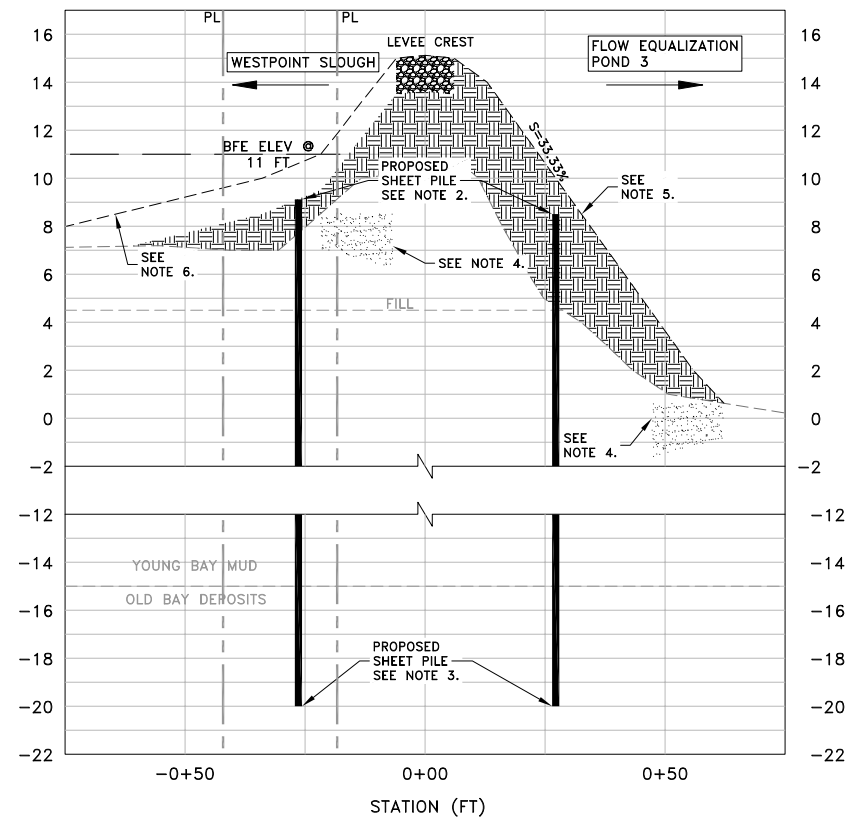
WEST BAY
 SANITARY DISTRICT
 SAN MATEO COUNTY
 PROJECT No. 1762.0



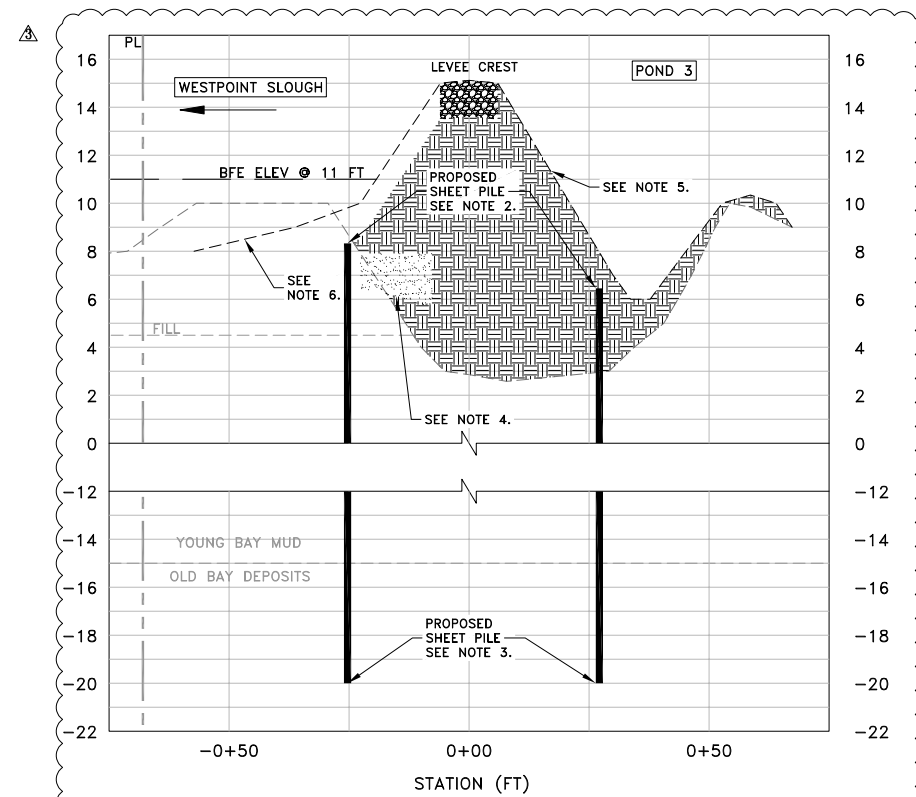
FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE IMPROVEMENTS PROJECT
 SITE PLAN
 MENLO PARK, CALIFORNIA

SHEET
C2.0
 JOB NO.
1079

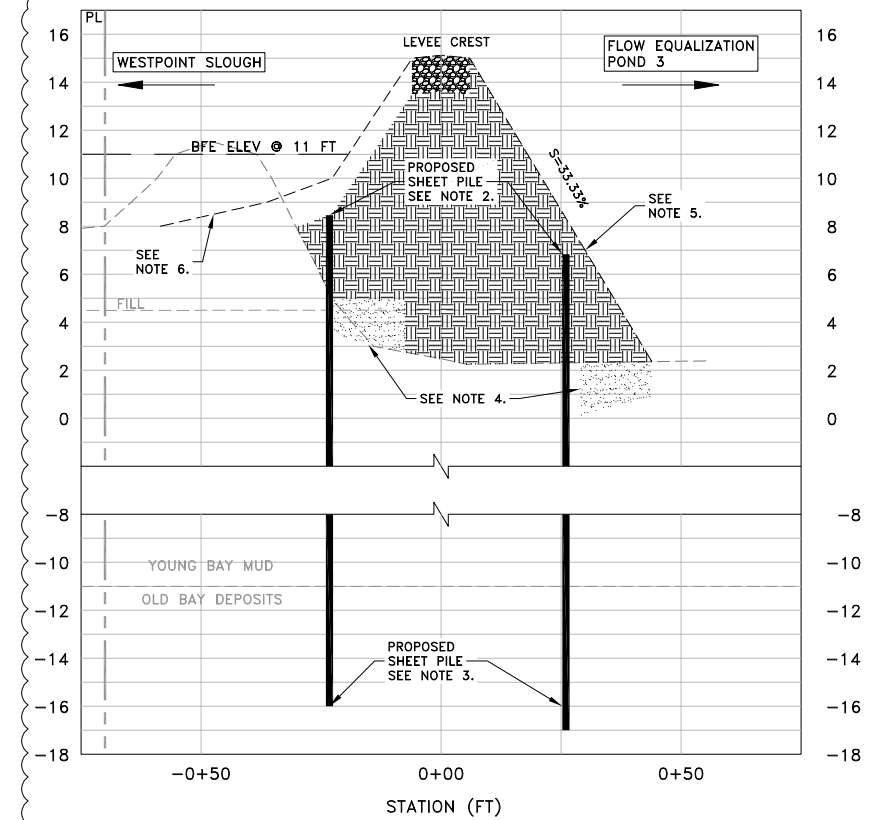
24/00000001 1800 075 Line 2023 Project 1762.00 02.0 Site Plan.dwg



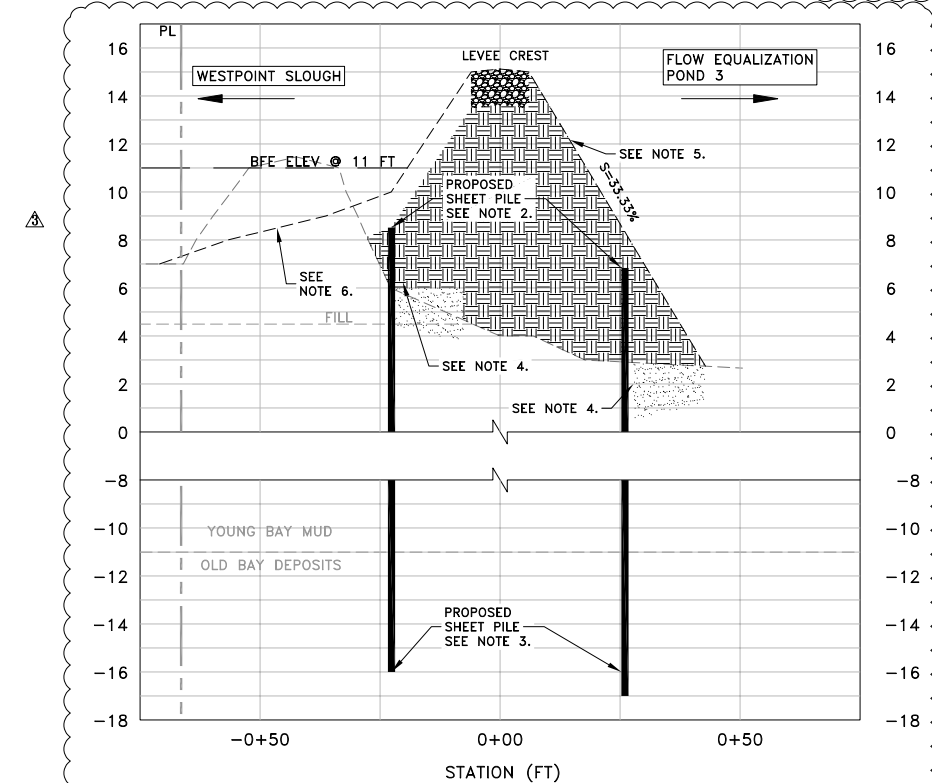
6 STA 46+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"



7 STA 47+00 CROSS SECTION
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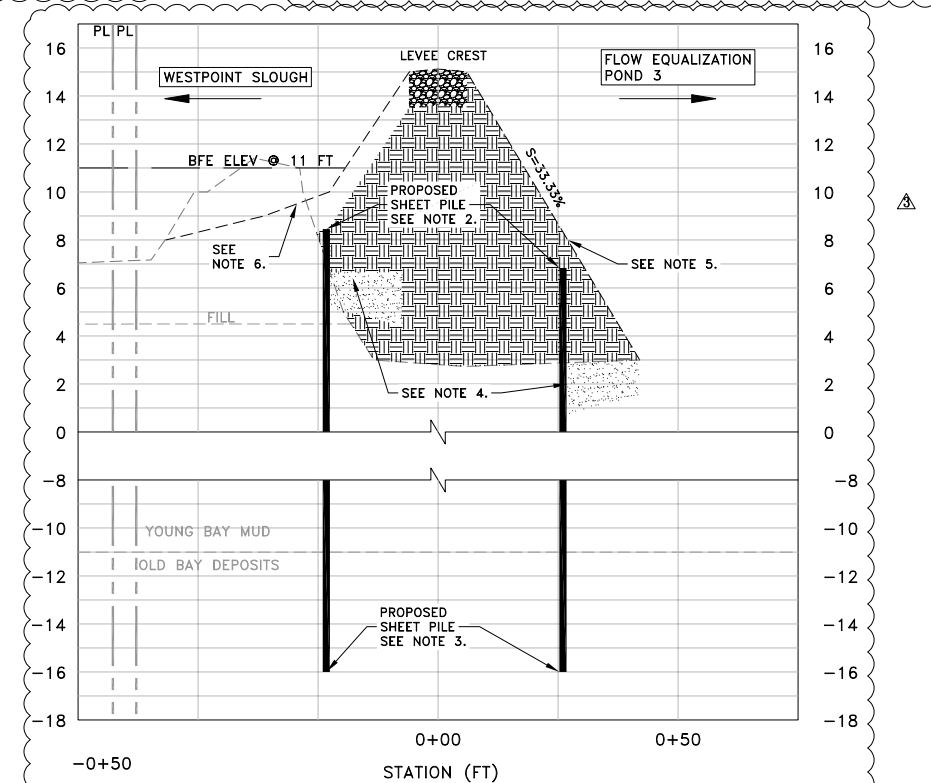


8 STA 48+00 CROSS SECTION
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9 STA 49+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"

- NOTES:
- 1) SHEET PILE WALLS WILL BE OFFSET AT A MINIMUM OF 20- FEET FROM THE OUTBOARD EDGE OF THE LEVEE CREST.
 - 2) TOP OF SHEET PILE WALLS WILL BE BURIED WITH A MAXIMUM COVER OF 18-INCHES.
 - 3) SEE STRUCTURAL DRAWINGS FOR NORTH-EAST OUTBOARD AND NORTH-EAST INBOARD SHEET PILE WALL DEPTHS.
 - 4) LIGHT WEIGHT FLOWABLE FILL TO INITIATE FILL SLOPE. MINIMUM OF 18" DEEP, 15' WIDE AT A SLOPE OF 5% DOWNWARD TOWARD LEVEE CREST.
 - 5) ENGINEERED FILL SHALL CONSIST OF IMPORTED OR ON-SITE SOIL THAT FULFILL REQUIREMENTS LISTED IN THE SPECIFICATIONS.
 - 6) SEE SWCA PLANS FOR PROPOSED ECOTONE SLOPE, PROPOSED TIDAL MARSH CREATION AREA AND TOP SOIL FILL.
 - 7) SEE STRUCTURAL DRAWINGS FOR SHEET PILE WALL DETAILS.
 - 8) LEVEE ROAD SHALL BE 18-INCHES OF CLASS II AGGREGATE BASE.



10 STA 50+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"

DATE: 06/23/2023	06/23/2023	BID SET	
SCALE: AS NOTED	07/19/2023	ADDENDUM 1	
DESIGNED: LFH & FYM	07/21/2023	ADDENDUM 2	
DRAWN: FYM	08/11/2023	ADDENDUM 3	
CHECKED: LFH			
PROJ. ENGR: RJL			
BY	DATE	DESCRIPTION OF REVISIONS	APP'D



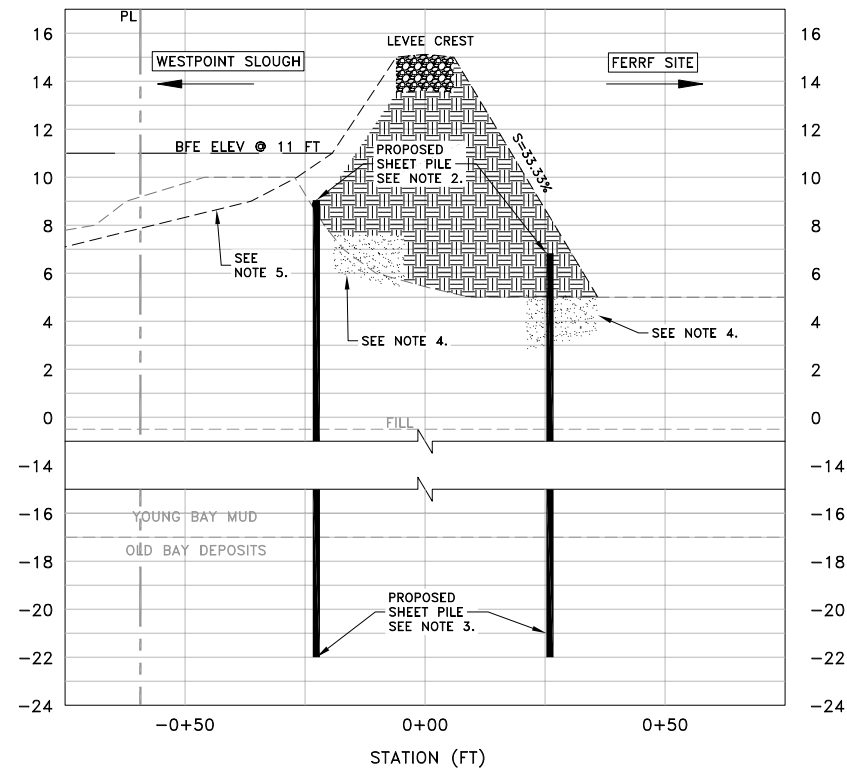
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SAN MATEO COUNTY
PROJECT No. 1762.0

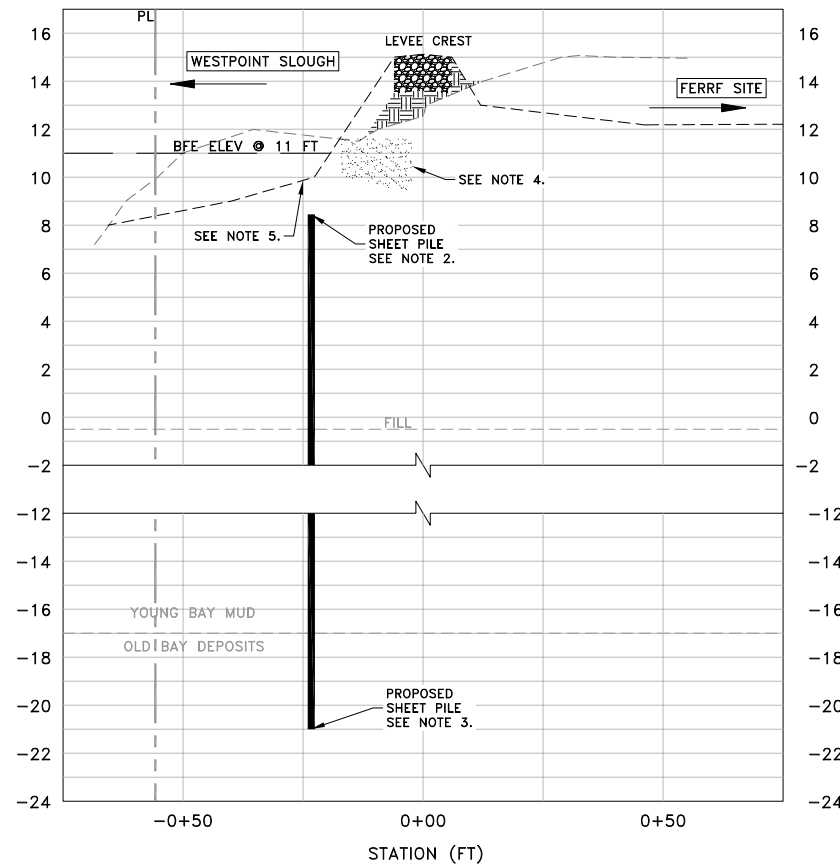


FLOW EQUALIZATION AND RESOURCE RECOVERY
FACILITY LEVEE IMPROVEMENTS PROJECT
LEVEE CREST CROSS SECTIONS
STA 46+00 - STA 50+00
MENLO PARK, CALIFORNIA

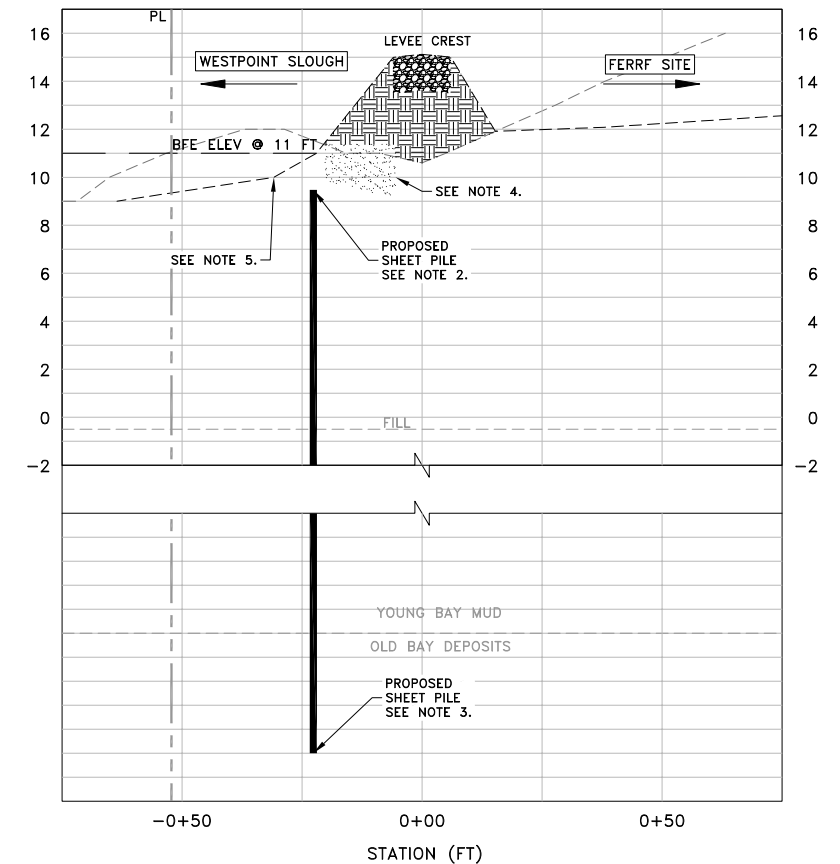
SHEET
C8.1
JOB NO.
1079



11 STA 51+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"



12 STA 52+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"



13 STA 53+00 CROSS SECTION
SCALE: H: 1" = 20'-0" V: 1" = 4'-0"

NOTES:

- 1) SHEET PILE WALLS WILL BE OFFSET AT A MINIMUM OF 20- FEET FROM THE OUTBOARD EDGE OF THE LEVEE CREST.
- 2) TOP OF SHEET PILE WALLS WILL BE BURIED WITH A MAXIMUM COVER OF 18-INCHES.
- 3) SEE STRUCTURAL DRAWINGS FOR NORTH-EAST OUTBOARD AND NORTH-EAST INBOARD SHEET PILE WALLS DEPTHS.
- 4) LIGHT WEIGHT FLOWABLE FILL TO INITIATE FILL SLOPE. MINIMUM OF 18" DEEP, 15' WIDE AT A SLOPE OF 5% DOWNWARD TOWARD LEVEE CREST.
- 5) ENGINEERED FILL SHALL CONSIST OF IMPORTED OR ON-SITE SOIL THAT FULFILL REQUIREMENTS LISTED IN THE SPECIFICATIONS.
- 6) SEE SWCA PLANS FOR PROPOSED ECOTONE SLOPE, PROPOSED TIDAL MARSH CREATION AREA AND TOP SOIL FILL.
- 7) SEE STRUCTURAL DRAWINGS FOR SHEET PILE WALL DETAILS.
- 8) LEVEE ROAD SHALL BE 18-INCHES OF CLASS II AGGREGATE BASE.

DATE:	06/23/2023	06/23/2023	BID SET
SCALE:	AS NOTED	07/19/2023	▲ ADDENDUM 1
DESIGNED:	LFH & FYM	07/21/2023	▲ ADDENDUM 2
DRAWN:	FYM	08/11/2023	▲ ADDENDUM 3
CHECKED:	LFH		
PROJ. ENGR:	RJL		
BY	DATE	DESCRIPTION OF REVISIONS	APP'D



150 Executive Park Blvd #4200 - San Francisco, CA 94134
(415)534-7070 - www.freyerlaureta.com

WEST BAY
SANITARY DISTRICT
SAN MATEO COUNTY

PROJECT No. 1762.0



**FLOW EQUALIZATION AND RESOURCE RECOVERY
FACILITY LEVEE IMPROVEMENTS PROJECT**
LEVEE CREST CROSS SECTIONS
STA 51+00 - STA 53+00
MENLO PARK, CALIFORNIA

SHEET
C9.1
JOB NO.
1079

SECTION A1 - NOTICE REQUESTING BIDS**WEST BAY SANITARY DISTRICT PROJECT
FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE IMPROVEMENTS
PROJECT**

Sealed proposals for the FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE IMPROVEMENTS PROJECT will be received at the West Bay Sanitary District, 500 Laurel Street, Menlo Park, California 94025 until **2:00 PM on Thursday, August 17, 2023** at which time they will be publicly opened and read. Bids shall be labeled "West Bay Sanitary District, Proposal for "FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE IMPROVEMENTS PROJECT".

This project includes the flood protection of the District's Flow Equalization and Resource Recovery Facility (FERRF) against the FEMA floodplain and Sea Level Rise. The FERRF is a District multi-use facility that provides temporary storage of wastewater during wet weather events, storage of District vehicles and equipment, and includes a nursery for Save the Bay vegetation to be used in restoration projects. The Work will include the furnishing of all labor, materials and equipment, and other appurtenances for the raising of grades along Marsh Road, Bedwell Bayfront Park trails, levee crest and FERRF access roads, raising of existing vaults/manholes, construction of the living shoreline, valley gutter, headwalls, oyster reef structures, public access area, installation of sheet pile walls, of storm drainage infrastructure, of fencing, of erosion control measures, of temporary irrigation system, planting, and of erosion control seed mix and improvements to an existing drainage ditch as indicated on the project plans. The project is to start September 2023 and be completed by January 31, 2025, in conformance with permits and grant obtained for the project. The plant establishment maintenance period will extend until January 31, 2026 or 1-year after planting, whichever comes first.

The contract documents may be inspected at the office of the West Bay Sanitary District, 500 Laurel St, Menlo Park, California 94025; San Francisco Builders Exchange, Attn: Deanna Johnson, 850 So. Van Ness Avenue, San Francisco, California 94110; Peninsula Builders Exchange, Attn: Andrea Nettles, 282 Harbor Blvd, Belmont, California 94002; Santa Clara Builders Exchange, Attn: Kanani Fonseca, 400 Reed Street, Santa Clara, California 95050; Bay Area Builders Exchange Attn: Jeannie Kwan, 3055 Alvarado Street, San Leandro, California 94577; Construction Bidboard Incorporated, Attn: Plan Room, 11622 El Camino Real, Suite 100, San Diego, CA 92130.

Questions shall be directed in writing to:

Fariborz Heydari, P.E.

Project Manager

Email: fheydari@westbaysanitary.org

Copies of the Contract Documents may be obtained at the office of the West Bay Sanitary District upon payment of a check or money order in the amount of \$60.00 for each set. The check or money order must be issued to the West Bay Sanitary District. All payments are nonrefundable.

Pre-bid meeting will be held at **10:00 am on Tuesday, July 11, 2023 and 11:00 am on Wednesday, August 2, 2023** at the project site, the District's Flow Equalization and Resource Recovery Facility at the north end of Bedwell Bayfront Park in Menlo Park.

Each bid proposal shall be accompanied by a certified or cashier's check or a proposal guaranty bond payable to the order of the West Bay Sanitary District in an amount not less than ten percent (10%) of the amount of the bid as a guaranty that the bidder will execute the contract if it be awarded to him in conformity with the proposal. The successful bidder will be required to furnish a performance bond in an amount not less than one

3.02 BIDDING SCHEDULE

Item numbers contained in this schedule are intended for cross reference to Section B7 and C2.06 “Measurement and Payment” of the project specifications. The unit price for an individual item may vary depending upon the project under which it is included.

WEST BAY SANITARY DISTRICT

FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE IMPROVEMENTS PROJECT

BASE BID SCHEDULE

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
General Bid Items					
1.	Mobilization/Demobilization (Not to exceed 5% of the total bid price)	LS	1	\$ _____	\$ _____
2.	Construction Staking & Survey	LS	1	\$ _____	\$ _____
3.	Traffic Control	LS	1	\$ _____	\$ _____
4.	Dust Control	LS	1	\$ _____	\$ _____
5.	Site Preparation and Demolition	LS	1	\$ _____	\$ _____
6.	Salt Marsh Harvest Mouse Exclusion Fence	LF	2,500	\$ _____	\$ _____
7.	Project Signage	EA	2	\$ _____	\$ _____
Civil and Structural Bid Items					
8.	Utility Crossing	EA	6	\$ _____	\$ _____
9.	Pothole Utilities	EA	8	\$ _____	\$ _____
10.	Easement/ Landscape Restoration	LS	1	\$ _____	\$ _____
11.	WBSD and Menlo Park Excavation, Fill and Grading	LS	1	\$ _____	\$ _____

12.	Sheeting / Shoring / Bracing	LS	1	\$ _____	\$ _____
13.	Pavement Restoration – Menlo Park Right of Way	SF	12,200	\$ _____	\$ _____
14.	Pavement Restoration - WBSD	SF	1,700	\$ _____	\$ _____
15.	Drainage Ditch Improvements	LF	270	\$ _____	\$ _____
16.	Install 8-inch PVC C900 Stormwater Pipe by Open Trench	LF	242	\$ _____	\$ _____
17.	Install 18-inch min ID HDPE Stormwater Pipe by Open Trench	LF	280	\$ _____	\$ _____
18.	Install 18-inch PVC 900 Stormwater Pipe by Open Trench	LF	688	\$ _____	\$ _____
19.	Install 20-inch PVC 900 Stormwater Pipe by Open Trench	LF	266	\$ _____	\$ _____
20.	Catch Basins	EA	17	\$ _____	\$ _____
21.	Inlet Capture Bag	EA	9	\$ _____	\$ _____
22.	Headwall	LS	1	\$ _____	\$ _____
23.	Winged Flared Headwall	LS	1	\$ _____	\$ _____
24.	Inline Check Valve for 8” PVC C900 Stormwater Pipe	EA	1	\$ _____	\$ _____
25.	Inline Check Valve for 18” Min ID HDPE Stormwater Pipe	EA	1	\$ _____	\$ _____
26.	Inline Check Valve for 18” PVC C900 Stormwater Pipe	EA	1	\$ _____	\$ _____

27.	Inline Check Valve for 20" PVC C900 Stormwater Pipe	EA	2	\$ _____	\$ _____
28.	Embedded Rock Energy Dissipator	LS	1	\$ _____	\$ _____
29.	Stormwater Swale and Valley Gutter	LS	1	\$ _____	\$ _____
30.	West Outboard Sheet Pile Walls – 32' to 49'	LS	1	\$ _____	\$ _____
31.	North-East Inboard Sheet Piles Walls– 37' 6"	LF	1,127	\$ _____	\$ _____
32.	North-East Outboard Sheet Piles – 44' 6"	LF	1,290	\$ _____	\$ _____
33.	Sheet Pile Wall Strut Connection	EA	3	\$ _____	\$ _____
34.	Chain Link Fence	LF	269	\$ _____	\$ _____
35.	Pedestrian Overlook	LS	1	\$ _____	\$ _____
36.	Readjusting Existing Utility Vaults, and Manhole	LS	1	\$ _____	\$ _____
Ecotone Slope/Living Shoreline Bid Items					
37.	Excavation – Bay Mud & Salvage Native Plant Harvest	CY	1,700	\$ _____	\$ _____
38.	Ecotone Slope / Living Shoreline Excavation	CY	2,610	\$ _____	\$ _____
39.	Fill – Engineered / Structural Fill for Ecotone Slope / Living Shoreline	CY	2,470	\$ _____	\$ _____
40.	Fill – Bay Mud	CY	1,370	\$ _____	\$ _____
41.	Fill – Topsoil Placement	CY	2,400	\$ _____	\$ _____
42.	Upland / Native Erosion Control Seed Mix	AC	1.23	\$ _____	\$ _____

- Installation of temporary irrigation plan
- Installation of oyster reef structures
- Installation of a headwalls
- Installation of bench and interpretative sign for public access area
- Installation of erosion control measures
- Installation of erosion control seed mix

1.03 CONSTRUCTION SCHEDULE

10 days prior to the Pre-Construction Conference to be scheduled by the District, the Contractor shall provide five copies of his construction schedule to the District. This schedule shall detail all items of work as described in the bid schedule and shall show the dates of start and completion for each item. Also within 5 working days after execution of contract, the contractor shall submit five copies of a plan of work.

The date of start of work shall be a maximum of 10 days after the date of Notice to Proceed.

For additional requirements regarding the construction schedule, refer to Article B6.03.

1.04 CONTRACTOR COORDINATION

The Contractor shall coordinate his work in the project area with other contractors and public utility agencies so as to minimize delays in the completion of the contract.

1.05 SEQUENCE OF CONSTRUCTION

The Contractor's attention is directed to the fact that certain items of work must be completed before others can begin. It is the sole responsibility of the Contractor to schedule the project so as to complete each stage of the work within the time specified in Section B8.04 "Time of Completion" herein.

The Contractor is hereby advised that sewage collection service to the existing residences or commercial facilities must not be interrupted during construction of this project. The existing sewer lines must continue in full operation to avoid violation of effluent discharge requirements. It is, therefore, essential that a construction schedule be established with the input and review of the District. The Contractor shall submit as part of his Construction Schedule under Article B6.03, a detailed time schedule showing his proposed sequence of construction. This schedule, along with other requirements of Article B6.03, shall be subject to review by the District.

1.06 SURVEYS

The Contractor is responsible for providing all necessary survey controls to properly locate the construction of underground piping, manholes, and other improvements.

The Contractor shall retain a licensed Surveyor or Civil Engineer as determined to be necessary by the Contractor to establish and from time to time adjust these controls.

All controls established shall be subject to the approval of the District. When requested by the District, the Contractor's surveyor shall perform additional verification checks or establish controls for construction. This work shall be at no additional cost to the District.

2.06 MEASUREMENT AND PAYMENT

The following items of work are included in this project. Item numbers have been assigned to provide a means of cross-referencing between this Section and the Bid Schedule.

Item 1 – Mobilization/Demobilization (Not to exceed 5% of total bid price)

Measurement and payment for this item shall be on a lump sum basis. Compensation for moving onto the site, establishing a corporation yard, permit application costs and bonding of the site, including dismantling and clean-up of corporation yard, shall be included in lump sum payment. The compensation shall not exceed 5% of the total bid price for each schedule, two-thirds of which shall be payment for mobilization and one-third for demobilization.

Item 2 – Construction Staking & Survey

Measurement and payment for this item shall be on a lump sum basis. The Contract lump sum price paid for this item shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work necessary to survey and install construction stakes.

Item 3 - Traffic Control

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for furnishing a complete Traffic Control Plan prepared by a Registered Traffic Engineer. The price bid shall also include all labor (including flagging costs and pilot car), all materials (including all stationary and portable signs, lights, traffic cones, and lane delineators), all tools, equipment and incidentals, and all work involved in placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of the traffic control system as shown on the approved Traffic Control Plan, the Standard Plans, "Proposed Public Access to Shoreline During Construction – Figure 1" prepared by Freyer & Laureta, Inc., maintaining or creating public paths that are impacted by construction within Bedwell Bayfront Park, and as specified in the CalTrans Standard Specifications, and these Special Provisions, as required by the agency having jurisdiction and as directed by the District and no additional compensation shall be allowed therefore. Payment for this item shall be based on the pro rata share of the work completed.

Item 4 – Dust Control

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for furnishing all labor, materials (including dust palliative binder), tools, equipment and incidentals and for doing all the work involved in developing and applying all water and/or dust palliative required for the work and for controlling dust resulting from the Contractor's operations, public traffic, wind, or other conditions at all times including Saturdays, Sundays, holidays and when ordered by the District, and no additional payment shall be made therefore. Payment for this item shall be based on the pro rata share of the work completed.

In addition, storm drainage inlets directly affected by construction shall be protected per ABAG requirements and this item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals in accordance with such requirements.

Item 5 – Site Preparation and Demolition

Measurement and payment for this item shall be on a lump sum basis. Payment for this item shall include but not limited to full compensation for furnishing all labor, tools, equipment, construction entrances/exits, installation and removal of temporary cofferdam required to construct the project, installation of erosion control measures, removal of existing storm drainage infrastructure, removal of existing sanitary sewer forcemain, removal of concrete, removal of any existing excess materials that may be encountered during construction activities, clearing and grubbing, preparing the staging area and incidentals and for doing all the work necessary to install the prepare the site for construction.

Item 6 – Salt Marsh Harvest Mouse Exclusion Fence

Measurement and payment for this item shall be on a per linear foot basis. Payment for this shall include full compensation for furnishing all labor, tools, equipment and incidentals and for doing all the work necessary to install the exclusion fencing and maintaining it through construction, including replacing any damaged sections.

Item 7 – Project Signage

Measurement and payment for this item shall be on a per each basis. Payment for this item shall include full compensation for all work, materials and appurtenances, stand, all City fees, and required safety barricades/devices for a 4' x 6' project sign with the following information:

**WEST BAY SANITARY DISTRICT
FLOW EQUALIZATION AND RESOURCE RECOVERY FACILITY LEVEE
IMPROVEMENTS PROJECT**

BOARD MEMBERS:

**Fran Dehn
David Walker
Roy Thiele-Sardiña
Edward P. Moritz
George Otte
General Manager:
Sergio Ramirez
Project Manager:
Fariborz Heydari**

CONTRACTOR NAME AND PHONE NUMBER

In Case of Emergency, please call (650) 321-0384.

Item 8 – Utility Crossings

Measurement and payment for this item shall be on a per each basis. Payment for this item shall include full compensation for furnishing all labor, tools, equipment and incidentals and for doing all the work necessary to cross under existing facilities and no additional payment shall be made therefore.

Where existing facilities are located in one trench, as herein defined, the Contractor shall be paid for one (1) crossing regardless of the number of facilities therein or the width of the trench. Existing facilities, including pipes and wires shall be considered as being in one trench whenever the exposed nearest point

of one facility is within two (2) feet of another exposed facility in an open trench. Where existing light standards are within trench limits, the contractor shall relocate the light standard to the satisfaction of the agency that has jurisdiction.

Item 9 - Potholing Utilities

Each item will be counted and payment for the actual number of potholes required and **approved** by the District. Potholing to locate laterals is not included in the item. Only **approved** potholes will be paid for.

Payment will be made at the unit price bid for each pothole. Payment shall include compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the potholing of utilities not on the project plans including: saw-cutting; the removal of surplus or unsuitable earth, pavement and concrete, excavation, backfilling and compacting, and all other tasks and costs incidental and necessary to complete the item.

Item 10–Easement/Landscape Restoration

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include the furnishing and installation of all materials, equipment, and labor necessary to the installation of hydroseeding inboard of the top of bank, along Marsh Road and within Bedwell Bayfront Park, replacement and restoration of all landscaped surfaces including but not limited to grass, bushes, and trails to the condition existing prior to the beginning of work or to a better condition or as directed by the District. Work shall also include proposed site grading. All work will be subject to the requirements of the jurisdiction, as specified by the District.

Item 11 –WBSD and Menlo Park Excavation, Fill and Grading

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include the furnishing and installation of all on-site and imported materials including but not limited to structural fill, lightweight flowable fill, Class II aggregate base, equipment, and labor necessary to raise the grades of levee improvements inboard of the outer edge of the top of levee within the FERRF, along Marsh Road, along and along Bedwell Bayfront Park’s Trail, excavate borrow material on-site inboard of top of bank, placement and compaction of borrow material on-site inboard of new top of bank, placement and compaction of imported material, placement of hydroseeding, placement of Class II aggregate base as shown on the plans, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 12 - Sheeting/ Shoring/ Bracing

Measurement and payment for this item shall be on a lump sum basis. Payment for this item shall include full compensation for all work, materials and appurtenances required for sheeting, shoring and bracing all trenching and excavation work five feet and deeper in accordance with California Labor Code Section 6707.

Item 13 – Pavement Restoration –Menlo Park Right of Way

Measurement and payment for this item shall be on a square foot basis. Payment for this item of work shall include the furnishing and installation of all materials, equipment, and labor necessary for the replacement and restoration of all paved surfaces including concrete, asphalt concrete, trials and pavement markings and striping at least to the condition existing prior to the beginning of work or to a better condition or as directed by the District and as shown on detail sheets. All work will be subject to

the City requirements and as specified and directed by the District. **Permanent pavement shall be placed at the end of each work week. No temporary asphalt will be allowed over the weekend.**

Payment shall be based on the unit price bid for: Pavement Restoration as shown on the Standard Trench Detail for paved areas in Menlo Park Right of Ways.

Item 14 – Pavement Restoration –WBSD

Measurement and payment for this item shall be on a square foot basis. Payment for this item of work shall include the furnishing and installation of all materials, equipment, and labor necessary for the replacement and restoration of all paved surfaces including concrete, and asphalt concrete at least to the condition existing prior to the beginning of work or to a better condition or as directed by the District and as shown on detail sheets.

Item 15 –Drainage Ditch Improvements

Measurement and payment for this item shall be on a linear foot basis. Payment for this item of work shall include full compensation for all labor, materials, tools, equipment, incidental, work and appurtenances required to improve existing drainage ditch as shown in plans and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 16 – Install 8-inch PVC C900 Stormwater Pipe by Open Trench

Measurement and payment for this item shall be on a per linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the installation of the new storm drainage pipe including: installing the new pipe; installing trace wire **and warning tape** as specified and detailed, connecting the pipes to the catch basins; excavation, disposal of surplus or unsuitable earth and pavement, backfilling and compacting the bedding material and structural backfill material; all television inspections, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 17 – Install 18-inch Min ID HDPE Stormwater Pipe by Open Trench

Measurement and payment for this item shall be on a per linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the installation of the new storm drainage pipe including: installing the new pipe; installing trace wire **and warning tape** as specified and detailed, connecting the pipes to the catch basins; excavation, disposal of surplus or unsuitable earth and pavement, backfilling and compacting the bedding material and structural backfill material; all television inspections, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 18 – Install 18-inch PVC C900 Stormwater Pipe by Open Trench

Measurement and payment for this item shall be on a per linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the installation of the new storm drainage pipe including: installing the new pipe; installing trace wire **and warning tape** as specified and detailed, connecting the pipes to the catch basins; excavation, disposal of surplus or unsuitable earth and pavement, backfilling and compacting the bedding material and structural backfill material; all television inspections, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 19– Install 20-inch PVC C900 Stormwater Pipe by Open Trench

Measurement and payment for this item shall be on a per linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the installation of the new storm drainage pipe including: installing the new pipe; installing trace wire **and warning tape** as specified and detailed, connecting the pipes to the catch basins; excavation, disposal of surplus or unsuitable earth and pavement, backfilling and compacting the bedding material and structural backfill material; all television inspections, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Items 20 – Catch Basins

Measurement and payment for these items shall be on a per each basis. Payment for this of work shall include full compensation for all work described and includes sawcutting; the removal of all surplus materials, removal and proper disposal of controlled density fill, proper materials for new catch basins, connection or reconnection of pipes entering or leaving catch basins (including sealing gasket), drop connections where required, channeling of flows at bottom of catch basins, adjustment of grate elevation to final grade (including raising to new overlay grade), backfill or cement slurry backfill, compaction and all other work, materials, tools and testing as specified, complete in place. Where new catch basins are to be installed, potholing and pipe locating shall also be included in the payment.

Item 21 – Inlet Capture Bag

Measurement and payment for these items shall be on a per each basis. Payment for this work shall include full compensation for all work described and includes both installation of the inline capture bag to the catch basins and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 22 – Headwall

Measurement and payment for this item is on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, excavation backfilling and compacting materials; concrete materials and installation, formwork, steel reinforcing, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 23 – Winged Flared Headwall

Measurement and payment for these items shall be on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, excavation backfilling and compacting materials; concrete materials and installation, formwork, steel reinforcing, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 24 –Inline Check Valve for 8” PVC C900 Stormwater Pipe

Measurement and payment for these items shall be on a per each basis. Payment for this item of work shall include full compensation for all work described and includes both installation of the inline check valve to the 8” PVC C900 Stormwater Outfall and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 25 – Inline Check Valve for 18” Min ID HDPE Stormwater Pipe

Measurement and payment for these items shall be on a per each basis. Payment for this item of work shall include full compensation for all work described and includes both installation of the inline check valve to the 18” Min ID HDPE Stormwater Outfall and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 26 – Inline Check Valve for 18” PVC C900 Stormwater Pipe

Measurement and payment for these items shall be on a per each basis. Payment for this item of work shall include full compensation for all work described and includes both installation of the inline check valve to the 18” PVC C900 Stormwater Outfall and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 27 – Inline Check Valves for 20” PVC C900 Stormwater Pipe

Measurement and payment for these items shall be on a per each basis. Payment for this item of work shall include full compensation for all work described and includes both installation of the inline check valve for the 20” PVC C900 Stormwater Outfalls and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 28 – Embedded Rock Energy Dissipator

Measurement and payment for these items shall be on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, excavation, backfilling and compacting materials; rock materials and installation, concrete materials, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 29 – Stormwater Swale and Valley Gutter

Measurement and payment for these items shall be on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, excavation backfilling and compacting materials; concrete materials and installation, formwork, steel reinforcing, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 30 – West Outboard Sheet Pile Walls 32’ to 49’

Measurement and payment for these items shall be on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, welding, pile driving, assembly of sheet pile walls; concrete materials, formwork, steel reinforcing and installation of concrete caps outside of FERRF Facility; and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 31 – North-East Inboard Sheet Pile Walls 37’-6”

Measurement and payment for these items shall be on a linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, welding, pile driving, assembly of sheet pile walls; and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 32 – North-East Outboard Sheet Pile Walls 44’-6”

Measurement and payment for these items shall be on a linear foot basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, welding, pile driving, assembly of sheet pile walls; and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 33 – Sheet Pile Wall Strut Connections

Measurement and payment for these items shall be on a per each strut connection from the buried inboard sheet pile wall to the buried outboard sheet pile wall basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, welding, assembly of strut connections, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 34 – Chain Link Fencing and Gates

Measurement and payment for these items shall be on a per linear foot for temporary and permanent fencing shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all work involved in placing concrete and assembling the structure, and securing the premises and site from trespass during new wall construction as shown on the plans, specified in the Manufacturer’s Specifications, Standard Specifications and these Technical Specifications.

Item 35 – Pedestrian Overlook

Measurement and payment for these items shall be on a lump sum basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the mobilization and demobilization, excavation backfilling and compacting materials; concrete materials and installation, formwork, steel reinforcing, and installation of the bench onto the proposed concrete pad, installation of interpretive sign onto the proposed concrete pad, and costs incidental and necessary to complete the item as specified herein.

Item 36– Readjusting Existing Utility Vaults, and Manhole

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include the furnishing and installation of all materials, equipment, work and appurtenances for the raising of finished grade for existing utility vaults, manhole and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 37 – Excavation of Bay Mud & Salvage Native Plant Harvest

Measurement and payment for this item shall be on a cubic yard basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the excavation of Bay Mud within the ecotone slope/ living shoreline area outboard of the top of bank, removal and salvaging of native plants, storing Bay Mud onsite for reuse and irrigation of Bay Mud and Salvaged Native Plants. Any bay mud not reused in Item 40 shall be dried and stockpiled onsite.

Item 38 – Ecotone Slope / Living Shoreline Excavation

Measurement and payment for this item shall be on a cubic yard basis. Payment for this item shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the excavation of soil within ecotone slope / living shoreline area outboard of the new top of bank, drying out of material and storing fill on-site and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 39 – Fill – Engineered / Structural Fill for Ecotone Slope / Living Shoreline

Measurement and payment for this item shall be on a cubic yard basis. Payment for this item of work shall include full compensation for all labor, import of fill material that fulfill Quality Assurance Project Plan for West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project requirements, tools, equipment, incidentals, work and appurtenances required to add imported fill material in the Bay to construct the ecotone slope / living shoreline area outboard of the new top of bank and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 40 – Fill – Bay Mud

Measurement and payment for this item shall be on a cubic yard basis. Payment for this item of work shall include full compensation for all labor, tools, equipment, incidentals, work and appurtenances required to add onsite excavated Bay Mud material into the Bay to construct the ecotone slope / living shoreline area outboard of the top of bank and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 41 – Fill – Topsoil Placement

Measurement and payment for this item shall be on a cubic yard basis. Payment for this item of work shall include full compensation for all labor, imported material that fulfill Quality Assurance Project Plan for West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project requirements, tools, equipment, incidentals, testing under Quality Assurance Project Plan for West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project, work and appurtenances required to add 18” of imported top soil material to construct the ecotone slope / living shoreline area outboard of the top of bank and all other tasks and costs incidental and necessary to complete the item as specified herein

Item 42 – Upland / Native Erosion Control Seed Mix

Measurement and payment for this item shall be on an acre basis. Payment for this item of work shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for placement of erosion control seed mix within the upland/native areas of the ecotone slope/living shoreline and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 43 – Oyster Reef Structures

Measurement and payment for this item shall be on a per each basis. Payment for this item of work shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required to install oyster reef structures and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 44 – Planting & Irrigation System

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for all labor, materials, tools, equipment, incidentals, testing, work and appurtenances required for planting and the design and installation of the temporary irrigation system (including new service) and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 45 – Soil Amendments

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for all labor, materials, tools, equipment, incidentals, work and appurtenances required for the installation of any material that is applied to the top soil to improve soil properties for plant growth and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 46 – 1-Year Plant Establishment Period

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for all labor, materials, replacement of plants, tools, equipment, incidentals, work and appurtenances required for any plant maintenance needed to keep the plants alive for 1-year after completion of planting, and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 47 – Dewatering and Discharge

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include full compensation for all labor, materials, replacement of plants, tools, equipment, incidentals, work and appurtenances required for dewatering during any excavation, prior to and during the construction of ecotone slope, discharging water into Pond 2 and all other tasks and costs incidental and necessary to complete the item as specified herein.

Item 48– Raising City of Menlo Park’s Leachate Infrastructure

Measurement and payment for this item shall be on a lump sum basis. Payment for this item of work shall include the furnishing and installation of all materials, equipment, work and appurtenances for the raising of the City of Menlo Park’s Leachate Infrastructure and all other tasks and costs incidental and necessary to complete the item as specified herein.

No adjustment of the Contract unit price will be made for any increase or decrease in the quantity of Bid Items 6 (Salt Marsh Harvest Mouse Exclusion Fence); 7 (Project Signage); 8 (Utility Crossing); 9 (Pothole Utilities); 13 (Pavement Restoration – Menlo Park Right of Way); 14 (Pavement Restoration – WBSD); 15 (Drainage Ditch Improvements); 16 -19 (Stormwater Pipe Installation); 20 (Catch Basins); 21 (Inlet Capture Bag); 22 (Headwall); 23 (Winged Flared Headwall); 24 - 27 (Inline Check Valves); 31 (North-East Inboard Sheet Pile Walls); 32 (North-East Outboard Sheet Pile Walls); 33 (Sheet Pile Wall Strut Connections); 34 (Chain Link Fence and Gate); 37 (Excavation of Bay Mud & Salvage Native Plant Harvest); 38 (Ecotone Slope / Living Shoreline Excavation); 39 (Fill -Engineered / Structural Fill for Ecotone Slope / Living Shoreline); 40 (Fill- Bay Mud); 41 (Fill-Topsoil Placement); 42 Upland / Native Erosion Control Seed Mix; 43 (Oyster Reef Structures).

SECTION C3 – TECHNICAL SPECIFICATIONS

SECTION 31 00 00 – Addendum 3
EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes (but is not necessarily limited to) preparation of subgrade zones to the lines and grades indicated on the Drawings and as described herein.
- B. Proper means of safety are to be practiced during these operations including, but not limited to, worker safety, utility locating, and dust control.
- C. Upon completion and acceptance by the Owner's Agent of demolition, earthwork operations may proceed.
- D. Geotechnical
 - 1. Preparing, compacting and grading of all surface, base and subbase course for roads, trails and levee.
 - 2. Placing and compacting utility trench backfill.
 - 3. Preventing dust.
 - 4. Staking and Layout.

1.2 REFERENCE STANDARDS AND DOCUMENTS

- A. BAGG Engineers, Geotechnical Engineering Investigation, Living Shoreline Cut and Fill Analysis, Levee Design Project, West Bay Sanitary District, Menlo Park, California, December 15, 2020.
- B. BAGG Engineers, Geotechnical Memorandum, Flow Equalization and Resource Recovery Facility Levee Improvement and Bayfront Recycled Water Facility Project, West Bay Sanitary District, Menlo Park, California.
- C. Design standards and standard details of the City of Menlo Park, Department of Public Works, Latest Edition.
- D. Crawford & Associates, Inc., Geotechnical Memorandum, WBSD Flow Equalization and Resource Recovery Facility Improvements Project Menlo Park, California.
- E. American Society for Testing and Materials (ASTM): ASTM D1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m).
- F. California Regional Water Quality Control Board (RWQCB), Draft Technical Reference Document, Characterization and Reuse of Soil from Multiple Sources for Maintenance of Levees Adjacent to Aquatic Environments.
- G. SWCA Environmental Consultants, Quality Assurance Project Plan for the West Bay Sanitary

District Flow Equalization and Resource Recovery Facility Flood Protection Project, Menlo Park, San Mateo County, California

- H. California Occupations Safety and Health
- I. California State Labor Care
- J. California State Health and Safety Code
- K. Uniform Building Code (UBC)
- L. California Building Code (CBC)
- M. Caltrans Standard Specifications, Latest Edition

1.3 RELATED SECTIONS

- A. Section 02 41 00 – General Demolition
- B. Section 31 23 00 – Excavation, Backfilling, and Compacting for Utilities
- C. Section 31 23 19 – Dewatering
- D. Section 32 11 16 – Aggregate Base

1.4 DEFINITIONS

- A. Backfill: Material used in refilling a cut, trench, holes, or other excavations.
- B. Base Course: The layer placed between the subbase or subgrade and surface pavement in a paving system. See Section 31 11 16-2.1 D for subbasematerial.
- C. Bay Mud: A local marine deposit, which is typically classified as CH, MH, or OH.
- D. Capillary Break: Course of washed granular material beneath a slab-on-grade (topping/floor slab) placed to minimize upward capillary flow of pore water.
- E. Compaction: The process of mechanically placing a material at a controlled density and moisture condition. “Degree of Compaction” or “Relative Compaction” is expressed as a percentage of the maximum density obtained by the test procedure described in ASTM D1557 abbreviated in this Specification, for example, as “90 percent ASTM D1557 maximum density.”
- F. Cut: Removal of soil to obtain a specified soil elevation.
- G. Engineered Fill: Engineered fill is suitable material placed to required lines, grades and compaction requirements as set forth within the Contract Documents and as recommended in the geotechnical report.
- H. Excavation: Removal of soil to obtain a specified depth or elevation. All excavation shall be considered unclassified, regardless of type, nature, or condition of materials encountered. Contractor shall make his own estimate of kind, suitability and extent of various materials to be excavated for this project.
- I. Import Borrow: Soil material obtained off-site when sufficient approved soil materials not available from on-site.

- J. Lift: Horizontal layer or course of soil placed on top of previously prepared, compacted or placed soil, or subgrade.
- K. Optimum Moisture Content: Optimum moisture content shall be determined in accordance with ASTM D1557.
- L. Over excavation: Over excavation is excavation beyond the limits designated in the Contract Documents. When over excavation is ordered by the Owner's Agent (Geotech), then excavation and backfill will be paid for as an item of extra work. When over excavation is not ordered by the Owner's Agent (Geotech), then excavation and backfill shall be performed by the Contractor at no additional cost to the Owner.
- M. Rock: Any in place natural soil or material which cannot be excavated with conventional earth moving equipment and requires use of special buckets, rock teeth, jack-hammering, and/or other special methods of excavation.
- N. Rubble: Any man-made material or debris, construction spoils or rock fill exceeding 3- inches in greatest dimensions.
- O. Shoring: A combination of bracing, plates, walls, boxes, anchors, etc. used to maintain a safe and stable excavation during construction. Typical shoring systems are designed to allow no more than one inch of movement laterally.
- P. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- Q. Subbase Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.
- R. Subgrade: The uppermost soil surface upon which future pavement, base material, fill material, or structural foundation will be placed.
- S. Suitable Material: See satisfactory soil materials Section 31 11 16-2.1 B.
- T. Unauthorized excavation: removal of materials beyond indicated subgrade elevations or dimensions without approval of Owner's Agent (Geotech).
- U. Unclassified Excavation: Unclassified excavation means that the nature of materials to be encountered has not been identified or described within these Specifications.
- V. Unsuitable Material: Existing, in-place soil or other material designated by the soils reports or Owner's Agent (Geotech) as having insufficient strength characteristics or stability to carry intended loads without excessive consolidation or loss of stability. As a minimum, materials classified as ML, MH, CL, CH, OL, OH and PT by ASTM 2487 are unsuitable. Also, material designated by the Environmental Engineer or material containing rock or rubble greater than three inches in size, refuse, organic material, and/or any other material which could hinder compaction shall be considered unsuitable. Material shall not be classified as unsuitable solely on the basis of moisture content not being within specified limits.
- W. Utilities: underground pipes, conduits, ducts, and cables, as well as underground services within building lines.
- X. Weathered Rock: Any in-place native soil or material that was previously rock but is weathered such that it can be excavated with conventional equipment.

1.5 SHEETING, SHORING, AND BRACING

- A. For all excavation greater than five (5) feet in depth, Contractor shall design, maintain and install sheeting, shoring and/or bracing. Sheeting, shoring and/or bracing plan shall be designed by a California Registered Engineer and installed per regulatory requirements of Cal/OSHA, California State Labor Code and UBC. Design shall take into account Project soils, seismic requirements and other constraints. Shoring will need to be conducive to the contractor's approach to managing groundwater.

1.6 QUALITY ASSURANCE

- A. Contractor shall verify shrinkage characteristics of all soils to be used on the site as engineered fill. The Owner will not be responsible for additional costs associated with variations in shrinkage or bulking factors and related earthwork quantities.
- B. All testing required by this Section and other Sections of these Specifications shall be performed by an independent, qualified Testing Company as approved by Owner. Retesting required as a result of failed tests shall be at the Contractor's expense.
- C. Codes and Standards: Perform earthwork complying with requirements of Geotechnical Engineering Investigation by BAGG Engineers, dated April 9th, 2021; Draft Geotechnical Memorandum by Crawford & Associates, Inc dated December 31, 2020; Draft Geotechnical Memorandum by BAGG Engineers dated November 21, 2022 and authorities having jurisdiction.
- D. Testing and Inspection Service: The owner will employ a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to check that the soils are suitable for use as engineered fill and to perform required field and laboratory testing to check required compaction and moisture requirements. Samples of proposed engineered fill shall be provided to the geotechnical engineer at least 72 hours prior to its use. It shall not be used as fill or backfill until it is approved.

For any imported soil/sediment or reused onsite soils, the contractor shall implement the testing requirements and handling techniques as specified in the Quality Assurance Project Plan for the West Bay Sanitary District Flow Equalization and Resource recovery Facility Flood Protection Project, Menlo Park, San Mateo County (QAPP) prepared by SWCA Environmental Consultants and dated August of 2022, or the most current revised/approved version. The permittee shall submit a final QAPP to the Commission for review and approval no later than 60 days before construction is anticipated to begin and pursuant to the plan review condition contained herein.

The Contractor shall characterize the quality of all fill soils for the project (ecotone levees, habitat creation areas, etc.) that will have the potential to come in contact or discharge into the Bay. The permittee shall prepare a technical report with testing results and submit the report to the Commission at least 30 days prior to the proposed date for placing the material for review and approval. The permittee shall obtain written approval by or on behalf of the Commission for the use of the soil prior to placing it. The technical report shall demonstrate that the chemical concentrations for the soils comply with the protocols contained in the QAPP. The contractor shall not import or reuse any soils that contain contaminants with concentrations that do not meet the acceptance screening level criteria in the QAPP, unless otherwise approved pursuant to Special Condition II.E.3 listed in BCDC Environmental Permit. Any soil that will be transported offsite for upland, non-hazardous or hazardous landfill disposal shall be taken outside the Commission's jurisdiction.

If the Contractor proposes to bring wetland foundation quality soils on site for ecotone construction, the Contractor shall provide the test results and project plans describing how the foundation quality soils will be isolated as described in the QAPP and covered with three feet of wetland cover quality soil.

- E. Contractor should submit laboratory certification that any manufactured material to be used complies with the requirements given in the specifications.
- F. The geotechnical engineer may request or collect samples of material to check conformance during construction.
- G. Contractor shall employ a surveyor to confirm dimensions, locations, and elevations.
- H. A corrosion consultant has been retained by the Owner or Owner's Agent to evaluate the corrosivity of the soil and recommend appropriate mitigation measures.

1.7 TOLERANCES

- A. Earthwork shall be constructed within a vertical tolerance of ± 0.1 foot, unless otherwise shown. Grading shall be executed to maintain slopes and drainage as indicated. Variations within the specified tolerance shall be compensated so that the average grade and cross section specified are met.

1.8 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. See requirements specified in Section 02 41 00, "Demolition."
- B. If Contractor encounters live utilities not indicated, protect the same from damage and immediately notify the Owner's Agent and the affected utility provider. Do not proceed until further instructions are received from the Owner's Agent.

1.9 EQUIPMENT

- A. Contractor shall ensure that all equipment used on this site is operated, inspected and maintained in accordance with applicable Cal/OSHA standards.

1.10 LAND MONUMENTS

- A. Contractor shall notify the Owner's Agent of any existing federal, state, county, and private land monuments encountered. Owner will make arrangements to have monuments "tied-out" and replaced and/or relocated. Monuments destroyed by Contractor, which were not previously shown to the Owner's Agent, shall be replaced at Contractor's expense.
- B. Survey monuments disturbed by the Contractor shall be reset under the supervision of a professional land surveyor or professional civil engineer who is authorized to practice land surveying. In addition, a certificate of correction or corner record shall be filed as appropriate.

1.11 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract.
- B. Test Reports: The Contractor shall submit the following:
 - 1. Geotechnical and environmental laboratory analysis of each soil material proposed for engineered fill and backfill from on-site and borrow sources. Soil material imported from offsite sources must be accompanied by environmental laboratory analysis for review by Owner's Agent prior delivery of such soils.

- 2. One optimum moisture-maximum density curve for each soil material.
- C. Contractor shall submit any samples of soil proposed for use as engineered fill at least 72 hours prior to use as engineered fill. Substitutions: submit in writing to Owner's Agent prior to use. Substitutions may not be allowed per other sections of these specifications.
- D. Contractor shall submit certifications of manufactured materials at least 72 hours prior to use.
- E. Laboratory tests on materials shall have been performed less than 3 months prior to submittal.

1.12 PROJECT CONDITIONS

- A. The Contractor shall visit the site to determine if the existing conditions, nature of materials to be encountered, and all other facts concerning or affecting the work.
- B. The contractor should submit in writing, any questions or comments regarding discrepancy or constructability between the specs, the plans and existing conditions before bidding.
- C. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Owner and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum 72-hours' notice to the Owner and receive written notice to proceed before interrupting any utility.
- D. Existing Foundations: See Section 02 40 00, "Demolition."
- E. Any water and debris which would interfere with construction shall be removed from excavated areas. Excavations shall be free from loose material and water while forms are being set and concrete placed. During rainy weather, maintain excavations free of water by pumping and other appropriate means. Pumping from excavations shall be performed in a such a manner as to preclude the possibility of any portion of the concrete being carried away. All water resulting from dewatering operations shall be disposed of in accordance with the requirements of the City of Menlo Park and/or the San Francisco Bay Regional Water Quality Control Board.
- F. Throughout the entire construction period, keep dust down within the working area along roads used in the operations and all involved portions of site by intermittent watering and sprinkling. In accordance with Bay Area Air Quality Management District (BAAQMD) guidelines, unpaved access roads should be watered three times daily and other active construction areas twice daily
- G. Contractor shall keep his work area clean, and in a safe and workmanlike condition so that rubbish, waste and debris do not interfere with the work of other trades.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. Satisfactory Soil Materials: ASTM D-2487 soil classification groups GW, GP, GM, GC, SW, SP, SC and SM; free of rock or gravel larger than 3 inches in greatest dimension, debris,

waste, frozen materials, vegetation and other deleterious matter. Other soil classifications shall be submitted to the project geotechnical engineer for approval before being used as backfill. The soil materials shall be 100 percent passing 3-inch sieve and a range of 40-100 percent passing No. 4 sieve size. Satisfactory soil shall have a liquid limit less than 40 and a plasticity index lower than 12. Recycled material will not be allowed for bedding material and backfill material.

- C. Backfill and Engineered Fill Materials: Satisfactory soil materials.
- D. Aggregate Base Material: Conform to Section 3 of the City Standard Specifications. Reclaimed materials may be incorporated in accordance with Caltrans Standard Specifications, 26-1.02A & B.
- E. Aggregate Subbase Material: Shall conform to Caltrans Standard Specifications Section 25-1.02 A.
- F. Engineered Fill: Shall consist of the following parameters:
 - 1. No rock fragment greater than 2-inches in diameter.
 - 2. Fines content, passing sieve No. 200 of 20 to 70 percent.
 - 3. Liquid Limit of less than 40
 - 4. Plasticity Index in the range of 10 to 20.
 - 5. Permeability of less than 2×10^{-1} feet per day.
 - 6. Phi angle, Φ of 38 degrees or greater for fill compacted to not less than 90% relative compaction based on ASTM D1557 laboratory test method.
- G. Crushed Rock: Washed, evenly graded mixture of crushed stone, or crushed gravel, with 100 percent passing a 1-inch sieve, 90 to 100 percent passing a 3/4-inch sieve and not more than 5 percent passing the No. 4 sieve. Recycled Materials shall not be allowed in Crushed Rock.
- H. Capillary Break: clean, washed, free-draining, open-graded gravel, or crushed rock.
Gradation Requirements for Capillary Break:

Sieve Size	Percentage Passing Sieve
1 inch	90-100
3/4 inch	30-100
1/2 inch	5-25
3/8 inch	0-6
- I. Pipe Bedding Material: Pipe bedding shall comply with City of Menlo Park standards, West Bay Sanitary District standards and as shown in the plans.
- J. Stabilization Material: Crushed Rock or Recycled Material meeting the gradation of Crushed Rock. A stabilization fabric may be required.
- K. Clay Plug: Shall consist of soil material which has permeability less than 10^{-6} cm/sec at 85% Relative Compaction. Material may be CL or CH or other soil material modified with additives

to accomplish required permeability.

- L. Control Density Fill: Control Density Fill shall be required on both the inboard and outboard sides of the northeast levee to create slopes on either side of the existing levee.
- M. Weed Free Soils: No soil from weed-infested areas shall be utilized as topsoil cover for newly filled areas. Any soil from weed-infested areas shall be disposed offsite at an appropriate location, or buried under at least 2.5 feet of weed-free soils if used for any of the project elements, including the levee road, road fill, etc.
- N. Bay Mud: If Bay Mud is to be hauled and dumped offsite, Bay Mud shall be dried prior to being hauled.
- O. Light-weight Flowable Fill: Shall be Elastizell or approved equal.
 - 1. Expansion Material: The expansion material shall meet ASTM C869 when testing in accordance with ASTM C796.
 - 2. Cement: Portland cement shall comply with ASTM C150, C595 or C1157. Pozzolans and other cementitious materials may be used.
 - 3. Water: Potable water.
 - 4. Admixtures; may be used when specifically approved by the manufacturer of the Engineered Fill.

2.2 GEOTEXTILES

- A. Stabilization Reinforcement Fabric: Mirafi 600X or approved equal.
- B. Filter Fabric: Mirafi 140NC or approved equal.
- C. Native Soil Marker Fabric: Mirafi SAF, Tenax Guardian, or approved equal, Orange.

2.3 COMPACTION EQUIPMENT

- A. Compaction equipment shall be of suitable type, adequate to obtain satisfactory breakdown of materials and specified densities to form a dense fill.
- B. Compaction equipment shall be operated in accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained to deliver manufacturer's rated comparative effort. If inadequate densities are obtained, larger and/or different types of additional equipment capable of achieving specified densities shall be used.
- C. Vibratory equipment: See Paragraph 3.12 E.

2.4 MOISTURE CONTROL EQUIPMENT

- A. Equipment for applying water shall be of a type and quality which is adequate for the work, does not leak, and is equipped with a distributor bar or other approved device to assure uniform application. Equipment for mixing and drying materials shall consist of blades, discs or other equipment.

PART 3 - EXECUTION

3.1 GRADING

- A. Work to be performed shall be relative to finished grades shown on the Drawings. Earthwork beneath proposed paved areas is to be constructed to pavement subgrade (finished pavement surface grade minus the thickness of the proposed structural section).
- B. If site grading occurs when onsite soils are above the optimum moisture content, aeration, blending, or chemical treatment with lime and/or cement may be used to reduce the moisture content to within specified limits.
- C. Areas to receive engineer fill should be stripped of surficial organics and improvements. Stripped materials shall be hauled off site. Stripping depth shall be verified by the Geotechnical Engineer in the field.
- D. Exposed surface created from stripping shall be cleaned of loose soils to competent material, as judged by Geotechnical Engineer in the field, scarified to a depth of 8 inches, moisture conditioned and compacted to a minimum of 90 percent relative compaction in building footprint areas and 95 percent relative compaction in traffic areas.
- E. Engineering fill shall be placed in thin horizontal lifts not exceeding 8 inches in loose thickness and compacted to a minimum of 90 percent relative compaction at not less than optimum moisture and to a minimum of 95 percent relative compact when with 8 inches of vehicular subgrades.
- F. Fill slopes constructed to wide levee banks should be initiated on level areas or cut benches at least 15 feet wide when on sloping ground; if soft areas encountered, the area could be over excavated a minimum depth of 18 inches and 15 feet width and backfilled with light weight flowable fill.
- G. Fill slopes constructed to widen levee banks should be constructed at a maximum gradient of 2.5:1 (horizontal to vertical). Fill slopes should be constructed by overfilling and cutting the slope to final grade. "Track walking" of a slope to achieve compaction is not an acceptable procedure for slope construction.

3.2 EXCAVATION

- A. Explosives: Do not use explosives.
- B. Unclassified Excavation: Excavation is unclassified and includes excavation to required sub grade elevations regardless of the character of materials and obstruction encountered.
- C. Soft or wet materials encountered at excavation subgrade shall be removed and replaced with lean concrete, engineered fill, crushed rock, stabilization material, or cement- treated soil, as needed to provide non-yielding subgrade. In soft soil conditions, a stabilization reinforcement fabric may be placed as needed prior to placement of these materials. Where open-graded crushed rock or stabilization material is used, it shall be covered entirely by filter fabric.

3.3 STABILITY OF EXCAVATIONS

- A. For all excavations Contractor shall design, maintain and install sheeting, shoring and/or bracing per regulatory requirements of Cal/OSHA, California State Labor Code, UBC. Design shall take into account Project soils, seismic requirements and other constraints.

- B. All excavations in Bay Mud should be shored up.
- C. When Bay Mud or soft, wet soil is encountered at the bottom of an excavation, a stabilization reinforcement fabric should be placed and overlain by at least 12 inches or more of stabilization material as needed to provide a non-yielding subgrade and covered entirely by filter fabric (Mirafi 140 NC), unless greater measures are specified in the plans.
- D. See geotechnical reports for temporary excavation slopes.
- E. Comply with the geotechnical report, local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.
- F. Excavations shall be supported and braced to prevent movement of the adjacent soil. Shoring and bracing systems shall be designed by a Civil Engineer registered in the State of California. Drawings and Calculations for shoring shall be submitted for review by the Owner's Agent.

3.4 Testing for Elastizell or approved equal

- A. Test in accordance with ASTM C495.

3.5 EXCAVATION OF STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
- B. Prior to placement of any concrete (either lean concrete or structural concrete), the soil at the exposed subgrade shall be rolled to produce a smooth, non-yielding surface.
- C. Soft or wet materials encountered at excavation subgrade shall be removed and replaced with lean concrete, engineered fill, crushed rock, stabilization material, or cement- treated soil, as needed to provide non-yielding subgrade. In soft soil conditions, a stabilization reinforcement fabric may be placed as needed prior to placement of these materials. Where open-graded crushed rock or stabilization material is used, it shall be covered entirely by filter fabric.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.
- B. Prior to placement of any concrete, pavers, or pavement, the soil at the exposed subgrade shall be conditioned to produce a smooth, non-yielding surface.
- C. Soft or wet materials encountered at excavation subgrade shall be removed and replaced with lean concrete, engineered fill, crushed rock, stabilization material, or cement- treated soil, as needed to provide non-yielding subgrade. In soft soil conditions, a stabilization reinforcement fabric may be placed as needed prior to placement of these materials. Where open-graded crushed rock or stabilization material is used, it shall be covered entirely by filter fabric.

3.7 APPROVAL OF SUBGRADE

- A. Notify the Owner's Agent (Geotech) 48 hours prior to excavations reaching required subgrade.

- B. When the Owner's Agent (Geotech) determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or lean concrete as directed.
 - 1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.
- C. Reconstruct subgrades damaged by sun, rain, accumulated water, or construction.

3.8 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill shall be used to bring elevations to proper position when acceptable to the Owner's Agent.
- B. Fill unauthorized excavations under other construction as directed by the Owner's Agent.

3.9 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of existing trees.
 - 2. For soil stockpiles in place for less than 30 days, cover, enclose, water twice daily, or apply non-toxic soil binders.
 - 3. For soil stockpiles in place for more than 30 days, cover with anchored plastic sheeting or hydro seed.
 - 4. For soil stockpiles in place for one year or greater, the stockpiles must be hydro seeded or similarly covered.
 - 5. During the rainy season, all stockpiles must be covered with anchored plastic sheeting, hydro seeding, or another equivalent cover.
- B. Remove excess excavated material from site immediately. Prior to depositing of soils offsite, Owner approval must be granted.

3.10 BACKFILL AND FILL AREAS

- A. The Contractor shall notify the Owner's Agent (Geotech) at least 48 hours prior to commencing each phase of earthwork.
- B. Preparation: Remove vegetation, topsoil, pavement, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- C. When subgrade or existing ground surface is to receive fill, scarify subgrade surface to depth of 6 inches, pulverize, moisture-condition or aerate soil to optimum moisture content and compact to required relative compaction. In areas outside the Right-Of-Way, install Native Soil Marker fabric on prepared native soil surface prior to placing fill.
- D. All soil to be used as backfill and engineered fill should be prepared such that it meets the

requirements of suitable soil material before placement. Preparation includes but is not limited to screening the soil to filter out all material larger than 3-inches in greatest dimension, and removing any material previously discussed under the definition of unsuitable soil material. Furthermore, the soil should be moisture conditioned to near optimum moisture content prior to placement.

- E. Backfill excavations promptly, but not before completing the following:
 - 1. Acceptance of construction below finish grade.
 - 2. Concrete formwork removal.
 - 3. Removal of trash and debris from excavation.
 - 4. Removal of temporary shoring and bracing, and sheeting.
- F. Place fill material in layers to required elevations for each location listed below.
 - 1. Under walks and pavements, use subbase or base material, or satisfactory excavated or borrow soil material.
 - 2. Under steps and ramps, use subbase material.
 - 3. Under footings and foundations, use engineered fill.
- G. Where open-graded rock is used as backfill, bedding, cover, and/or stabilization material, it shall be entirely covered by a filter fabric, Mirafi 140 NC or equivalent.

3.11 OVER EXCAVATION AND BACKFILL

- A. Where indicated on the Project Drawings and directed by the Owner's Agent (Geotechnical Engineer) or City Inspection Agency, commence with over excavation in areas where the existing utilities are at a depth of less than seven (7) feet below existing grade.
- B. Existing Utilities will be protected in place, braced and supported during over excavation.
- C. Backfill Material shall Consist of light weight flowable fill such as elastizell or approved equal.
- D. Over excavation depths shall be confirmed with Geotechnical Engineer once existing utility depth has been field verified.

3.12 COMPACTION

- A. Engineering fill shall be placed in thin horizontal lifts not exceeding 8 inches in loose thickness and compacted to a minimum of 90 percent relative compaction at not less than 3 percent over optimum moisture content.
- B. Place backfill and fill materials on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages relative compaction according to ASTM D 1557:
 - 1. Under pile-supported structures, compact to 90 percent relative compaction.

2. Under on-site sidewalks, steps, and pavements, compact the top 24 inches below subgrade and each layer of backfill or fill material to 95 percent relative compaction. Where less than 18" of new fill is to be placed, over excavate and recompact to depth needed to provide 24 inches of compacted soil below subgrade.
 3. Under non-pile-supported structures and slabs-on-grade, compact the top 12 inches below subgrade and each layer of backfill or fill material to 95 percent relative compaction. Where less than 6" of new fill is to be placed, over excavate and recompact to depth needed to provide 12 inches of compacted soil below subgrade.
 4. Under city streets, compact the upper three feet of fill to 95 percent relative compaction.
 5. Under city sidewalks, which are not otherwise referred to as specialty sidewalks, compact fill to 90 percent relative compaction. Where sidewalk occurs over structural soil planting trench, refer to Specification Section 02920 for compaction requirements
 6. Under Specialty Sidewalks, compact upper six inches below subgrade to 95 percent relative compaction.
 7. Below the specified depths (items 1 through 4 above) backfill or fill material at least 90 percent relative compaction.
- D. Jetting shall not be permitted.
- E. Vibratory equipment shall not be used where shallow groundwater is present that when vibrated will adversely affect compaction efforts. The contractor shall repair any subgrade/fill damaged by the use of vibratory equipment at no cost to the owner.
- F. Where lightweight fill material is used, cover lightweight fill material with stabilization reinforcement fabric. Stabilization reinforcement material fabric such as Mirafi 600X or approved equal shall also be placed between lightweight fill and aggregate base or aggregate subbase.
- G. Lightweight Fill Requirements:
1. Lightweight fill shall be placed in uniform layers. The actual lift thickness, and exact number of passes by equipment used will be determined by the engineer.
 2. In confined areas vibratory plate compaction equipment shall be used (5 hp to 20 hp) with a minimum of two passes in 6" lifts for a 5 hp plate and 12" lifts for a 20 hp plate.
 3. The Contractor shall take all necessary precautions when working adjacent to the lightweight fill to ensure that the material is not over compacted. Construction equipment, other than for placement and compaction, shall not operate on the exposed lightweight fill.
 4. The street plan and profiles depict the location and extent of the required lightweight fill material. The areas shown in the profiles as "Use Lightweight Fill" include the required 6-inch aggregate subbase layer, although the layer distinction is not shown. In locations where the overall thickness of this combined layer is 6 inches or less, the Contractor shall use only the required 6-inch aggregate subbase and no lightweight fill.
- H. The subgrade beneath pavements and sidewalks shall be compacted to provide a smooth non-yielding surface. Subgrade shall be proof-rolled under the observation of the geotechnical engineer.

3.13 SUBBASE AND BASE COURSES

- A. Under pavements and walks, place subbase course material on prepared subgrades. Place base course material over subbases to pavements. Both the subbase and base materials shall be placed and compacted to a minimum 95 percent relative compaction as defined by ASTM D1557.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency Services: The Owner's Agent (Geotech) will test each subgrade and each fill or backfill layer. Contractor shall not proceed until test results for previously complete work verify compliance with requirements.
- B. Whenever acceptance of the Owner's Agent (Geotech) is required by these Specifications, the Contractor shall notify the Owner's Agent (Geotech) at least 48 hours prior to commencing any phase of earthwork.
 - 1. No phase of the work shall proceed until the prior phase of work has been accepted by the Owner's Agent (Geotech).
 - 2. Work shall not be covered up or continued until acceptance of the Owner's Agent (Geotech) has been obtained.
 - 3. The Owner's Agent (Geotech) will give written notice of conformance with the geotechnical aspects of the Specifications upon completion of grading.
- C. The Owner's Agent (Geotech) has been retained to observe performance of work under this section.
 - 1. If, in the opinion of the Owner's Agent (Geotech), the work performed does not meet the technical or design requirements stipulated, the Contractor shall make the necessary readjustments as required by the Owner's Agent (Geotech).
 - 2. No deviations from the contract documents shall be made without specific and written acceptance of the Owner's Agent (Geotech).
 - 3. In the event of conflict between the Specifications and the recommendations contained in the Geotechnical Report, the Owner's Agent (Geotech) shall be notified.
 - a. The Contractor shall follow clarification and interpretation memoranda prepared by the Owner's Agent (Geotech) at no additional cost to the Owner.
 - b. If clarification or interpretation memoranda should result in a change in the scope of work, an adjustment in the contract price will be mutually agreed upon by the Contractor and the Owner.
- D. The Owner's Agent review of the Contractor's performance does not include review of the Contractor's safety measures.

3.15 PROTECTION

- A. Protecting Excavated Areas: Protect newly excavated areas from traffic, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction

operations or weather conditions.

1. Scarify or remove and replace material to depth directed by the Owner's Agent, reshape and recompact optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, scarify upper six inches and recompact subgrade at optimum moisture, then backfill with additional approved material at required compaction, and reconstruct surfacing, at no cost to the owner.

3.16 ABANDONMENT OF SUBSURFACE UTILITIES

See Section 02 40 00, "Demolition."

3.17 SAFETY PRECAUTIONS

- A. Contractor shall maintain substantial precautions and other protective measures to safeguard workmen and the general public from bodily injury. As part of standard safety precautions, contractor must comply with the provisions of the Risk Management Plan, including preparation of an Environmental Health and Safety Plan.

3.18 DEWATERING

- A. Prevent surface water and subsurface or groundwater from entering excavations, form ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Remove ponded water immediately.
- D. Any repair or recompaction required due to presence of ponded water shall be performed at no cost to Owner.

3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property, in accordance with the Risk Management Plan and as approved in advance by Owner's Agent.

3.20 HYDRO-MULCHING

- A. Following earthwork operations all surfaces of exposed soil (i.e., open-graded areas, detention basins, overflow channels, swales, etc.) shall be hydro-mulched.

3.21 CLAY PLUG

- A. Provide and obtain approval of samples of source material. Proposals including mixing on-site materials with bentonite or Portland cement shall be subject to approval of means and methods, and permeability testing by Owner's Agent at least 72 hours prior to its use. Material shall not be used unless approved by Owner's Agent.
- B. Moisture condition to within 5% of optimum moisture content prior to installation.
- C. Place in 8-inch thick uncompacted lifts and compact to at least 85% relative compaction. If Bay Mud is used, the moisture and compaction requirement may be waived provided the Bay Mud is rolled in 12-inch lifts.

END OF SECTION 31 00 00