



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAUT, P.E.
SECRETARY

January 14, 2020

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **455**
Proposed Specification: **SP4550519DB Structures Foundations (Design Build).**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Special Provision.

The changes are proposed by Juan Castellanos from the State Construction Office to clarify that pay items are not applicable in Design Build projects. The change also clarifies that the certification letter needs to include a statement that the GFDEOR has supervised the inspection of the foundations.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Strickland, P.E.
State Specifications Engineer

DS/rf

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

STRUCTURES FOUNDATIONS (DESIGN BUILD).

(REV ~~11-725-2019~~)

SUBARTICLE 455-5.19 is deleted and the following substituted:

455-5.19 Foundation Certification Packages: Submit certification packages of pile foundations to the Engineer prior to Pile Verification Testing. A separate Foundation Certification Package must be submitted for each foundation unit. A foundation unit is defined as all the piles within one bent or pier for a specific bridge for each phase of construction. Each Foundation Certification Package shall contain an original certification letter signed and sealed by the GFDEOR certifying the piles have the required axial capacity including compression and uplift, lateral stability, pile integrity, ~~and settlements~~ will not affect the functionality of the structure, and that the inspection of the pile installation was performed under the supervision of the GFDEOR. The package shall also include all pile driving logs, EDC records, all supplemental dynamic testing raw data and analyses for the foundation unit, and the signed and sealed evaluation performed to address out of tolerance piles in accordance with 455-5.16.5. The certification shall not be contingent on any future testing or approval by Engineer.

ARTICLE 455-11 is deleted:

~~455-11 Method of Measurement (All Piling).~~

~~455-11.1 General:~~ The quantity to be paid for will be the length, in feet, furnished, placed, and accepted according to the authorized lengths list, including any additions and excluding any deletions thereto, as approved by the Engineer.

~~No adjustments in the length, in feet, of piling will be made if cut-offs are required after the pile has been driven to satisfactory bearing.~~

~~455-11.2 Prestressed Concrete Piling:~~

~~455-11.2.1 Length:~~ The furnished length of precast concrete piles will be considered as the overall length from head to tip. Final pay length will be based on the casting length as authorized in accordance with 455-5.15.2 subject to provisions of 455-11.2.2 through 455-11.2.4, 455-11.8, 455-11.9 and 455-11.12.

~~455-11.2.2 Driving of Unplanned Epoxy-Bonded Dowel Splice:~~ If a pile is driven below cut-off and satisfactory bearing is not obtained, and additional driving is required after construction of a satisfactory splice, an additional 10 feet of piling will be paid for the additional driving. This compensation for driving of splice, however, will not be allowed for test piles that are spliced and redriven.

~~455-11.2.3 Extracting Piles:~~ In the event that a pile is driven below cut-off without obtaining the required bearing, and the Engineer elects to have the pile extracted and a longer pile substituted, the pile extraction will be paid for as Unforeseeable Work. In the event a pile is damaged or mislocated, and the damage or mislocation is determined to be the Department's responsibility, and the Engineer elects to have the pile extracted, the pile extraction be paid for as Unforeseeable Work. If a replacement pile is required, compensation will be made under the item for piling, for both the original pile and replacement pile. Redriving of an extracted and undamaged pile will be paid for at 30% of the Contract unit price for piling.

~~_____ The Contractor may substitute a longer pile in lieu of splicing and building up a pile. In this event, the Contractor will be paid for the original authorized length of the pile, plus any additional length furnished by the Contractor up to the authorized length of the build up, as piling. The Contractor will be paid 30 feet of piling as full compensation for extracting the original pile.~~

~~_____ **455-11.2.4 Underwater Driving:** When the Contractor selects one of the optional underwater driving methods, payment will be made by selecting the applicable method from the following:~~

~~_____ 1. Using a pile longer than the authorized length: Measurement for piling will be made only for the authorized length at that location unless the length of pile from cut-off elevation to the final tip elevation is greater than the authorized length, in which case payment for piling will be made from cut-off elevation to final tip elevation. No payment will be made for pile splice, when this option is selected, unless the pile is physically spliced and the splice is driven below cut-off elevation to achieve bearing.~~

~~_____ 2. Using an underwater hammer or a pile follower: Measurement will be in accordance with 455-11.2.1.~~

~~_____ **455-11.3 Steel Piling Point Protectors:**~~

~~The quantity to be paid for will be each for the total of point protectors authorized, furnished, and properly installed.~~

~~_____ **455-11.4 Test Piles:** The quantity to be paid for of test piles of various types, will be the length, in feet, of test piling furnished, driven and accepted, according to the authorized length list, and any extensions thereof as approved by the Engineer.~~

~~_____ Test piles left in place as permanent piles, will be paid for only as test piling. Any extensions necessary to continue driving the pile for test purposes, as authorized by the Engineer, will be paid for as test piling. Other extensions of piles, additional length paid for splicing and build-ups will be included in the quantities of regular piling and will not be paid for as test piling.~~

~~_____ **455-11.5 Dynamic Load Tests:** Payment will be based on the number of dynamic load tests shown in the Plans, authorized by the Engineer, or required in 455-5.12.7, completed and accepted in accordance with the Contract Documents. No separate payment will be made for dynamic load tests used to evaluate changes in the Contractor's driving equipment. No payment will be made for dynamic load tests used to evaluate the integrity of a pre-planned epoxy-bonded dowel splice. Include all costs associated with dynamically testing production piles with epoxy-bonded dowel splices under Pay Item No. 455-34. No payment will be made for dynamic load tests on test piles.~~

~~_____ For structures with 100% dynamic testing, the cost of supplying and installing internal gauges or attaching external gauges to each pile for dynamic load tests is included in the cost of the pile, no separate payment will be made.~~

~~_____ For structures without 100% dynamic testing, the cost of supplying and installing internal gauges or attaching external gauges to each production pile for dynamic load testing prior to initial driving, authorized by the Engineer, will be 20 feet of additional pile. No payment will be made for attaching dynamic testing equipment for set checks or redrives. No payment will be made for dynamic load tests performed when driving with followers.~~

~~_____ **455-11.6 Steel Sheet Piling:** The quantity to be paid for will be the plan quantity area, in square feet, measured from top of pile elevation to the bottom of pile elevation and beginning and end wall limits as shown in the Plans with no allowance for variable depth surface profiles.~~

Approved alternate support structures would be paid for as plan quantity computed for sheet pile. Sheet piling used in cofferdams and to incorporate the Contractor's specific means and methods, and not ordered by the Engineer, will be paid for as required in Section 125.

~~455-11.7 Concrete Sheet Piling:~~ The quantity to be paid for will be the product of the number of such piles satisfactorily completed, in place, times their lengths in feet as shown in the Plans or authorized by the Engineer. This quantity will be based upon piles 2 1/2 feet wide.

~~When the Engineer approves, the Contractor may furnish the concrete sheet piling in widths wider than shown in the Plans; then the number of piles shall be the actual number of units completed times the width used divided by the width in the Plans.~~

~~455-11.8 Pile Splices:~~ The quantity to be paid for authorized drivable splices and build-ups greater than 5 feet in length in concrete piling, and test piling, which are made for the purpose of obtaining authorized pile lengths longer than shown as the maximum length in the Standard Plans Indexes, for obtaining greater lengths than originally authorized by the Engineer, to incorporate test piling in the finished structure, for further driving of test piling, or for splices shown in the Plans, will be 30 feet of additional prestressed concrete piling under Pay Item No. 455-34.

~~For concrete piles and test piles, where the build-ups is 5 feet or less in length, the quantity to be paid for will be 9 feet of prestressed concrete piling under Pay Item No. 455-34 as compensation for drilling and grouting the dowels and all other costs for which provision has not otherwise been made.~~

~~The quantity to be paid for authorized splices in steel piling and test piling for the purpose of obtaining lengths longer than the lengths originally authorized by the Engineer will be 20 feet of additional steel piling under Pay Item No. 455-35.~~

~~455-11.9 Set Checks and Redrives:~~

~~455-11.9.1 Set Checks/Test Piles:~~ There will be no separate payment for the initial four set checks performed the day of and the working day following initial driving. For each additional set check ordered by the Engineer and performed within the following working day of initial driving, an additional quantity of 10 feet of piling will be paid.

~~455-11.9.2 Set Checks/Production Piles:~~ There will be no separate payment for the initial two set checks performed the day of and the working day following initial driving. For each additional set check ordered by the Engineer and performed within the following working day of initial driving, an additional quantity of 10 feet of piling will be paid.

~~455-11.9.3 Redrives:~~ The quantity to be paid for will be the number of redrives, each, authorized by the Engineer. Payment for any pile redrive (test pile or production pile) ordered by the Engineer will consist of 20 feet of additional piling.

~~455-11.10 Pile Extraction:~~ Piles authorized to be extracted by the Engineer and successfully extracted as provided in 455-11.2.3 will be paid for as described in 455-11.2.3. No payment for extraction will be made for piles shown in the Plans to be extracted or piling damaged or mislocated by the Contractor that are ordered to be extracted by the Engineer.

~~455-11.11 Static Load Tests:~~ The quantity to be paid for will be the number of static load tests of the designated tonnages, each, as shown in the Plans or authorized by the Engineer, actually applied to piles, completed and accepted in accordance with the Plans and these Specifications.

~~455-11.12 Preformed Pile Holes:~~ The quantity added to the payment for piling will be 30% of the length of completed preformed pile holes from existing ground or the bottom of any required excavation, whichever is lower, to the bottom of preformed hole acceptably provided;

complete for the installation of the bearing piles, regardless of the type of pile (test pile or production pile) installed therein. Only those holes authorized to be paid for, as provided in 455-5.10.3, will be included in the measurement for payment. The Engineer will authorize payment for preformed pile holes only when the pile has been placed in proper position and has achieved the required penetration.

ARTICLE 455-12 is deleted and the following substituted:

455-12 Basis of Payment (All Piling).

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying completed pile foundations, in place and accepted. No separate payment will be made for any items of work associated with the construction of piling. No additional payment or adjustments will be made for set-checks, re-drives, dynamic load tests, pile instrumentations, splice installations and driving, build-ups, pile extractions, preformed holes or other associated activities.

~~455-12.1 Treated Timber Piling: Price and payment will be full compensation for all labor, equipment and materials required for furnishing and installing all materials, including collars, metal shoes, copper cover sheets, preservatives and tar, and for wrapping pile clusters with wire cable, where so shown in the Plans.~~

~~455-12.2 Prestressed Concrete Piling: Price and payment will be full compensation for all labor, equipment and materials required for furnishing and installing all reinforcing steel, predrilled holes, furnishing the material for and wrapping pile clusters with wire cable where so shown in the Plans and grouting of preformed pile holes when shown in the Plans.~~

~~455-12.3 Steel Piling: Price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing steel piling, including welding and painting as specified and the cost of predrilling pile holes described in 455-5.1. The cost of any concrete fill and reinforcing steel in pipe piles will be included in the price for steel piling.~~

~~Bracing and other metal parts attached to or forming a part of piling or bracing and not otherwise classified, will be measured and paid for as provided in Section 460.~~

~~455-12.4 Test Piles: Price and payment will be full compensation for all incidentals necessary to complete all the work of this item except splices, build-ups, pile extractions and preformed pile holes authorized by the Engineer and paid for under other pay items or payment methods. The cost of all additional work not listed above necessary to ensure required penetration and attain required bearing of the test piles will be included in the price bid per foot of test pile, including driving and all other related costs.~~

~~455-12.5 Dynamic Load Tests:~~

~~455-12.5.1 Dynamic Load Tests/ Test Piles: All test piles will require dynamic load tests. Include all costs associated with assisting the Engineer in performing the dynamic load tests in the pay items for test piles.~~

~~455-12.5.2 Dynamic Load Tests/ Production Piles: Payment will be full compensation for all costs associated with assisting the Engineer in performing the dynamic load tests.~~

~~455-12.6 Steel Sheet Piling:~~

~~455-12.6.1 Permanent Sheet Piling: Price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing steel sheet piling including preformed holes and coating, but will not include furnishing and placing~~

~~anchors when an anchored wall system is designed and detailed in the Plans. In such cases, furnishing and installing anchors will be paid separately.~~

~~—————**455-12.6.2 Temporary Sheet Piling:** For critical temporary steel sheet pile walls, walls which are necessary to maintain the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction, that are detailed in the Plans, price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing steel sheet piling including preformed holes when shown in the Plans, and including wales, anchor bars, dead men, soil anchors, proof tests, creep tests, and other incidental items when an anchored wall system is required. Removal of the sheet piling, anchors, and incidentals will be included in the cost per square foot for steel sheet piling (critical temporary). When the temporary steel sheet pile walls are not detailed in the Plans, the cost of furnishing and installation shall be incidental to cost of other related items and no separate payment shall be made. If the wall is not shown in the Plans, but deemed to be critical as determined by the Engineer, then a design shall be furnished by the Department and paid for separately under steel sheet piling (critical temporary).~~

~~—————**455-12.7 Concrete Sheet Piling:** Price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing concrete sheet piling including reinforcing steel, grouting, plastic filter fabric, preformed holes and installation.~~

~~—————**455-12.8 Preformed Pile Holes:** Payment will be full compensation for all labor, equipment, casings and materials required to perform this work.~~

~~—————**455-12.9 Point Protectors:** Price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing point protectors.~~

~~—————**455-12.10 Static Load Tests:** Price and payment will be full compensation for all labor, equipment, materials, and incidentals required to perform this work, including instrumentation, data collection and professional services to prepare the report.~~

~~—————**455-12.11 Pile Cut Off:** Anticipate all piles will require cutting off, and include all costs associated with pile cut off in the pay items for piling.~~

~~—————**455-12.12 Payment Items:** Payment will be made under:~~

- ~~Item No. 455 2 ——— Treated Timber Piling — per foot.~~
- ~~Item No. 455 14 ——— Concrete Sheet Piling — per foot.~~
- ~~Item No. 455 34 ——— Prestressed Concrete Piling — per foot.~~
- ~~Item No. 455 35 ——— Steel Piling — per foot.~~
- ~~Item No. 455 36 ——— Concrete Cylinder Piling — per foot.~~
- ~~Item No. 455 119 ——— Test Loads — each.~~
- ~~Item No. 455 120 ——— Point Protection — each.~~
- ~~Item No. 455 133 ——— Sheet Piling — per square foot.~~
- ~~Item No. 455 143 ——— Test Piles (Prestressed Concrete) — per foot.~~
- ~~Item No. 455 144 ——— Test Piles (Steel) — per foot.~~
- ~~Item No. 455 145 ——— Test Piles (Concrete Cylinder) — per foot.~~

SUBARTICLE 455-22.2 is deleted and the following substituted:

455-22.2 Foundation Certification Packages: Submit certification packages of drilled shaft foundations to the Engineer prior to Verification Testing. Each Foundation Certification Package shall include a letter signed and sealed by the GFDEOR certifying the drilled shafts have the required axial capacity, torsional capacity, uplift capacity, overturning and lateral stability,

integrity deficiencies have been corrected, ~~and~~ settlements will not affect the functionality of the structure, and that the inspection of the drilled shaft installation was performed under the supervision of the GFDEOR. Include all shaft excavation and concreting logs, videos of visual shaft bottom inspections, all CSL reports and electronic data, gamma-gamma testing reports, slurry test data, supplemental testing data, analyses for the foundation unit and the concrete strength test results of the lots sampled. The certification shall not be contingent on any future testing or approval by the Engineer. Submit a separate Foundation Certification Package for each foundation unit. A foundation unit is defined as all the shafts within one bent or pier for a specific bridge for each phase of construction. For sign, signal, lighting and ITS structures, a foundation unit is defined as all the shafts within one intersection/interchange, for each phase of an intersection/interchange or all the shafts included in the structure.

ARTICLE 455-23 is deleted:

~~**455-23 Method of Measurement.**~~

~~**455-23.1 Drilled Shafts:** The quantity to be paid for will be the length, in feet, of the reinforced concrete drilled shaft of the diameter shown in the Plans, completed and accepted. The length will be determined as the difference between the top of shaft elevation as shown in the Plans and the final bottom of shaft elevation as authorized and accepted. When the Contractor elects to provide outside diameter (O.D.) sized casing rather than inside diameter (I.D.) sized casing as allowed in 455-15.7, the pay quantity measured as described above will be multiplied by a factor (F) determined as follows:~~

$$F = \frac{2D_2 - D_1}{D_2}$$

~~where:~~

~~F= factor to adjust pay quantities to compensate for smaller shafts.~~

~~D₁= casing inside diameter specified = shaft diameter specified.~~

~~D₂= casing inside diameter provided (D₂=D₁ minus twice the wall thickness).~~

~~**455-23.2 Drilled Shafts (Unreinforced):** The quantity to be paid for will be the length, in feet, of unreinforced concrete drilled shaft of the diameters shown in the Plans, completed and accepted. The length will be determined as the difference between the top of shaft elevation as shown in the Plans and the final bottom of shaft elevation as authorized and accepted. When the Contractor elects to use O.D. casing, the quantity as determined above will be multiplied by the factor "F" determined as described in 455-23.1.~~

~~**455-23.3 Unclassified Shaft Excavation:** The quantity to be paid for will be the length, in feet, of unclassified shaft excavation of the diameter shown in the Plans, completed and accepted, measured along the centerline of the shaft from the ground surface elevation after any required excavation per 455-1.2 to the plan bottom of shaft elevation authorized and accepted plus up to 15 feet or 3 shaft diameters, whichever is deeper, of additional excavation as authorized by the Engineer. When drilled shafts are constructed through fills placed by the Contractor, the original ground surface before the fill was placed will be used to determine the quantity of unclassified shaft excavation. When the Contractor elects to use O.D. casing, the~~

quantity as determined above will be multiplied by the factor "F" determined as described in 455-23.1.

~~455-23.4 Unclassified Extra Depth Excavation:~~ When excavation is required by the Engineer to extend more than 15 feet or 3 shaft diameters, whichever is deeper, below the bottom of the shaft elevation shown in the Plans, the work will be considered as Unforeseeable Work.

~~455-23.5 Method Shafts:~~ The cost of all method shafts will be included in the cost of drilled shafts.

~~455-23.6 Core (Shaft Excavation):~~ The quantity to be paid for will be the length, in feet, measured from the bottom of shaft elevation to the bottom of the core hole, for each authorized core drilled below the shaft excavation, completed and accepted. When the Engineer authorizes pilot holes extending through part or all of the shaft, prior to excavation, to some depth below the shaft bottom, the quantity paid as core (shaft excavation) will be the length in feet, measured from the top elevation to the bottom elevation authorized by the Engineer, completed and accepted. When SPT tests are substituted for coring or pilot holes as provided in 455-15.6, the quantity will be determined as described above in this Section.

~~455-23.7 Casings:~~ The quantity to be paid for will be the length, in feet, of each size casing as directed and authorized to be used. The length will be measured along the casing from the top of the shaft elevation or the top of casing whichever is lower to the bottom of the casing at each shaft location where casing is authorized and used, except as described below when the top of casing elevation is shown in the Plans. Casing will be paid for only when the Permanent Casing Method is specified, when the Plans show a casing that becomes a permanent part of the shaft, or when the Engineer directs the Contractor to leave a casing in place which then becomes a permanent part of the shaft. No payment will be made for casings which become bound or fouled during shaft construction and cannot be practically removed. The Contractor shall include the cost of all temporary removable casings for methods of construction other than that of the Permanent Casing Method in the bid price for unclassified shaft excavation item.

~~When the Permanent Casing Method and the top of casing elevation are specified, the casing will be continuous from top to bottom. Authorization for temporary casing will not be given unless the Contractor demonstrates that he can maintain alignment of the temporary upper casing with the lower casing to be left in place during excavation and concreting operations. When artesian conditions are or may be encountered, the Contractor shall also demonstrate that he can maintain a positive water-tight seal between the two casings during excavation and concreting operations.~~

~~When the top of casing elevation is shown in the Contract Documents, payment will be from the elevation shown in the Plans or from the actual top of casing elevation, whichever is lower, to the bottom of the casing. When the Contractor elects to use an approved special temporary casing system in open water locations, the length to be paid for will be measured as a single casing as provided above.~~

~~455-23.8 Load Tests:~~ The quantity to be paid for will be the number and type of load tests conducted.

~~455-23.9 Instrumentation and Data Collection:~~ The quantity to be paid for will be at the lump sum price.

~~455-23.10 Thermal Integrity Testing for Drilled Shafts and Cross-Hole Sonic Logging:~~ The quantity of TITDS to be paid for will be the number of drilled shafts accepted based on TITDS tests. When TITDS is not performed in accordance with 455-17.6.1, perform CSL testing at no cost to the Department. No payment will be made for any integrity testing

when such testing indicates the shaft cannot be accepted based on the integrity testing itself. No payment will be made for integrity testing performed to evaluate the integrity of post-repair work or for CSL testing not requested by the Engineer. When the Engineer requests CSL tests and the results indicate the shaft is acceptable, the testing will be paid as unforeseen work.

ARTICLE 455-24 is deleted and the following substituted:

455-24 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying drill shaft foundations, in place and accepted. No separate payment will be made for any items of work associated with construction of drill shaft foundations.

~~———— **455-24.1 Drilled Shafts:** Price and payment will be full compensation for all drilled shafts, including the cost of concrete, reinforcing steel, nondestructive integrity testing access tubes, embedded thermal wires when required by the Contract Documents, and including all labor, materials, equipment, and incidentals necessary to complete the drilled shaft. The cost of the reinforcing steel, including lap lengths, to accommodate shaft lengths longer than shown in the Plans is included in the cost of drilled shafts. Costs associated with repairing defects found in the drilled shaft shall be included in the cost of the drilled shaft.~~

~~———— **455-24.2 Drilled Shafts (Unreinforced):** Price and payment will be full compensation for all drilled shafts (unreinforced), including the cost of concrete and all labor, equipment, materials, and incidentals necessary to complete the drilled shaft.~~

~~———— **455-24.3 Unclassified Shaft Excavation:** Price and payment will be full compensation for the shaft excavation (except for the additional costs included under the associated pay items for casing); removal from the site and disposal of excavated materials; restoring the site as required; cleaning and inspecting shaft excavations; using slurry as necessary; using drilling equipment; blasting procedures, special tools and special drilling equipment to excavate the shaft to the depth indicated in the Plans; and furnishing all other labor, materials, and equipment necessary to complete the work in an acceptable manner.~~

~~———— **455-24.4 Method Shafts:** No separate payment will be made for method shaft (test hole). All cost of test holes will be included in the cost of drilled shafts.~~

~~———— **455-24.5 Core (Shaft Excavation):** Price and payment will be full compensation for drilling and classifying the cores/pilot hole, delivering them to the Department, furnishing drilled shaft concrete to fill the core/pilot hole, and all other expenses necessary to complete the work. When SPT tests are substituted for cores/pilot holes as provided in 455-15.6, they will be paid for at the price per foot for coring.~~

~~———— **455-24.6 Casings:** Price and payment will be full compensation for additional costs necessary for furnishing and placing the permanent casing in the shaft excavation above the costs attributable to the work paid for under associated pay items for unclassified shaft excavation.~~

~~———— **455-24.7 Load Tests:** Price and payment will include all labor, equipment, material and incidentals required to perform this work, including instrumentation, data collection and professional services to prepare the report.~~

~~———— **455-24.8 Thermal Integrity Testing for Drilled Shafts and Cross-Hole Sonic Logging:** Price and payment will include all costs related to the performance of the TITDS and CSL testing and incidentals to the thermal integrity and cross-hole sonic tests.~~

~~———— **455-24.9 Payment Items:** Payment will be made under:~~

~~Item No. 455-88 — Drilled Shaft — per foot.~~

~~Item No. 455-107 — Casing — per foot.~~

~~Item No. 455-111 — Core (Shaft Excavation) — per foot.
Item No. 455-119 — Test Loads — each.
Item No. 455-122 — Unclassified Shaft Excavation — per foot.
Item No. 455-147 — Thermal Integrity Testing for Drilled Shafts — each.~~

ARTICLE 455-36 is deleted:

455-36 Method of Measurement

~~455-36.1 Dewatering: No separate payment will be made for dewatering.~~

~~455-36.2 Excavation: No separate payment will be made for backfill or will separate payment be made for excavation above bottom of footing elevation. The cost of this work will be included in the Contract unit price for concrete (substructure). For footings with excavation (over excavation) below the bottom of the footing elevation shown in the Plans, the cost of this excavation, backfilling, and compaction will be included in the Contract unit price for excavation for structures. The pay quantity will be the volume in cubic yards bounded by vertical planes 12 inches outside of the limits of the footing and parallel thereto and extending from the bottom of the footing elevation to the authorized bottom of over excavation or within the pay limits shown in the Plans. If the elevation of a footing as shown in the Plans is changed to a higher or lower elevation, the Engineer will not consider such change as a material change to the original Contract Documents, a waiver of any condition of the Contract, or an invalidation of any of the provisions of the Contract.~~

~~455-36.3 Reinforcing Steel: The quantity to be paid for will be the total weight, in pounds, determined as described in Section 415.~~

~~455-36.4 Concrete: The quantity to be paid for will be the volume of the classes shown in the Plans, in cubic yards, determined as described in Section 400.~~

ARTICLE 455-37 is deleted and the following substituted:

455-37 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying the completed foundations, in place and accepted. No separate payment will be made for any items of work associated with spread footing construction.

~~455-37.1 Dewatering: No separate payment will be made for dewatering of footing excavations, including installing, maintaining, and monitoring piezometer wells. Dewatering will be considered Unforeseeable Work when the Engineer determines that dewatering deeper than the requirements described in 455-28 is required.~~

~~455-37.2 Excavation: Price and payment will be full compensation for all work related to over excavating below the bottom of footing elevation, backfill, and compaction as specified.~~

~~455-37.3 Reinforcing Steel: Price and payment will be full compensation for all work required to furnish and place the steel as shown in the Plans and as specified herein.~~

~~455-37.4 Concrete: Price and payment will be full compensation for all work required to construct footings and seals as shown in the Plans and described herein.~~

~~No separate payment will be made for sheeting and shoring required for excavation and footing construction except when a separate pay item for sheeting and shoring is~~

~~included in the Plans. The cost of all work not specifically mentioned in the other footing items will be included in the price per cubic yard for substructure concrete.~~

~~455-37.5 Payment Items: Payment will be made under:~~

- ~~Item No. 125-1 Excavation For Structures per cubic yard.~~
- ~~Item No. 400-2 Class II Concrete per cubic yard.~~
- ~~Item No. 400-3 Class III Concrete per cubic yard.~~
- ~~Item No. 400-4 Class IV Concrete per cubic yard.~~
- ~~Item No. 415-1 Reinforcing Steel per pound.~~

ARTICLE 455-49 is deleted:

~~**455-49 Method of Measurement.**~~

~~The quantity to be paid for auger cast pile will be at the Contract unit price per foot between tip and required pile top elevations for all piles completed and accepted.~~

ARTICLE 455-50 is deleted and the following substituted:

455-50 Basis of Payment.

Contract Price includes cost of all labor, equipment and materials required for furnishing, installing, and certifying the completed auger cast pile foundations, in place and accepted. No separate payment will be made for any items of work associated with auger cast pile construction.

~~455-50.1 Auger Cast Piles: Price and payment will be full compensation for all labor, materials, and incidentals for construction of ACP of the sizes and depths indicated on the Contract Documents or as otherwise directed by the Engineer. Price and payment will also include the removal and proper disposal off site of all spoil from the auger operation and all excess grout displaced from the auger hole, unless otherwise approved by the Engineer. Work to remove and replace unsuitable material when necessary as specified in 455-44 will be considered Unforeseeable Work.~~

~~455-50.2 Payment Items: Payment will be made under:~~

- ~~Item No. 455-112 Auger Grouted Piles per foot.~~

ARTICLE 455-51 is deleted and the following substituted:

455-51 Foundation Certification Packages

Submit two copies of a letter signed and sealed by the GFDEOR to the Engineer certifying each foundation unit has the required axial capacity, lateral stability and integrity, and settlements will not affect the functionality of the structure, and that the inspection of the auger cast pile installation was performed under the supervision of the GFDEOR. A separate Foundation Certification Package must be submitted for each foundation unit. The foundation unit is defined as a group of piles per wall segment or per full wall. Every ACP must be certified and the certification accepted before continuing with the construction of any structural element over the foundation unit. Each Foundation Certification Package shall include all ACP logs, the Department spreadsheet properly completed for every ACP and the grout strength test results of

the lots sampled. Correct all integrity problems and noncompliance issues prior to submitting the certification packages. The certification shall not be contingent on any future testing or approval by the Engineer. Within three working days, excluding weekends and Department observed holidays, after receipt of the Foundation Certification Package, the Engineer will examine the records and determine the acceptability of the auger cast piles. The Engineer will reject any certification package that is incomplete or indicates noncompliance with the specifications without the issue being corrected to the satisfaction of the Engineer.

If any ACP is found to be deficient, correct the deficiency (i.e. repair or replace the ACP) and/or modify the design to compensate for the deficiency. In case of disagreement of test results, the Engineer's results will be final and used for determination of acceptance.

After meeting the time requirements of 455-44(15), the Contractor may place panels prior to a complete submittal of the Certification Package at their own risk. If the Engineer determines that verification testing is needed, the Contractor will perform all work and provide all labor, at no additional cost to the Department, necessary to allow access to the piles requiring verification. Replace or redesign and reconstruct, to the satisfaction of the Engineer, any foundation found to be unacceptable after submittal of the certification packages or after verification testing, at no cost to the Department.

STRUCTURES FOUNDATIONS (DESIGN BUILD).
(REV 1-7-20)

SUBARTICLE 455-5.19 is deleted and the following substituted:

455-5.19 Foundation Certification Packages: Submit certification packages of pile foundations to the Engineer prior to Pile Verification Testing. A separate Foundation Certification Package must be submitted for each foundation unit. A foundation unit is defined as all the piles within one bent or pier for a specific bridge for each phase of construction. Each Foundation Certification Package shall contain an original certification letter signed and sealed by the GFDEOR certifying the piles have the required axial capacity including compression and uplift, lateral stability, pile integrity, settlements will not affect the functionality of the structure, and that the inspection of the pile installation was performed under the supervision of the GFDEOR. The package shall also include all pile driving logs, EDC records, all supplemental dynamic testing raw data and analyses for the foundation unit, and the signed and sealed evaluation performed to address out of tolerance piles in accordance with 455-5.16.5. The certification shall not be contingent on any future testing or approval by Engineer.

ARTICLE 455-11 is deleted:

ARTICLE 455-12 is deleted and the following substituted:

455-12 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying completed pile foundations, in place and accepted. No separate payment will be made for any items of work associated with the construction of piling. No additional payment or adjustments will be made for set-checks, re-drives, dynamic load tests, pile instrumentations, splice installations and driving, build-ups, pile extractions, preformed holes or other associated activities.

SUBARTICLE 455-22.2 is deleted and the following substituted:

455-22.2 Foundation Certification Packages: Submit certification packages of drilled shaft foundations to the Engineer prior to Verification Testing. Each Foundation Certification Package shall include a letter signed and sealed by the GFDEOR certifying the drilled shafts have the required axial capacity, torsional capacity, uplift capacity, overturning and lateral stability, integrity deficiencies have been corrected, settlements will not affect the functionality of the structure, and that the inspection of the drilled shaft installation was performed under the supervision of the GFDEOR. Include all shaft excavation and concreting logs, videos of visual shaft bottom inspections, all CSL reports and electronic data, gamma-gamma testing reports, slurry test data, supplemental testing data, analyses for the foundation unit and the concrete strength test results of the lots sampled. The certification shall not be contingent on any future

testing or approval by the Engineer. Submit a separate Foundation Certification Package for each foundation unit. A foundation unit is defined as all the shafts within one bent or pier for a specific bridge for each phase of construction. For sign, signal, lighting and ITS structures, a foundation unit is defined as all the shafts within one intersection/interchange, for each phase of an intersection/interchange or all the shafts included in the structure.

ARTICLE 455-23 is deleted:

ARTICLE 455-24 is deleted and the following substituted:

455-24 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying drill shaft foundations, in place and accepted. No separate payment will be made for any items of work associated with construction of drill shaft foundations.

ARTICLE 455-36 is deleted:

ARTICLE 455-37 is deleted and the following substituted:455-37 Basis of Payment.

Contract Price includes all labor, equipment and materials required for furnishing, installing, and certifying the completed foundations, in place and accepted. No separate payment will be made for any items of work associated with spread footing construction.

ARTICLE 455-49 is deleted:

ARTICLE 455-50 is deleted and the following substituted:455-50 Basis of Payment.

Contract Price includes cost of all labor, equipment and materials required for furnishing, installing, and certifying the completed auger cast pile foundations, in place and accepted. No separate payment will be made for any items of work associated with auger cast pile construction.

ARTICLE 455-51 is deleted and the following substituted:455-51 Foundation Certification Packages

Submit two copies of a letter signed and sealed by the GFDEOR to the Engineer certifying each foundation unit has the required axial capacity, lateral stability and integrity, settlements will not affect the functionality of the structure, and that the inspection of the auger cast pile installation was performed under the supervision of the GFDEOR. A separate Foundation Certification Package must be submitted for each foundation unit. The foundation unit is defined as a group of piles per wall segment or per full wall. Every ACP must be certified and the certification accepted before continuing with the construction of any structural element over the foundation unit. Each Foundation Certification Package shall include all ACP logs, the Department spreadsheet properly completed for every ACP and the grout strength test results of the lots sampled. Correct all integrity problems and noncompliance issues prior to submitting the certification packages. The certification shall not be contingent on any future testing or approval by the Engineer. Within three working days, excluding weekends and Department observed holidays, after receipt of the Foundation Certification Package, the Engineer will examine the records and determine the acceptability of the auger cast piles. The Engineer will reject any certification package that is incomplete or indicates noncompliance with the specifications without the issue being corrected to the satisfaction of the Engineer.

If any ACP is found to be deficient, correct the deficiency (i.e. repair or replace the ACP) and/or modify the design to compensate for the deficiency. In case of disagreement of test results, the Engineer's results will be final and used for determination of acceptance.

After meeting the time requirements of 455-44(15), the Contractor may place panels prior to a complete submittal of the Certification Package at their own risk. If the Engineer determines that verification testing is needed, the Contractor will perform all work and provide all labor, at no additional cost to the Department, necessary to allow access to the piles requiring verification. Replace or redesign and reconstruct, to the satisfaction of the Engineer, any foundation found to be unacceptable after submittal of the certification packages or after verification testing, at no cost to the Department.