### SECTION 203 – EXCAVATION AND EMBANKMENT

**DESCRIPTION**

**203.01.01 GENERAL**

***ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

B. The compacted subgrade shall be maintained at optimum moisture content until placement of an aggregate base course.

C. It is expected that all excavation will require removal of various types of material. The cost for the excavation of all material encountered including, but not limited to, cemented soils and rock shall be considered as included in the unit prices bid for pay items requiring excavation and no additional compensation will be allowed.

**CONSTRUCTION**

**203.03.01 ROADWAY**

***ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

E. It is expected that roadway, trench, channel, structure, drainage and impoundment excavation will require removal of various types of material, including cemented soils and rock. The cost for the excavation of cemented soils and rock encountered shall be considered as included in the unit prices bid for pay items requiring excavation and no additional compensation will be allowed.

NOTE TO SPEC WRITER: Include the following two subsections as needed for your project.

F. Vibration monitoring by a qualified professional shall be conducted by the CONTRACTOR during excavation of cemented soils. The CONTRACTOR shall be required to conduct impact assessment tests of the equipment excavating cemented soils prior to construction. The CONTRACTOR shall submit an Impact Assessment Test Plan and Impact Assessment Test Results. The frequency and amplitude of the vibratory equipment shall be calibrated and used to measure ground velocity for conformance to the current regulatory limit of 0.5 inch per second peak ground velocity at the nearest affected structure. The measurements shall comply with the recommendations of the “Office of Surface Mining, Blasting Guidance Manual, 1987.” The cost for vibration monitoring during excavation of cemented soils shall be considered as included in the unit price bid for pay items requiring excavation and no additional compensation will be allowed. (Point this item out at Pre-Bid Conference and make sure it is included in the basis of payment for excavation items.)

G. Excavations near mapped alluvial faults shall be inspected by a qualified professional prior to RCP/RCB installation. If a fault is encountered, appropriate remedial action shall be taken by the CONTRACTOR per geotechnical recommendations. (Point this item out at Pre-Bid Conference and make sure it is included in the basis of payment for items requiring fault remediation.)

**203.03.04 BLASTING**

***DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:***

A. Blasting shall not be permitted.

**203.03.16 EMBANKMENT MATERIALS**

***ADD THE FOLLOWING PARAGRAPH TO THIS SUBSECTION:***

F. [FOR DETENTION BASINS, ADD PARAGRAPH ON STRUCTURAL FILL AND COMPACTED FILL SOIL REQUIREMENTS]

***ADD THE FOLLOWING SUBSECTIONS TO THIS SECTION:***

**203.03.70 OVEREXCAVATION AND BACKFILL**

NOTE TO SPEC WRITER: Consider adding an item for “Overexcavation and Backfill” in areas where unsuitable soils are expected but the trench/pavement section doesn’t call out standard overexcavation as part of the bid item

A. Where overexcavation below the depths as shown on the plans or required by the specifications is necessary to remove unsuitable material, the Engineer may require the Contractor to remove the unsuitable materials and backfill to the finished graded section with Type I aggregate base, conforming to 3-inch size per subsection 704.03.03, compacted to a minimum of 90% of ASTM D1557 Modified Proctor and in accordance with the methods in the USS.

B. Unless otherwise provided in the Special Provisions, overexcavation and backfill below the limits shown on the plans will be paid for as “Extra Work”.

**203.03.71 HAZARDOUS MATERIAL**

A. Hazardous material shall be defined as material or water contaminated with volatile organic compounds, inorganic non-metals, petroleum hydrocarbons or other contaminates as specified by the Nevada Division of Environmental Protection Agency (NDEP).

B. The Contractor shall retain a Certified Environmental Manager (CEM) for making periodic inspection of the project for potential hazardous materials. The CEM shall inspect the project a minimum of: once a quarter for all projects; once a month for projects requiring trenching and/or dewatering; and as per environmental regulatory requirements. In addition, the CEM will be available for inspection of the project as directed by the Engineer and/or NDEP should material be uncovered that may be potential hazardous material.

C. When potential hazardous material is encountered or reasonably suspected with the project, the Contractor shall:

1. Immediately contact the CEM, Engineer and City of Las Vegas Environmental Officer.
2. Have the CEM perform the inspection of the potential hazardous material and if required perform the inspection for the removal and disposal of the hazardous material.
3. Retain a certified environmental firm to perform the required tests and sampling for hazardous materials and/or contaminants.
4. If required, perform the removal and disposal of the hazardous materials as directed by the CEM, Engineer and/or City of Las Vegas Environmental Officer in coordination with NDEP.
5. Submit a copy of the Waste Manifest(s) from contaminated or hazardous materials disposal.

D. If encountered, investigation and removal/disposal of hazardous material will be paid for as "extra work", as approved by the Engineer. Removal of contaminated soil, if encountered shall be paid per TON.

NOTE TO SPEC WRITER: Any work in Symphony Park will need to add Contaminated Soil Sections

**ADD THE FOLLOWING IF CONTAMINATED SOIL IS FOUND:**

**203.03.72 CONTAMINATED SOIL MANAGEMENT**

1. Concentrations of Volatile Organic Compounds (VOC’s) were found in XXXX as provided in the “Report Title” report dated XXX (provided for informational use only in Appendix XX).
2. The Contractor will be responsible for preparing and submitting a CEM-certified Soil and Groundwater Management Plan for approval by the City and NDEP prior to construction start.  The Plan must address the methods for identifying, handling, and disposing of any hazardous materials encountered during the construction phases of this project. The Contractor shall prepare a Health and Safety Plan (HASP) specific to the site which establishes procedures to protect worker’s health and minimizes worker’s exposure to contaminants.
3. Once approved, the Soil and Groundwater Management Plan shall be submitted to the Engineer and City of Las Vegas Environmental Officer.

**ADD THE FOLLOWING FOR DETENTION BASINS:**

**203.03.73 EXCAVATION**

A. It is expected excavation for storm drain and detention basin items will require removal of various types of material, including cemented soils and rock (i.e. caliche).

B. All costs for excavation for trenches, storm drain, culverts, pipes, and structures shall be incidental in the various Bid items. Separate payment for excavation, regardless of the type, amount, or methods required, will not be made.

C. Prior to construction, baseline distress evaluation by a qualified professional shall be conducted by the Contractor. The evaluations shall document existing distress to the structures and other improvements in the area of work.

D. Vibration monitoring by a qualified professional shall be conducted by the Contractor during excavation of cemented soils. The Contractor shall be required to conduct impact assessment tests of the equipment excavating cemented soils prior to construction. The Contractor shall submit an Impact Assessment Test Plan and Impact Assessment Test Results. The frequency and amplitude of the vibratory equipment shall be calibrated and used to measure ground velocity for conformance to the current regulatory limit of 0.5 inch per second peak ground velocity at the nearest affected structure. The measurements shall comply with the recommendations of the “Office of Surface Mining, Blasting Guidance Manual, 1987.” The cost for vibration monitoring during excavation of cemented soils shall be considered as included in the unit price bid for pay items requiring excavation and no additional compensation will be allowed.

E. The Contractor shall submit to the Owner a plan detailing his proposed excavation techniques. This excavation plan shall include the results of a seismic survey performed by a certified seismic survey firm. The plan must show all proposed locations of excavation operations utilizing methods involving headache balling, hoe ram, or other techniques. The excavation plan shall include recommendations from certified seismic survey firm for limiting ball weights, height of drop, etc. for all areas headache balls and/or hoe rams techniques are proposed. In addition, the plan must include the results of a pre-excavation survey and a seismic monitoring plan. The excavation plan shall also include as a minimum; detailed examination of adjacent structures, including video taping and installation of crack monitoring tape along existing structural cracks. The excavation plan must be approved by the Owner prior to construction.

F. If damage to structures becomes evident, the Contractor shall immediately cease his excavation operations and submit a new excavation plan detailing new or modified methods to end the adverse affects. The Contractor shall make no claims for any delay caused by the re‑submittal nor any additional expense resulting from changing his proposed excavation methods.

G. The excavation plan shall be updated and resubmitted to the Owner any time the Contractor proposes altering his methods. The plan(s) will be considered shop drawings and will be handled as such. The Contractor shall make no claim for any losses resulting from delays during the review of these submittals in accordance with the limitations detailed for shop drawings in these specifications.

H. The Contractor’s methods for excavation are solely his responsibility. Approval of the excavation plan by the Owner will in no way limit the Contractor’s liability regarding property damaged and subsurface damage beyond the excavation limits by his operations, nor will it alter the Contractor’s sole responsibility for the safety of his operations. The Contractor shall be responsible for all damage caused by his excavation operations and be responsible for answering all complaints. Provide the Owner with advance warning of the use of excavation techniques which may lead to property damage, to review the proposed techniques, to confirm general compliance with these specifications, and to allow monitoring of the excavation methods.

I. Excavations near mapped alluvial faults shall be inspected by a qualified professional prior to RCP/RCB installation. If a fault is encountered, appropriate remedial action shall be taken by the Contractor per geotechnical recommendations.

**203.03.74 COMPACTED FILL**

A. Compacted fill will consist of native material excavated, hauled, screened, placed, and compacted within the neat lines shown on the Drawings and as specified in Subsection 203.03.16.

B. All fill materials shall be placed in continuous horizontal layers in maximum 8-inch loose lifts. Each layer shall be moisture conditioned to within 2 percent of optimum moisture content and compacted by rolling with compaction equipment methods to at least 90 percent of the maximum dry density as determined by ASTM D1557.

C. The existing soil in areas to receive fill along the dam embankment shall be scarified to a minimum of 8 inches, reworked, moisture conditioned, and recompacted to at least 90 percent of the maximum density as determined by ASTM D1557. The depth of excavation, replacement, and compaction may be reduced or increased by the Owner's representative depending on his visual inspection of uncovered soils. Hard cemented soils may result in a decrease in required excavation depth while partially cemented soils or soft spongy or deleterious soils may result in an increase in required excavation depth. Any increase in depth shall comply with Subsection 203.03.70, Over-Excavation and Backfill.

**203.03.75 EMBANKMENT PROTECTION**

A. Completed excavation and embankment grading planes and other disturbed areas within the limits of construction shall be protected by soil stabilizer placed on all exposed soil surfaces. Soil stabilizer shall be applied to all disturbed soil areas not specified to be covered with riprap, decomposed granite, aggregate base, asphalt pavement or other surfacing. Unless otherwise specified in these Special Provisions, herbicide shall not be placed on any surfaces within the detention basin.

B. Apply soil stabilizer within 14 days of when no further disturbance of the surface will be made. Protect all structures, walls, landscaping, etc. from overspray. Store and handle soil stabilizer in accordance with the manufacturer’s recommendations. Do not spray when weather conditions are windy. Windy conditions are defined as a sustained wind of 8 mph or more, or any condition that may cause dispersal of material to be difficult or inaccurate. Soil stabilizer shall form a crust like barrier within 4 to 8 hours. The use of accelerators is recommended.

C. No soil stabilizer shall be used which is not on the Qualified Products List established by the Nevada Department of Transportation. Soil stabilizer shall be applied at the manufacturer’s recommended application and dilution rates.

D. Add a color pigment to the soil stabilizer at the time of application. Apply a suitable pigmentation to the soil stabilizer slurry such that is used for pigmenting concrete at an application rate of 50 pounds per acre. The color of the pigmentation shall be approved by the Engineer.

**203.03.76 QUALITY CONTROL TESTING**

A. Quality control testing will be performed for Dam Safety Permit compliance in accordance with the State Engineers Office. The testing will be performed by an independent testing laboratory.

B. The Contractor shall schedule his operations so as to allow and facilitate quality control testing by the independent laboratory.

C. The following standard tests will be used as a basis for classifying soil materials and for control testing:

|  |  |
| --- | --- |
| Test Designation | Test |
|  |  |
| ASTM C136  AASHTO T27 | Test for Sieve or Screen Analysis of Fine and Course Aggregates |
|  |  |
| ASTM D1556 | Density of Soils In-Place by the Sand-Cone Method |
|  |  |
| ASTM D1557  AASHTO T180 | Moisture-Density Relations of Soils and Soil Aggregate Mixing Using 10 Pound Rammer and 18-Inch Drop |
|  |  |
| AASHTO T310 | In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) |
|  |  |
| ASTM D4318  AASHTO T89/T90 | Plasticity Index of Soils |
|  |  |
| AWWA 4500E | Maximum Sulfate Content |
|  |  |
| Southern Nevada Amendments to the Building Code | Maximum Expansive Potential 60 psf |
|  |  |
| ASTM C117 | Test for Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing |
|  |  |
| ASTM D422 | Particle-Size Analysis of Soils |

D. Two representative soil samples of imported fill will be performed at the beginning of construction. Additional tests will be conducted to classify and establish the moisture density relationship for each type of soil encountered in areas that may yield excavated materials suitable for placement in embankment. Whenever the material encountered is different from previously tested material, a new set of classification and moisture-density tests will be performed.

E. The number of locations of in-place density tests for embankment and compacted fill construction shall be sufficient to determine that each layer of material placed in embankment has been compacted adequately to obtain the density specified therefore. The minimum number of in-place density tests by ASTM D1556 and AASHTO T310 procedures will be one for each 5,000 square feet per 8-inch lift of fill.

F. The following standard tests will be used for concrete material quality control testing:

|  |  |
| --- | --- |
| Test Designation | Test |
|  |  |
| ASTM C1064 | Temperature of Freshly Mixed Portland Cement Concrete |
|  |  |
| ASTM C143 | Slump of Hydraulic Cement Concrete |
|  |  |
| ASTM C173/C231 | Air Content of Freshly Mixed Concrete |
|  |  |
| ASTM C39 | Compressive Strength of Cylindrical Concrete Specimens |
|  |  |

G. The concrete will be tested a minimum of once per day and per every 100 cubic yards placed.

H. The above frequency of tests is approximate and is provided for the Contractor’s information in planning Contractor’s work and interruptions during testing. The actual number of tests will depend on the variability of materials being placed and uniformity of the Contractor’s placement operations.

I. Quality control test data will be reviewed and submitted monthly. All quality control test data will be compiled in a final report and submitted at the completion of work for Dam Safety Permit compliance. All reports submitted to the City shall be stamped by a Nevada Registered Professional Engineer.

**203.03.76 CALICHE EXCAVATION**

A. Caliche is anticipated to be encountered on this project and is defined as a rock-like material that occurs in soil deposits erratically in thickness, hardness, and lateral extent and it is therefore difficult to predict in terms of interference with below-grade construction. Contractor shall take adequate precautions to reduce the potential for vibrational damage to adjacent or nearby structures when using heavy impact equipment during removal of caliche. In the event structures are damaged, Contractor be responsible for effecting all repairs.

B. Generation of oversized material (rocks or hard chunks greater than 6 inches nominal diameter) shall be anticipated by Contractor when excavating caliche. Oversize material shall be crushed prior to being used as structural fill, backfill, and compacted fill, or disposed of in a suitable manner.

**METHOD OF MEASUREMENT**

**203.04.01 MEASUREMENT**

***ADD THE FOLLOWING TO THIS SUBSECTION:***

NOTE TO SPEC WRITER: IF YOU ARE INCLUDING ROADWAY EXCAVATION AS A BID ITEM, MAKE SURE TO EXPLAIN IN DETAIL THE LIMITS OF WHAT IS COVERED BY ROADWAY EXCAVATION, INCLUDING A DETAIL IN THE PLANS THAT SHOWS THE AREAS COVERED BY ROADWAY EXCAVATION. CONSIDER REMOVING EXCAVATION FROM 613 OR SIMILAR BID ITEMS IF IT IS INTENDED TO HAVE ROADWAY EXCAVATION COVER THE ENTIRE ROADWAY PRISM.

The quantity of [FILL IN ITEM DESCRIPTION] will be measured per [UNIT].

No direct measurement shall be made for [FILL IN ITEM DESCRIPTION].

Overexcavation and backfill volumes will be measured by the average end area method of the over-excavated material in its original state. If for any reason it is impossible or impractical to measure quantities by average end areas, the Engineer will compute the quantities by a method which, in the Engineer’s opinion, is best suited to obtain an accurate determination. This quantity will include both the cost for removing the unsuitable material and the cost to replace it with suitable backfill.

**ADD THE FOLLOWING IF CONTAMINATED SOIL IS FOUND:**

The quantity of CONTAMINATED SOIL EXCAVATION AND DISPOSAL will be measured per ton.

The quantity of NON-CONTAMINATED SOIL EXCAVATION AND DISPOSAL will be measured per ton.

**ADD THE FOLLOWING FOR DETENTION BASINS:**

The quantity of DETENTION BASIN EXCAVATION will be measured per cubic yard.

The quantity of QUALITY CONTROL TESTING will be measured per lump sum.

The quantity of Compacted Fill will be measured for payment by cubic yard.

Over-excavation and backfill volumes will be measured by the average end area method of the over-excavated material in its original state. If for any reason it is impossible or impractical to measure quantities by average end areas, the Engineer will compute the quantities by a method which, in the Engineer’s opinion, is best suited to obtain an accurate determination. This quantity will include both the cost for removing the unsuitable material and the cost to replace it with suitable backfill.

The quantity of Detention Basin Soil Stabilization will be measured for payment by acre.

**BASIS OF PAYMENT**

**203.05.01 PAYMENT**

***ADD THE FOLLOWING TO THIS SUBSECTION:***

The accepted quantity of [FILL IN ITEM DESCRIPTION ROADWAY EXCAVATION, DRAINAGE EXCAVATION, CHANNEL EXCAVATION, etc.] will be paid for at the contract unit price of cubic yards and shall conform to the requirements of subsection 203.05.01 of the Uniform Standard Specifications.

The accepted quantity of [FILL IN ITEM DESCRIPTION] will be paid for at the contract unit price of [UNIT] and shall include all materials, equipment and labor required including, but not limited to, [FILL IN] and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer.

Unless otherwise provided in the Special Provisions, no payment will be made for [FILL IN ITEM DESCRIPTION] as such. The cost thereof shall be considered as included in the price bid for construction or installation of the items to which [FILL IN ITEM DESCRIPTION] is required.

The CEM retained by the Contractor will not be paid for directly, but will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

Unless otherwise provided in the Special Provisions, dewatering will not be paid for directly and will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

**ADD THE FOLLOWING IF CONTAMINATED SOIL IS FOUND:**

All costs for the preparation and execution of the Soil and Groundwater Management Plan and HASP are considered to be included in other items of work and no additional payment will be made therefore.

The accepted quantity of CONTAMINATED SOIL EXCAVATION AND DISPOSAL will be paid at the contract unit price per ton and shall include all materials, equipment, and labor required including, but not limited to: excavation; installation of excavation support systems, if required; onsite testing; documenting location of contaminated material; handling; costs of securing, lining and operating (including BMPs) a temporary stockpile site; temporarily stockpiling of contaminated material; sample and analyze material using certified laboratory; perform waste profile analysis for acceptance by approved landfill/recycling facility; transport of material in covered trucks or enclosed containers; delivery to an approved landfill/recycling facility; documentation including waste manifests, bills of lading, and acceptance documents including certified scale weight slips; and all other items necessary to complete the Work as shown on the plans and as specified herein. The bid price shall include all costs due to contamination of the soil that are over and above the cost of Trench Excavation and Backfill. The cost of Trench Excavation and Backfill is not paid for separately and is included in the price bid for construction of the items to which Trench Excavation and Backfill is required. Further, the cost of Trench Excavation and Backfill assumes excavation, handling, and backfill of non-contaminated material.

The accepted quantity of NON-CONTAMINATED SOIL EXCAVATION AND DISPOSAL will be paid at the contract unit price per ton for soil that was identified as potentially contaminated in the excavation and was found to be non-contaminated based on laboratory testing. The unit price per cubic yard shall include all materials, equipment, and labor required including, but not limited to: excavation; installation of excavation support systems, if required; on-site testing; documenting location of potentially contaminated material; handling; costs of securing, lining and operating (including BMPs) a temporary stockpile site; temporarily stockpiling material; sample and analyze material using certified laboratory; transport material using non-contaminated procedures to a disposal site or re-use material as fill if the material meets fill specifications, including all supervision, testing, documentation, and all other items necessary to complete the work as shown on the plans and as specified herein. The bid price shall include all costs due to contamination of the soil that are over and above the cost of Trench Excavation and Backfill. The cost of Trench Excavation and Backfill is not paid for separately and is included in the price bid for construction of the items to which Trench Excavation and Backfill is required. Further, the cost of Trench Excavation and Backfill assumes excavation, handling, and backfill of non-contaminated material.

The accepted quantity of BACKFILL OF OVEREXCAVATION will be paid at the contract unit price per cubic yard and shall include all materials, equipment, and labor required including, but not limited to: furnishing clean non-contaminated soil from off-site borrow source or from on-site excavations with non-contaminated soils. The price shall include material testing for compliance with fill specifications; excavation; hauling; temporary stockpiling, if required; and all other items necessary to complete the work as shown on the plans and as specified herein.

The quantities of CONTAMINATED SOIL EXCAVATION AND DISPOSAL, NON-CONTAMINATED SOIL EXCAVATION AND DISPOSAL, and BACKFILL OF OVEREXCAVATION were estimated as a basis for comparing bids.

**ADD THE FOLLOWING FOR DETENTION BASINS:**

The accepted quantity of DETENTION BASIN EXCAVATION will be paid for at the contract unit price per Cubic Yard and shall include all labor, equipment and materials necessary to complete the work, including but not limited to, saw cutting of existing paving; scarifying; pulverizing; grading; compaction; minor brush, trash and debris removal; all miscellaneous grading of shoulders, ditches and transitions; hauling; handling; stock piling and rehandling; screening; crushing; watering; disposal; and all other items necessary to complete the work as shown on the Plans, as specified herein and as directed by the Engineer. **[IF APPLICABLE ADD: Payment for Detention Basin Excavation shall also include the cost of caliche excavation including rehandling if permitted to use as riprap, screening, watering, disposal, heavy-duty ripping, heavy-duty backhoe, headache ball, hoe-ram, rocksaw, dewatering, and all other items incidental and appurtenant to this work. Hauling excess material to the BLM site will be paid for as specified below for the item for Hauling to BLM Site. Note to spec writer: hauling to BLM site may be a requirement if BLM owns mineral rights.]**

The quantity of excavation / backfill will not be paid for directly, but will be included in the unit bid price for the respective improvements that excavation is a part. Payment for baseline distress evaluation and vibration monitoring will not be paid for directly but will be included in the unit bid price for the respective improvements that excavation is a part.

The accepted quantity of QUALITY CONTROL TESTING will be paid for at the contract unit price per lump sum and shall include all testing, labor, tools, equipment and coordination with outside testing laboratories to comply with all test requirements necessary to complete the work. Testing by the Contractor required as part of other bid items shall not be paid for under this pay item but will be considered incidental to the pay items requiring the tests.

Failure to submit a monthly report, as specified in subsection 203.03.74 “Quality Control Testing”, will be grounds for the Engineer to deduct up to ten percent (10%) of the monthly progress payment until the Contractor is in compliance.

The accepted quantity of Compacted Fill will be paid for at the Contract unit price bid per cubic yard, which shall be full compensation for providing all labor, equipment, and materials necessary to complete the work, including but not limited to, access to location within the specified construction limits, clearing and grubbing, crushing, processing, screening, hauling, placing, blending, watering, compacting, and all other items incidental, appurtenant, and necessary to complete the work as shown on the Drawings, as specified, and as directed by the Engineer.

The accepted quantity of Detention Basin Soil Stabilization will be paid for at the contract unit price bid per acre, which shall include all permits, labor, materials, equipment, and all other items incidental, appurtenant, and necessary to complete the work as shown on the Drawings, as specified herein, and as directed by the Engineer.

The CEM retained by the Contractor will not be paid for directly, but will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

Unless otherwise provided in the Special Provisions, dewatering will not be paid for directly and will be included in the unit prices bid for pay items requiring excavation and no additional payment will be allowed.

Payment will be made under:

|  |  |  |  |
| --- | --- | --- | --- |
| **ITEM NO.** | **ITEM DESCRIPTION** | | **UOM** |
| 203.XXXX | CHOOSE FROM:  ROADWAY EXCAVATION  DRAINAGE EXCAVATION  CHANNEL EXCAVATION  BORROW EXCAVATION  SELECTED BORROW  SELECTED BORROW EXCAVATION | | CY |
|  | V-TYPE DITCHES | | LF |
|  | ADD THE FOLLOWING FOR DETENTION BASINS:  DETENTION BASIN EXCAVATION | | CY |
|  | QUALITY CONTROL TESTING | | LS |
|  | COMPACTED FILL | | CY |
|  | DETENTION BASIN SOIL STABILIZATION | | AC |
|  | |
|  | ADD THE FOLLOWING IF CONTAMINATED SOIL IS FOUND:  CONTAMINATED SOIL EXCAVATION AND DISPOSAL | | TON |
|  | NON-CONTAMINATED SOIL EXCAVATION AND DISPOSAL | | TON |

**END OF SECTION 203**