

## **ADDENDUM NO. 2**

### **TO CONTRACT DOCUMENTS**

#### **CITY OF LOS BANOS BASIN AND STORMWATER CAPTURE PROJECT**

**SEPTEMBER 30, 2025**

This **Addendum No. 2** consists of twenty-three (23) pages, and must be signed, dated, and submitted along with the Bid Documents. The following additions, deletions or modifications shall become part of the Contract Documents:

Strikethrough text (~~text~~) indicates deletions.

Bold Italicized text (***text***) indicates additions.

#### **ITEM NO. 1: SECTION 40 05 21 – TAPPING SADDLES SLEEVES AND VALVES**

Specifications Section 40 05 21 – Tapping Saddles Sleeves and Valves shall be replaced in its entirety with the revised Section 40 05 21 – Tapping Saddles Sleeves and Valves attached.

#### **ITEM NO. 2: ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST ESTIMATE**

The Engineer's Opinion of Probable Construction Cost Estimate for the City of Los Banos – Basin and Stormwater Capture Project is \$3,419,000.

#### **ITEM NO. 3: SECTION 31 05 00 - Earthwork**

Specifications Section 31 05 00 - Earthwork shall be replaced in its entirety with the revised Section 31 05 00 – Earthwork attached.

#### **ITEM NO. 4: ADDITIONAL ITEMS, CLARIFICATIONS, AND QUESTIONS**

1. Question: What is the allowable organic content for areas outside of structural levee embankments and above the stated High Water Line?

Response: Specifications Section 31 05 00 Earthwork, Part 2.1 E. 2. requires the levee embankment fill to contain less than 3 percent organic content by weight. There is no differentiation in organic content requirements in the levee embankment below or above the high line. Refer to **Item No. 3**.

2. Question: Do the basin floors need to be scarified and re-compacted to 90% after building the embankments?

Response: Basin floors shall not be scarified and re-compacted to 90% maximum density.

3. Question: What is the thickness of the existing concrete lined irrigation channel, and does it have steel reinforcement? If so, what type?

Response: In the location it was checked, the existing concrete lined irrigation channel (canal) thickness is approximately 3 to 4 inches and did not contain steel reinforcement. It is unknown if the material thickness is uniform and if non-reinforced throughout the entire channel.

4. Question: Can you confirm no domestic/buy American requirements?

Response: The Project is not subject to domestic/buy American requirements.

5. Question: Please confirm specific casing size. The plan detail on sheet CD1 specifies 42" ID. Standard casing sizes over 12" are in OD, therefore in order to meet a 42" ID, it would be a 48" OD needing custom fabrication and modifications to the tooling as everything is manufactured to the industry standards?

Response: The casing size for Detail 1 on sheet CD1 shall be minimum 42-inches OD and 0.5 inches wall thickness.

6. Question: Drawing C2 and Detail 7 on Drawing CD3 show a "Clamp On Saddle with a 6" Flange for the HDPE Air Vents. Specification 40 05 21 is for Tapping Saddles and Valves. However, section 2.2 of this specification only covers small saddles for DI and PVC pipe. Section 2.3 TAPPING SLEEVES currently states "NOT USED". Can you please provide a specification for the 6" flanged saddles required for this project? Specifically, can you please provide the make and model and style of saddle required?

Response: Saddles for taps on HDPE pipe shall be Morrill Industries 1096 Series Clamp On Saddle or Engineer approved equivalent. Refer to **Item No. 1**.

7. Question: Detail Section A-A on Sheet GR4 calls out PF "Engineered Fill" as the material to be used for levee construction. Under Specification 31 05 00 Earthwork Section 2.1 Materials it calls out multiple materials for use as levee fill under Subsections A. B. C. D. and E. which all have different requirements. We wanted to confirm if only material under subsection B. "Engineered Fill" shall be utilized for construction of all levees.

Response: Levee material shall meet the requirements in Section 31 05 00 – Earthwork Part 2.1.D and Section 4.5 Paragraph 6 of the Geotechnical Engineering Investigation Entitled, Proposed New Recharge Basin and Sewer Improvement By BSK Associates, Dated January 15th, 2024 (Appendix F). Refer to **Item No. 3**.

8. Question: Are you able to provide more information on the existing utilities or irrigation lines in situ? Specifically, pipes (material type, sizes, layout, and nature of service). Also, if they are exclusively irrigation lines or if utility lines are present? Lastly, that they are de-energized?

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT  
ADDENDUM NO. 2

Response: Utilities other than what is shown on the Project plans are unknown. The cropped areas on the Project site have in recent times been irrigated by surface irrigation methods.

9. Question: Note 1 on G3 States in part, "Then as directed by the Engineer". Please clarify, if there is not enough onsite materials to make the required Rip Rap, are the contractors required to import the Rip Rap classification called out in addendum 1. Based on the plans, we are coming up with 1500 CY of Rip Rap required for the various locations.

Response: Until the concrete lined canal is removed by the contractor, it is unknown as to the suitability and quantity of the concrete canal rubble for use as riprap (rip rap) on the project site. Therefore, all riprap shall be Class II RSP per the project plans and specifications in all locations noted as requiring riprap. Concrete rubble from the demolition of the existing concrete irrigation canal shall be stockpiled in the location shown on Sheet GR2 of the Plans. The following Notes on the Plans shall be replaced entirely with the following:

Sheet G3 of the Plans, Notes 1 and 2:

1. NOT USED.

2. CONCRETE CANAL RUBBLE SHALL BE STOCKPILED IN THE NORTHERLY CORNER OF THE SOUTHERN BASIN CELL AS DIRECTED BY THE ENGINEER. EARTH, STEEL, AND OTHER MATERIALS SHALL BE REMOVED FROM THE RUBBLE PRIOR TO PLACEMENT. ANY MATERIAL THAT IS NOT CONCRETE SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF PROPERLY.

Sheet GR1 of the Plans, Notes 4 and 5:

4. DEMOLITION MATERIAL FROM THE EXISTING CONCRETE IRRIGATION CANAL SHALL NOT BE USED IN PLACE OF RIP RAP.

5. CONCRETE CANAL RUBBLE SHALL BE STOCKPILED IN THE NORTHERLY CORNER OF THE SOUTHERN BASIN CELL AS DIRECTED BY THE ENGINEER. EARTH, STEEL, AND OTHER MATERIALS SHALL BE REMOVED FROM THE RUBBLE PRIOR TO PLACEMENT. ANY MATERIAL THAT IS NOT CONCRETE SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF PROPERLY.

Sheet GR2 of the Plans, Notes 4 and 5:

4. DEMOLITION MATERIAL FROM THE EXISTING CONCRETE IRRIGATION CANAL SHALL NOT BE USED IN PLACE OF RIP RAP.

5. CONCRETE CANAL RUBBLE SHALL BE STOCKPILED IN THE NORTHERLY CORNER OF THE SOUTHERN BASIN CELL AS DIRECTED BY THE ENGINEER. EARTH, STEEL, AND OTHER MATERIALS SHALL BE

REMOVED FROM THE RUBBLE PRIOR TO PLACEMENT. ANY MATERIAL THAT IS NOT CONCRETE SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF PROPERLY.

Sheet GR3 of the Plans, Notes 4 and 5:

4. DEMOLITION MATERIAL FROM THE EXISTING CONCRETE IRRIGATION CANAL SHALL NOT BE USED IN PLACE OF RIP RAP.

5. CONCRETE CANAL RUBBLE SHALL BE STOCKPILED IN THE NORTHERLY CORNER OF THE SOUTHERN BASIN CELL AS DIRECTED BY THE ENGINEER. EARTH, STEEL, AND OTHER MATERIALS SHALL BE REMOVED FROM THE RUBBLE PRIOR TO PLACEMENT. ANY MATERIAL THAT IS NOT CONCRETE SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF PROPERLY.

Sheet GR4 of the Plans, Notes 8 and 9:

8. DEMOLITION MATERIAL FROM THE EXISTING CONCRETE IRRIGATION CANAL SHALL NOT BE USED IN PLACE OF RIP RAP.

9. CONCRETE CANAL RUBBLE SHALL BE STOCKPILED IN THE NORTHERLY CORNER OF THE SOUTHERN BASIN CELL AS DIRECTED BY THE ENGINEER. EARTH, STEEL, AND OTHER MATERIALS SHALL BE REMOVED FROM THE RUBBLE PRIOR TO PLACEMENT. ANY MATERIAL THAT IS NOT CONCRETE SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF PROPERLY.

10. Question: Please direct me to the requirements for the project sign. What is the size, color, graphics, etc.. If there are no requirements in the project documents, please provide a cut sheet showing the details.

Response: The project sign is shown on sheet CD4 (sheet 15/18) of the Plans.

11. Question: For the berms/levee sections of the basins-Do they require gravel on the 15' wide roadway on top of them?

Response: Gravel is not required on the levee surface.

12. Question: Do the basins require ripping after the finish grade is established?

Response: The basin floor areas should not be ripped after establishing the finish grade.

13. Question: RE: SWPPP-Are the levees the only areas that require BMP's & hydroseeding? Are the basins excluded because they are inside the levees?

Response: Hydroseeding is not required. Required BMP's are in the SWPPP (see Appendix G of the Specifications).

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT  
ADDENDUM NO. 2

Except as expressly amended hereby, all terms and conditions of the Contract Documents shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum on \_\_\_\_\_, 2025.

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_

By:  \_\_\_\_\_

Eric Abrahamsen, RCE 52000

PROVOST & PRITCHARD  
CONSULTING GROUP

**REMINDER: Bids are due prior to 2:00:00 P.M. local time on Friday, October 3, 2025, at the City of Los Banos City Clerk Office (520 J Street, Los Banos, CA 93635).**

Attachments:

1. Revised Section 40 05 21 – Tapping Saddles Sleeves and Valves (4 Pages)
2. Revised Section 31 05 00 – Earthwork (14 Pages)

**SECTION 31 05 00**  
**EARTHWORK**

**PART 1 GENERAL**

**1.1 WORK INCLUDED**

- A. Work included in this specification includes construction of levees, overexcavation, scarification, structural excavation as shown in the Plans.
- B. All earthwork performed under this contract shall conform to the General Requirements set forth in this section, unless otherwise specified in other sections.
- C. Excavate earth and rock as necessary to allow the installation or construction of various items of work not including trenching, bedding, and backfill for utilities, regardless of character and subsurface conditions. Rock is defined in this section as any material in excavated areas that cannot be ripped and removed by conventional excavating equipment. In case of conflict with the determination of rock excavation, the Engineer shall have the final decision.
- D. Haul, place, rough grade, compact, and finish grade excavated on-site material as engineered fill on those portions of the project site where it is necessary in order to construct the facilities, other than utilities indicated on the Plans. This includes under structures and preparation of subgrade for concrete; drive roads as well as canal/levee embankments.
- E. Haul and dispose of excess and unsuitable material off-site or in designated areas, as directed by the Engineer.
- F. Prepare fill for compaction testing.

**1.2 RELATED WORK**

- A. GENERAL & SPECIAL PROVISIONS
- B. Section 01 51 36– Watering
- C. Section 01 57 23 – Storm Water Pollution Prevention Plan
- D. Section 01 57 27 – Dust Control
- E. Section 02 41 00 – Demolition
- F. Section 03 30 00 – Cast-In-Place Concrete
- G. Section 31 11 00 – Clearing and Grubbing
- H. Section 31 23 17 – Trenching, Backfilling, and Compacting
- I. Section 31 23 35 – Disposal of Materials

### 1.3 REFERENCES

- A. *Geotechnical Engineering Investigation entitled, PROPOSED NEW RECHARGE BASIN AND SEWER IMPROVEMENT by BSK ASSOCIATES, dated JANUARY 15TH, 2024.*
- B. ASTM International (ASTM)
  - 1. C136 – Sieve Analysis of Fine and Coarse Aggregates.
  - 2. D75 Standard Practice for Sampling Aggregates
  - 3. D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort 56,000 ft-lbf/ft<sup>3</sup> (2,700kN-m/m<sup>3</sup>)
  - 4. D6938 – Density of soil and base rock in place by Nuclear method.
  - 5. D2937 – Density of soil and in place by Tube method.
- C. California Department of Transportation
  - 1. State Standard Specifications
    - a. Section 10-6 Watering
    - b. Section 15 Existing Facilities
    - c. Section 17-2 Clearing and Grubbing
    - d. Section 18 Dust Palliatives
    - e. Section 19 Earthwork
    - f. Section 26 Aggregate Bases
- D. Code of Federal Regulations
  - 1. 29CFR1926, Subpart P – Excavations

### 1.4 SUBMITTALS

- A. Submit plans as required for worker protection against caving ground in excavations.
- B. Submittals shall be in accordance with the General and Special Provisions.
- C. Description of methods and equipment to be used for rock removal if encountered.

### 1.5 SAMPLES

- A. Samples shall be submitted in accordance with the General and Special Provisions.
- B. Submit 10 lb sample of each type of fill to testing laboratory, in airtight containers.

EARTHWORK  
31 05 00-2

## 1.6 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
  - 1. Trenches shall have sloping, sheeting, shoring, and bracing conforming with 29CFR1926, Subpart P - Excavations, CAL/OSHA requirements, and the Contract Documents.
- B. Notify Engineer of unexpected subsurface conditions.
- C. Underground utilities may exist at this site. Contractor shall take all necessary precautions to protect said utilities. Notify Engineer of any deviation in utility location from that which is shown on the drawings.
- D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost if encountered.
- E. Grade excavation top perimeter to prevent surface water run-off into excavation.

## 1.7 CONTROL AND DIVERSION OF WATER

- A. General – The Contractor shall furnish or procure all materials and labor required for constructing and maintaining all necessary cofferdams, channels, flumes, drains, sumps, and/or other temporary diversion and protective works and shall furnish, install, maintain, and operate all necessary pumping and other equipment for removal of water from the various parts of the work and for maintaining the foundations, trenches and other parts of the work free from water. The Contractor shall at all times have on the project sufficient pumping equipment for immediate use, including stand-by pumps for use in case other pumps become inoperable.
- B. Plan – Prior to beginning any work; the Contractor shall submit for the Engineer's approval a water control plan showing the proposed method for the removal of water from foundations, trenches and other parts of the work.
- C. Dispose of the water in a manner that will prevent damage to the adjacent property and in accordance with regulatory requirements.
- D. Devices to control and divert water shall be adequately filtered to prevent the removal of fines from the soil.
- E. Provide separate pipelines to drain trench water during construction.
- F. Repair any damage caused by the failure of any part of equipment to control and divert water. Remove temporary equipment to control and divert water when no longer needed for dewatering purposes.
- G. Provision of equipment to control and divert water shall be considered part of the project with no additional compensation allowed.
- H. Drain rock will not be allowed in trenches.

## 1.8 QUALITY ASSURANCE

### A. Compaction Testing:

1. All compaction testing shall be in accordance with the General and Special Provisions and performed in accordance with Section 19-5 of the State Standard Specifications.
2. Compaction tests will be performed for each lift or layer.
3. Tests for compaction shall conform to ASTM D1557 and D6938.
4. Compaction testing will be performed in accordance with State Standard Specifications, Section 19-6.03.
5. Sample aggregates to be used for backfill materials per ASTM D75 and test them per ASTM C136.

### B. In-Place Density:

1. Subgrade preparation including scarification and re-compaction of native soils: At least 1 test per lift every 500 lineal foot of subgrade.
2. Embankments: At least 1 test per lift every 500 lineal foot of embankment.
3. Structures: At least 1 test every 2 feet of height of structures.
4. A greater frequency of testing may be required at the start of work or when new materials, crews, or equipment are introduced to the site.

### C. Laboratory Index Testing:

1. Per *Geotechnical Engineering Investigation entitled, PROPOSED NEW RECHARGE BASIN AND SEWER IMPROVEMENT by BSK ASSOCIATES, dated JANUARY 15TH, 2024.*

## 1.9 DEFINITION

### A. Unsuitable Material – Unsuitable material is material determined to be:

1. Impossible to compact to specified density using ordinary methods at optimum moisture content.
2. Material containing trash, debris, oversized material or other foreign and objectionable materials.
3. Too wet to be properly compacted if circumstances prevent satisfactory in-place drying prior to incorporation into the work.
4. Non-native material containing a significant amount of permeable materials, such as sand or rock, that cannot be blended with other material and requires to be off hauled.

EARTHWORK  
31 05 00-4

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

5. Expansive clays that cannot be mixed or treated and requires to be off hauled.
6. Otherwise unsuitable for the planned use.

**1.10 PROJECT CONDITIONS**

- A. Underground utilities may exist at this site. Contractor shall take all necessary precautions to protect said utilities. Notify Engineer of any deviation in utility location from that which is shown on the drawings.
- B. Arrange construction sequences to provide the shortest practical time that excavations will be open to avoid hazard to the public, and to minimize the possibility of excavation collapse.
- C. Obtain all required permits and licenses before installing utilities and follow the rules and requirements of the authority having jurisdiction.

**1.11 CLASSIFICATION**

- A. Expected material that will be excavated at this site has been identified in the Geotechnical Report.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. All backfill material shall be approved before use and be free of cinders, ashes, ice, frozen soil, large hard clods, organic debris, or other deleterious items.
- B. Engineered fill materials for all fill areas shall be as required by State Standard Specifications, Section 19-3, and Section 19-6, **except as modified by Part 2.1.D below.**
- C. **Not Used.** ~~Fill materials for use in construction of levee embankments should be non-expansive, free of organic matter and granular in nature, within the following limits:~~

| <u>Sieve Size</u> | <u>Percent Passing</u> |
|-------------------|------------------------|
| 3 in.             | 100                    |
| No. 4             | 65-100                 |
| No. 200           | 20-45                  |
| R-Value           | 50 (min.)              |
| Plasticity Index  | <12                    |
| Expansion Index   | <20                    |

- D. Existing Embankment Materials / On-Site Material For Levee Construction:
  1. Material for embankment construction shall be free from frozen material, debris, muck, detrimental quantities of organic materials, and other unsuitable

EARTHWORK  
31 05 00-5

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

materials. In addition, suitable material for embankments shall be able to be compacted to specified density using ordinary methods at optimum moisture. The presence of excessive moisture in otherwise suitable material is not, by itself, sufficient cause for determining that the material is unsuitable. The Contractor shall be responsible for aeration of excavation or embankment to satisfactory moisture content for compaction.

2. **Engineered fill for levee construction must consist of non-expansive soil ( $EL < 20$ ), moisture conditioned to at or above optimum moisture, and compacted to 90 percent relative compaction. Excavated soils, free of deleterious substances (organic matter, demolition debris, tree roots, etc.), with at least 30 percent passing the No. 200 sieve, and with less than 3 percent organic content by weight, may be reused as engineered fill for the backfill, as stated in Section 4.5 Paragraph 6 of the *Geotechnical Engineering Investigation entitled, PROPOSED NEW RECHARGE BASIN AND SEWER IMPROVEMENT by BSK ASSOCIATES, dated JANUARY 15TH, 2024 (Appendix F).***

E. **Not Used.** Material Used For The Levee Embankment Fill Shall Meet The Following Requirements:

1. ~~Consist of non-expansive soil ( $EL < 20$ ).~~
2. ~~Consist of less than 3 percent organic content by weight.~~
3. ~~Contain a minimum fines content of 20%.~~
4. ~~Contain no rocks greater than 3 inches in dimension.~~
5. ~~Fall within a Plasticity Index (PI) range between 10 and 25.~~
6. ~~Material used outside of the inner 8 foot section of the embankment has the same requirements as the inner 8 foot section with the following exception: rocks up to 6 inches are allowed granted they are sufficiently mixed with smaller grained material and the larger rocks are not nested together.~~
7. ~~If expansive clays (PI greater than 25) are present, the material shall be mixed with lower plasticity material and/or treated with lime. If non-plastic material (PI less than 10) is present, the material shall be blended with higher plasticity material. The determination of the presence of high plasticity or low plasticity material that will require treating and/or blending will be at the discretion of the Owner's Representative.~~

F. **Engineered Fill Material Under Structures:**

1. Native materials may be used as engineered fill as stated in the *Geotechnical Engineering Investigation entitled, PROPOSED NEW RECHARGE BASIN AND SEWER IMPROVEMENT by BSK ASSOCIATES, dated JANUARY 15TH, 2024.*

EARTHWORK  
31 05 00-6

## 2.2 WATER

- A. As specified in Section 01 51 36 – Watering.

## PART 3 EXECUTION

### 3.1 CLEARING AND GRUBBING

- A. As specified in Section 31 11 00 – Clearing & Grubbing

### 3.2 GROUND SURFACE PREPARATION

- A. Before excavation for and placing levee embankment, complete all clearing, grubbing, and topsoil stripping. Scarify and re-compact the stripped ground to 90% maximum density surface. The scarification depth below new embankments shall be as indicated on the plans. Site stripping material shall be blended with other suitable fill material for reuse in project areas outside of structural levee embankments and/or above the stated High Water Line (HWL).

### 3.3 INSPECTION

- A. Verify stockpiled fill to be reused is approved.
- B. Verify areas to be backfilled are free of debris, ice, or water, and ground surface are not frozen.

### 3.4 GENERAL

- A. Provide required shoring, sheeting, and slope layback necessary to protect the excavation, as needed, for the safety of the employees and as required by applicable State and Federal laws. Provide suitable barricades for public safety, regardless of excavation depth.
- B. Upon completion of excavation and before placing forms or structures, notify the Engineer who will inspect the excavation and may take tests to determine soil bearing values.
- C. Identify required lines, levels, contours, and datum.
  - 1. Stake and identify the extent of all earthwork operations prior to starting work.
- D. Use suitable material removed from excavation before placing backfill and/or importing fill.
- E. Verify areas to be backfilled are free of debris, snow, ice, or water, and surfaces are not frozen.
- F. Unless noted otherwise in the geotechnical report or the contract documents the Contractor shall comply with the following minimum compactions:

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

1. Areas under flatwork, and structures shall be compacted to minimum of 90% relative compaction.
2. Areas under embankments, scarification depth shall be a minimum of 8 inches recompacted to a minimum of 90% of maximum density.
3. All other fill and disturbed surfaces shall be compacted to a minimum of 90% relative compaction.

3.5 *PREPARATION*

- A. Identify required lines, levels, contours, and datum.

3.6 *MOISTURE CONTROL*

- A. Water development, hauling, and application shall be in accordance with State Standard Specifications Section 10-6, Watering.

3.7 *EXCAVATION*

- A. Excavate the specified areas to lines and grades as shown on the Plans or as directed by the Engineer.
- B. Stockpile as directed excavated material to be used in embankment construction.
- C. If the Plans require placement of fill prior to pipe, or structure excavation, the fill shall first be constructed to the design grade shown for a distance each side of the pipe or structure of not less than five times the diameter of the pipe or the width of the structure after which the trench shall be excavated and the pipe or structure installed.
- D. Carefully excavate to the established lines and grades shown on the drawings, or as revised and approved by the engineer, to provide a firm, uniform, and unyielding foundation for the proposed structures.
- E. Excavate for all foundations, slabs, and/or levee embankments. Remove any bushes, shrubs, stumps, roots, buried objects, or any objects that interfere with construction of structure foundations, or as required by the Engineer.
- F. Over excavation shall be required a minimum of 2 feet below all concrete structures, unless shown otherwise on the Plans.
- G. Beneath structures and levees, the exposed surface shall be scarified to a depth of eight inches, conditioned to optimum moisture content and compacted to at least 93 percent of the maximum dry density.
- H. If any existing foundations, roots, stumps, debris, waste materials, pipes, or similar items have been removed, the Contractor shall excavate below these portions to solid undisturbed earth and foundations in these areas shall be built to necessary levels.

EARTHWORK  
31 05 00-8

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

- I. Engineered fill in over excavated areas shall be onsite fill material, free from organic materials or deleterious substances.
  1. Roads and Ramps
    - a. In conjunction with construction of levee embankments, construct access roads and earth ramps adjacent to the canal and structures. Place material from excavations as embankments for the roads and ramps.
    - b. Where the width of a road is not shown in the Drawings it shall have width of not less than 15 feet. The work required for construction of access roads and for earth ramps shall include grading to a uniform surface equivalent to that obtainable with a motor grader to provide for safe travel with a two-wheel-drive automobile.

3.8 *ENGINEERED FILL AND EMBANKMENT CONSTRUCTION*

- A. Unless otherwise noted, placement and compaction of engineered fill materials for all fill areas shall be performed according to the provisions of the State Standard Specifications, Section 19-6. Section 19-6.02A shall be amended to say that large rocky material or hard lumps larger than three inches in greatest dimension will not be allowed.
- B. Before placing embankment, scarify ground surface to a depth of 8 inches below the original ground surface to provide ample bond between old and new material, as shown on the Plans. Place embankment material in layers not exceeding eight inches, loose measurement.
- C. Where compacting of earth materials is required, the materials shall be deposited in horizontal layers not more than eight inches thick. Compact each layer before placing the next layer. As the compaction of each layer progresses, continually level and manipulate to ensure uniform moisture and density. Add water to obtain optimum moisture content. Removal of excess water shall be accomplished through aeration by plowing, blading, disking, or other methods satisfactory to the Engineer. The excavation, placing, moistening, and compacting operations shall be such that the material will be uniformly compacted and will be homogeneous, free from lenses, pockets, streaks, voids, and laminations or other imperfections such that the materials when compacted will be blended sufficiently to secure the required density.
- D. Moisture Content for Clayey and Silty (Cohesive) Materials:
  1. Prior to and during compaction operations, the materials shall have an above optimum moisture content, but not greater than three percentage points of optimum moisture content, and the moisture content shall be uniform throughout each layer. The optimum moisture content is defined as that moisture content which will result in the laboratory maximum dry density of the soil as determined using ASTM D1557.

EARTHWORK  
31 05 00-9

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

2. If the moisture content is less than optimum for compaction, or is greater than optimum for compaction by more than three percentage points, the compaction operations shall not proceed, except with the specific approval of the Engineer, until the material has been wetted or allowed to dry out, as may be required, to obtain a moisture content within the tolerances permitted above, and no adjustment in price will be made on account of any operations of the Contractor in wetting or drying the materials or on account of any delays occasioned thereby.
- G. Moisture Content for Cohesionless Free-draining Materials: Prior to and during compaction operations, the materials shall have a moisture content at least equal to the optimum moisture content and shall be uniform throughout each layer. The optimum moisture content is defined as that moisture content which will result in the laboratory maximum dry density of the soil as determined using ASTM D1557.
- H. When the material has been conditioned as specified, it shall be compacted by rollers, by hand or power tampers. Where hand or power tampers are used to compact soils in confined areas such as under pipe, they shall be equipped with suitably shaped heads to obtain the required density.
- J. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.
- K. Employ a placement method that will not disturb or damage underground pipe or conduits.
- L. ROLLERS
  1. Rollers used for compacting earth materials shall have staggered and uniformly spaced tamping feet and be of sufficient weight for proper compaction.
  2. The tamping heads and cleaner bars shall be properly maintained, and the spaces between the tamping feet shall be kept clear of materials which impair the effectiveness of the tamping rollers.
- M. Water packing or jetting shall not be allowed for compaction of any backfill.
- N. Embankment keyway shall be moisture conditioned and compacted using sheepsfoot roller before placing any engineered fill or fill.

### 3.9 EXCAVATION FOR CONCRETE STRUCTURES

- A. Identify required lines, levels, contours, and datum.
  1. Stake and identify the extent of all earthwork operations prior to starting work.
- B. Carefully excavate to the established lines and grades shown on the drawings, or as revised and approved by the engineer, to provide a firm, uniform, and unyielding foundation for the proposed structures.

EARTHWORK  
31 05 00-10

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

- C. Excavations for all footings, piers, finished walls and grade beams shall be sufficiently large so that forms for concrete may be properly placed, removed, and inspected.
- D. The bottoms of footings, piers, slabs, walls, and grade beams to receive concrete shall be level before placing concrete. All foundations shall rest on firm bearing compacted fill.
  - 1. The exposed subgrade surface shall be scarified to a depth of 8 inches, conditioned to optimum moisture content and compacted to at least 95 percent of the maximum dry density.
- E. Provide required shoring, sheeting, and slope layback necessary to protect the excavation, as needed, for the safety of the employees and as required by applicable State and Federal laws. Provide suitable barricades for public safety, regardless of trench depth.
- F. Upon completion of excavation and before placing forms or structures, notify the Engineer who will inspect the excavation and may take tests to determine soil-bearing values. If soil conditions in excavations are not in accordance with the geotechnical report and seem to indicate that footings need not be carried down as deep as shown, or must be carried deeper, the changes shall be made by the Contractor after approval by the Engineer.
  - 1. Over excavation shall be required a minimum of 2 feet below and 5 feet laterally beyond all concrete structures, unless shown otherwise on the Plans.
  - 2. Engineered fill in over excavated areas shall be onsite fill material, free from organic materials or deleterious substances.
- G. Use suitable material removed from excavation before placing backfill.
- H. Verify that stockpiled fill to be reused is approved by the Engineer.
- I. Verify areas to be backfilled are free of debris, snow, ice, or water, and surfaces are not frozen.
- J. Unless otherwise shown in the Plans, all backfill shall conform to Section 19-3 of the State Standard Specifications.
- K. Do not place backfill against concrete until concrete has cured sufficiently as specified in Section 03 30 00 – Cast-In-Place Concrete.
- L. Place and compact common fill material in continuous layers not exceeding eight inches loose depth.
- M. Employ a placement method so not to disturb or damage pipes or utilities.
- N. Maintain optimum moisture content of backfill materials to attain required compaction density.

EARTHWORK  
31 05 00-11

### 3.10 UTILITY INSTALLATION

- A. Install utility marking as specified in section 33 05 26 - Utility Line Marking.
- B. Utility Installation shall be according the Division 33 Utilities. If not otherwise specified shape the trench bottom to ensure uniform contact with the full length of the installed line and remove any sharp-edged materials that might damage the line. Compaction shall be maintained beneath the line.

### 3.11 SAND CEMENT SLURRY, CONCRETE ENCASEMENT AND THRUST BLOCKS

- A. Concrete
  - 1. Place as shown on the Plans and in accordance with Sections 03 30 00 - Cast-In-Place Concrete.
- B. Slurry Cement
  - 1. Slurry Cement is also referred to as Controlled Low Strength Material (CLSM).
  - 2. Place as shown on the plans and in accordance with State Standard Specifications, Section 19-3.03F.
- C. Thrust Blocks
  - 1. Place as shown on the Plans and in accordance with Sections 03 30 00 - Cast-In-Place Concrete.

### 3.12 CONTROL OF WATER

- A. The contractor shall keep all excavation free from water. Furnish, install, maintain, and operate all necessary pumping and other equipment for dewatering of excavations. The contractor shall at all times have on the project sufficient pumping equipment for immediate use, including stand by pumps for use in case other pumps become inoperable.
- B. The dewatering operation shall be continuous, so that the excavated areas are kept free from water during the construction, until backfill has been placed to a sufficient height to anchor the work against possible floatation.
- C. Dewatering devices shall be adequately filtered to prevent the removal of fines from the soil.
- D. Repair any damage caused by the failure of any part of the protective works. Remove temporary protective works when they are no longer needed for dewatering purposes.
- E. Any drain rock required in the trench bottom to convey water or stabilize wet soil shall be included at no extra cost to the owner.

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

- F. Provision of dewatering and dewatering equipment shall be considered part of the project with no additional compensation allowed.

**3.13 SURPLUS MATERIAL**

- A. Unless otherwise specified, surplus suitable excavated material shall be used to widen embankments uniformly or to flatten slopes, or it shall be disposed of in a uniform manner in designated surplus material areas.

**3.14 SHORING AND SHEETING**

- A. Construct and maintain all shoring, sheeting, and slope layback necessary to protect the excavation, as needed, for the safety of the employees and as required by applicable State and Federal laws. Provide suitable barricades for public safety, regardless of excavation depth.

**3.15 UNSUITABLE MATERIAL**

- A. Unsuitable material shall be excavated and disposed of in a lawful manner off the project site in accordance with Section 31 23 35 - Disposal of Materials. All disposal shall be approved by the Engineer prior to initiating the work.

**3.16 SURFACE FINISH WORK**

- A. Open Areas: Grade all disturbed areas, blending with adjacent terrain without a noticeable break. Bring all sub-grades to specified contours, even and properly compacted.
- B. Drainage Swales: Restore drainage ditches to appropriate line and grade, using approved surface erosion prevention techniques and as indicated on the Contract Documents.
- C. Clean Up: Remove all rubbish and excess material for disposal as approved, and leave area in a neat, satisfactory condition.

**3.17 TOLERANCES**

- A. Tolerances are defined as allowable variations from specified lines, grades, and dimensions. The intent of this paragraph is to establish tolerances that are consistent with modern construction practice yet are governed by the effect that permissible variations may have upon the construction.
- B. Variations from specified lines, grades, and dimensions as specified by the Engineer:

EARTHWORK  
31 05 00-13

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

|                                                                                                                                                |            |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Finish Grading Tolerance:                                                                                                                      | ±0.10 foot |
| When the material to be placed on the grading plane is to be paid for by the cubic yard, the grading plane at any point shall be not more than | ±0.10 foot |
| When structures are to be placed directly on compacted subgrade on the grading plane of the subgrade at any point shall not vary more than     | ±0.10 foot |
| Variation in elevation for invert of canal from those specified                                                                                | ±0.10 foot |
| Variation from specified width of section at any height                                                                                        | ±0.25 foot |

- C. Variations defined as the distance between the actual dimension and grade of the canal cross section or alignment and the specified position in the plan for the canal cross section or alignment. Plus or minus variations indicate a permitted actual position up or down and in or out from the specified position in the Plans. Variations not designated as plus or minus indicate the maximum deviation permitted between designated successive point on the completed element of construction.

**END SECTION**

EARTHWORK  
31 05 00-14

**SECTION 40 05 21**  
**TAPPING SADDLES SLEEVES AND VALVES**

**PART 1 GENERAL**

**1.1 WORK INCLUDED**

- A. This section includes materials, testing, and installation of tapping sleeves, tapping valves, and tapping saddles for connection to piping.

**1.2 RELATED WORK**

- A. Section 09 90 00 – Painting and Coating
- B. Section 33 46 18 – High Density Polyethylene Pipe and Fittings
- C. Section 40 05 00 – Pipe & Fittings
- D. Section 40 05 24 – Steel Process Pipe

**1.3 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
- B. American Water Works Association (AWWA)

**1.4 SUBMITTALS**

- A. Submittals shall be in accordance with the General and Special Provisions.
- B. Submit shop drawings in accordance with the General and Special Provisions.
- C. Submit manufacturer's catalog data and detail construction sheets showing all valve and sleeve parts. Describe each part by material of construction, specification (such as AISI, ASTM, SAE, or CDA), and grade or type.
- D. Show dimensions including laying lengths.
- E. Show linings and coatings. Submit manufacturer's catalog data and descriptive literature.
- F. Submit six copies of a report verifying that the interior linings and exterior coatings have been tested for holidays and lining thickness. Describe test results and repair procedures for each part. Do not ship valves or sleeves to project site until the reports have been returned by the Owner's Representative and marked "Resubmittal not required."

## **PART 2 PRODUCTS**

### **2.1 GENERAL**

- A. Tapping saddles shall be designed to withstand a minimum working pressure equal to the working pressure of the system, but not less than 150 psi.
- B. Tapping saddles may be used for pipeline taps concurrent with new construction. Tapping saddles shall be limited to a maximum nominal outlet diameter of 10 inch.

### **2.2 TAPPING SADDLES**

- A. Tapping saddles used for taps on HDPE Pipe shall be 304 Stainless Steel bodies conforming to ASTM A240. They shall have three 304 stainless steel bands. The bolts, nuts, and washers shall conform to the material requirements specified in Section 33 46 18. Triple Bands with six bolts (three on either side of saddle) shall be a minimum of 18-8 grade stainless steel all-thread rod with a flat washer, lock washer, and PTFE coated hex nuts. The gasket shall be EPDM; formulated for water. Gaskets shall be cemented in place on the saddle bodies prior to shipment from the manufacturer. The saddle boss shall be tapped with standard iron pipe threads. The saddle bodies shall be performed at the factory to fit HDPE Pipe IPS OD. Each body shall be marked with the OD to which it has been formed. Saddles for taps on HDPE pipe shall be Morrill Industries 1096 Series Clamp On Saddle or Engineer approved equivalent.

### **2.3 TAPPING SLEEVES**

- A. NOT USED.

### **2.4 VALVES**

- A. NOT USED.

## **PART 3 EXECUTION**

### **3.1 STORAGE AND HANDLING**

- A. Saddles and sleeves used for water main taps shall be stored and handled in their original containers, which shall not be unpacked until 24 hours prior to installation, except for inspection. Saddles and sleeves shall be maintained free from dirt and foreign matter and shall be stored on wooden pallets in their original containers.

### **3.2 INSTALLATION OF TAPPING SADDLES**

- A. Installation of saddles shall be in accordance with the manufacturer's recommendations.
- B. The hole drilled or cut in the main shall be equal to the stated nominal size of the threaded tap on the saddle.

CITY OF LOS BANOS  
BASIN AND STORMWATER CAPTURE PROJECT

- C. Holes cut in HDPE pipe may be accomplished by either drilling or the use of a hole saw.
- D. The outside of the pipe shall be cleaned thoroughly of all dirt, grease, oil, and other foreign matter prior to installing the saddle.
- E. Bolts shall be drawn up in an acceptable pattern and torqued to the manufacturer's specifications.

**END SECTION**

TAPPING SADDLES SLEEVES AND VALVES  
40 05 21-3

**This Page is Intentionally Left Blank**