

March 9, 2023

ADDENDUM NUMBER TWO (2)

To the Plans and Specifications for:

**Kent State University
Stark Loop Road and Parking Improvements**

KSU Project No. KSU-22L606
6000 Frank Ave. NW
North Canton, OH 44720

For

Kent State University
Office of the University Architect
Suite 101 Harbourt Hall
Kent, OH 44242

Prepared by:

Domokur Architects
4651 Medina Road
Akron, Ohio 44321

TO ALL BIDDERS:

This Addendum supplements and amends the original drawings and specifications, and shall be taken into account in preparing proposals, and shall become part of the Contract Documents. You must indicate receipt for ALL addenda on your Bid Form. Deleted text is indicated with a strikethrough (e.g. ~~strikethrough~~) and new text is indicated with boldface type (e.g. **boldface**).

1. Specification Section 00 10 00 – Solicitation

Revise bid due date from ~~March 10, 2023~~ at 11:00 am to **March 14, 2023** at 11:00 am. Bids will be received at the Kent State University Office of the University Architect (this location is unchanged from original solicitation).

2. Specification Section 00 41 13 – Bid Form

Replace Bid Form with the attached revised Bid Form. New Bid Form revises bid due date from ~~March 10, 2023~~ at 11:00 am to **March 14, 2023** at 11:00 am. All other content unchanged.

3. Drawing C4.0 – REPAIR PLAN LOOP ROAD STA 15+50 TO 24+55

Reference Full Depth Replacement Asphalt Pavement Section, the full depth replacement section shown on Sheet C4.0 consists of full depth reclamation of the existing pavement and base with new asphalt pavement placed above. The full depth reclamation is similar to ODOT item 206 chemically stabilized subgrade with cement (refer to the attached ODOT 206 specification). It consists of:

1. Tilling and mixing the existing pavement, base, and soil subgrade to a depth of 12 inches. This usually requires two (2) passes of the tilling machine.

2. Spreading and mixing in 6% portland cement by weight with water added as required for hydration.
3. Grade and compact the stabilized base.
4. Cover the base with a curing coat.
5. Proof Rolling.

END OF ADDENDUM NUMBER TWO (2)

Document 00 41 13 - Bid Form (General Contracting Project)

State of Ohio Standard Requirements for Public Facility Construction

Sealed bids will be received by Kent State University Office of the University Architect in Suite 101 Harbourt Hall at 615 Loop Road, P.O. Box 5190 Kent, Ohio 44242-0001 for:

Project No. KSU-22L606
Stark Loop Road and Parking Improvements

at

Kent State University, Stark Campus, in Stark County
6000 Frank Ave. NW
North Canton», Ohio 44720

for

Kent State University
Tuesday, March 14, 2023 at 11:00 am

The time for Substantial Completion of all Work is **109** consecutive days from the Notice to Proceed.

Having read and examined the proposed Contract Documents prepared by the Architect/Engineer for the above-referenced Project and the following Addenda:

Addendum Number

Date Received

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The undersigned Bidder proposes to perform all Work for the applicable Contract in accordance with the proposed Contract Documents, for the following sum(s):

Bid Package 101 – GENERAL CONTRACT

UNIT PRICES (Include the subtotal of Unit Price extensions in the Base Bid below. Unit prices shall be used solely for the purpose of determining the adjustment to the Contract Sum for differences between the estimated quantities on the Bid Form and the actual quantities provided. The Contractor's Fee on account of Unit Price Work is included in the Base Bid and not in the Unit Price.)

Item	Description	Estimated Quantity	Unit Price	/	Unit of Measure	Extension
Unit Price 1	Excavation and Fill	50 CY	\$ _____	/	CY	\$ _____
SUBTOTAL OF UNIT PRICE EXTENSIONS:						\$ _____

BASE BID (Including Subtotal of Unit Price Extensions above):

ALL LABOR AND MATERIALS, for the sum of \$ _____

Sum in words: _____

_____ and _____ /100 dollars.

Alternate 1a, Lots 100 and 101 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 1b, Lots 100 and 101 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 2a, Lot 102 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 2b, Lot 102 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 3a, Lot 103 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 3b, Lot 103 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 4a, Lot 104 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 4b, Lot 104 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 5a, Lot 105 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 5b, Lot 105 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 6a, Lot 106 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 6b, Lot 106 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 7, Lot 107 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 8a, Lot 108 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 8b, Lot 108 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 9a, Lot 109 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 9b, Lot 109 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 10a, Lot 201 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

Alternate 10b, Lot 201 (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: \$ _____

Sum in words: _____ and _____ /100 dollars.

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BIDDER AFFIRMATION AND DISCLOSURE

Bidder acknowledges that by signing the Bid Form on the Bidder Signature and Information page, that it has read and understands the applicable Executive Orders regarding the prohibitions of performance of offshore services, locating State data offshore in any way, or purchasing from Russian institutions or companies. If awarded a Contract, the Bidder will become the Contractor and affirms that both the Contractor and its Subcontractors shall perform no services requested under this Contract outside of the United States.

The Bidder shall provide the locations where services under this Contract will be performed in the spaces provided below or by attachment. Failure to provide this information as part of its Bid may cause the Bidder to be deemed non-responsive and no further consideration will be given to its Bid. If the Bidder will not be using Subcontractors, indicate "Not Applicable" in the appropriate spaces.

1. Principal business location of Contractor:

(Contractor Address)	(City, State, Zip)

Name / Principal location of business of Subcontractor(s), if known at time of Bid Opening:

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

2. Location where services will be performed by Contractor (Project Sites):

(Address)	(City, State, Zip)

(Address)	(City, State, Zip)

Name(s) / Location(s) where services will be performed by Subcontractors (Project Sites):

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

(Subcontractor Name)	(Address, City, State, Zip)

3. Location where State data will be located by Contractor:

(Address)

(City, State, Zip)

Locations where State data will be located by Subcontractor(s), if known at time of Bid Opening:

(Subcontractor Name)

(Address, City, State, Zip)

(Subcontractor Name)

(Address, City, State, Zip)

(Subcontractor Name)

(Address, City, State, Zip)

(Subcontractor Name)

(Address, City, State, Zip)

(Subcontractor Name)

(Address, City, State, Zip)

Bidder also affirms, understands and agrees that Bidder and its subcontractors are under a duty to disclose to the State any change or shift in location of services performed by Bidder or its subcontractors before, during and after execution of any Contract with the State. Bidder agrees it shall so notify the State immediately of any such change or shift in location of its services. The State has the right to immediately terminate the contract, unless a duly signed waiver from the State has been attained by the Bidder to perform the services outside the United States.

On behalf of the Bidder, I acknowledge that I am duly authorized to execute this Bid Form including this Bidder Affirmation and Disclosure form and have read and understand that this form is a part of any Contract that Bidder may enter into with the State and is incorporated therein.

**COMMITMENT TO PARTICIPATE
IN THE
EDGE BUSINESS ASSISTANCE PROGRAM**

Bidder: Mark only one option.

Use “✓” or “X” to mark option included in Bid

If marking Option B, also show percentage of proposed participation.

___ **Option A**

Bidder commits to *meet or exceed* the advertised EDGE Participation Goal of **the Contract award amount**, calculated as a portion of the Base Bid plus all accepted Alternates, by using certified EDGE Business Enterprise(s).

Bidder agrees that if selected for consideration of the Contract, it shall provide (if not provided with the Bidder’s Bid) to the Contracting Authority, at the location required and within 3 business days after receiving notice from the Contracting Authority, its fully completed ***Bidder’s Qualification Form***, including an ***EDGE Affidavit*** form for each certified EDGE Business Enterprise proposed for use by the Bidder if awarded the Contract for this Project.

___ **Option B (also indicate percentage -- see text)**

Bidder *does not meet* the advertised EDGE Participation Goal percentage, but, if awarded the Contract for this Project, *commits to provide* _____ **percent of the Contract award amount**, calculated as a portion of the Base Bid plus all accepted Alternates, by using certified EDGE Business Enterprise(s).

Bidder acknowledges it understands the requirement for it to provide and agrees to provide to the Contracting Authority, if selected for consideration of the Contract, within 3 business days after notice from the Contracting Authority, a detailed ***Demonstration of Good Faith*** form describing its efforts undertaken prior to submitting its Bid to meet the advertised EDGE Participation Goal percentage for the Contract for this Project.

Bidder commits to provide to the Contracting Authority at the location required, and within 3 days after receiving notice from the Contracting Authority, its fully completed ***Bidder’s Qualification Form***, including an ***EDGE Affidavit*** form for each certified EDGE Business Enterprise proposed for use by the Bidder if awarded the Contract for this Project.

___ **Option C**

Bidder declares that the Bidder is a certified EDGE Business Enterprise and that if awarded this Contract, the EDGE Participation percentage will be 100 percent of the Contract award amount.

BIDDER'S CERTIFICATIONS

The Bidder hereby acknowledges that the following representations in this Bid are material and not mere recitals:

1. The Bidder has read and understands the proposed Contract Documents and agrees to comply with all requirements of the proposed Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder, which might indicate a contrary intention.
2. The Bidder represents that the Bid is based upon the Basis of Design and Acceptable Components specified by the proposed Contract Documents.
3. The Bidder has visited the Site, become familiar with local conditions, and has correlated personal observations about the requirements of the proposed Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the proposed Contract Documents.
4. The Bidder understands that the execution of the Project will require sequential, coordinated, and interrelated operations, which may involve interference, disruption, hindrance, or delay in the progress of the Bidder's Work. The Bidder agrees that the Contract Sum, as amended from time to time, shall cover all amounts due from the State resulting from interference, disruption, hindrance, or delay that is not caused by the State or its agents and employees. The Bidder agrees that any such interference, disruption, hindrance, or delay is within the contemplation of the Bidder and the State and that the Contractor's sole remedy from the State for any such interference, disruption, hindrance, or delay shall be an extension of time in accordance with the proposed Contract Documents.
5. During the performance of the Contract, the Bidder agrees to comply with Ohio Administrative Code ("OAC") Chapters 123:2-3 through 123:2-9 and agrees to incorporate the monthly reporting provisions of OAC Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands the State's Equal Opportunity Coordinator or the Contracting Authority may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program, and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.
6. The Bidder and each Person signing on behalf of the Bidder certifies, and in the case of a Bid by a joint venture each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: **(a)** the Base Bid, any Unit Prices, and any Alternate bid in the Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; **(b)** unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the Bid have not been knowingly disclosed by the Bidder and shall not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; **(c)** no attempt has been made or shall be made by the Bidder to induce any other Person to submit or not to submit a Bid for the purpose of restricting competition.
7. The Bidder understands that the Contract is subject to all the provisions, duties, obligations, remedies and penalties of Ohio Revised Code Chapter 4115 and that the Bidder shall pay any wage increase in the locality during the term of the Contract.
8. The Bidder shall execute the Agreement with the Contracting Authority, if a Contract is awarded on the basis of this Bid, and if the Bidder does not execute the Agreement for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the State as provided in **Article 5** of the Instructions to Bidders.
9. The Bidder certifies that the upon the award of a Contract, as the Contractor it shall make a good faith effort to ensure that all of the Contractor's employees, while working on the Site, shall not purchase, transfer, use, or possess illegal drugs or alcohol or abuse prescription drugs in any way.
10. The Bidder acknowledges that it read all of the **Instructions to Bidders**, and in particular, **Section 2.10 - Submittals With Bid Form**, and by submitting its Bid certifies that it has read the Instructions to Bidders and it understands and agrees to the terms and conditions stated in them.

11. The Bidder agrees to furnish any information requested by the Contracting Authority or Architect/Engineer to evaluate the responsibility of the Bidder.
12. The Bidder agrees to furnish the submittals required by **Section 6.1** of the **Instructions to Bidders** for execution of the Agreement within 10 days of the date of the Notice of Intent to Award.
13. When the Bidder is a corporation, partnership or sole proprietorship, an officer, partner or principal of the Bidder, as applicable, shall print or type the legal name of the Bidder on the line provided, and **sign the Bid Form**.
14. When the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall print or type the legal name of the applicable member on the line provided, and **sign the Bid Form**.
15. Bidder acknowledges that by signing the Bid Form on the following Bidder Signature and Information page that it is signing the actual Bid and when submitted as a part of its bid package, shall serve as the Bidder's authorization for the further consideration and activity in the bidding and contract process.
16. All signatures must be original.

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BIDDER SIGNATURE AND INFORMATION**Bidder's Authorized Signature:** _____**Please print or type the following:**

Name of Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

Telephone Number: _____

Facsimile Number: _____

Email Address: _____

State of Incorporation: _____

Federal Tax ID Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____ / _____ / _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

JOINT VENTURE ADDITIONAL BIDDER SIGNATURE & INFORMATION**Joint Venture Bidder's Authorized Signature:** _____**Please print or type the following:**

Name of Joint Venture Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

Telephone Number: _____

Facsimile Number: _____

Email Address: _____

State of Incorporation: _____

Federal Tax ID Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____ / _____ / _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

END OF DOCUMENT

ITEM 206 CHEMICALLY STABILIZED SUBGRADE

[206.01](#) Description

[206.02](#) Materials

[206.03](#) Limitations

[206.04](#) Test Rolling

[206.05](#) Construction

[206.06](#) Contractor Designed Chemically Stabilized Subgrade

[206.07](#) Method of Measurement

[206.08](#) Basis of Payment

206.01 Description. This work consists of constructing a chemically stabilized subgrade using the method specified, which will either be cement stabilized subgrade (CSS) or lime stabilized subgrade (LSS), including designing the percentage of chemical in the stabilized subgrade.

The Contract Documents will contain an estimated quantity for the specified chemical for the project, based on using 6 percent for cement and 5 percent hydrated lime, per dry unit weight of a soil weighing 110 pounds per cubic foot (1760 kg/m³).

206.02 Materials. When CSS is specified, furnish portland cement conforming to the requirements of [701.04](#).

When LSS is specified, furnish hydrated or quick lime conforming to [712.04](#).B.

Furnish water conforming to [499.02](#). Potable water is satisfactory.

For Curing Coat furnish [702.04](#) Emulsified Asphalts, Types RS-1 or RS-2, or the curing materials specified in [451.02](#).

206.03 Limitations. Perform chemical stabilization work when the air temperature is 40 °F (5 °C) or above and when the soil is not frozen.

Do not perform this work during wet or unsuitable weather.

206.04 Test Rolling. When specified, test roll prior to chemical stabilization with a proof roller conforming to [204.06](#).

206.05 Construction.

A. Spreading. Prepare a report denoting the type of equipment to be used, speed of the intended equipment usage, rate of application of the chemical, and calculations to produce the required percent of chemical. Submit this report 2 working days prior to the work for acceptance.

Shape the subgrade to the approximate profile grade prior to spreading the specified chemical so as to permit the construction of a uniform compacted course of chemically treated soil to the thickness shown on the plans. The addition of the specified chemical will raise the subgrade profile approximately 1 inch (25mm). Remove this excess material during the fine grading.

If a [206.06](#) Contractor Designed Subgrade is not specified, use the following spreading percentage rates for the specified chemical. This percentage is based on a dry unit weight of soil of 110 pounds per cubic foot (1760 kg/m³):

Cement	6 percent
Lime - Hydrated	5 percent
- Quick	4 percent

Spread the specified chemical uniformly on the subgrade using a mechanical spreader at the approved rate and at a constant slow rate of speed.

Use a distribution bar with a maximum height of 3 feet (1 meter) above the subgrade. Use a canvas shroud that surrounds the distribution bar and extends to the subgrade.

Minimize dusting when spreading the specified chemical.

Do not spread the specified chemical on standing water.

Do not apply the specified chemical if wind conditions are such that blowing cement or lime exceeds the limits in [107.19](#).

B. Mixing. Immediately after spreading the specified chemical, mix the soil and chemical, as follows.

1. CSS. Mix the cement and soil using a power driven transverse type mixer equipped with a computer controlled volumetric water read out. Continue mixing until the cement is thoroughly incorporated into the soil and is a uniform color.

Do not water during the initial mixing.

Complete the initial mixing, so that 80 percent of the soil cement mixture passes a No. 4 sieve (4.75 mm) and 100 percent passes the 1 inch sieve (25mm), exclusive of aggregate larger than the No. 4 sieve (4.75 mm) size.

Following the initial mixing, remix the soil and introduce water through the transverse mixer to bring the mixed material to at least optimum moisture. uniformly distribute the water in sufficient quantity to hydrate the cement.

If the cement can be mixed to the required gradation and the water can be added to the CSS to bring the CSS to the required moisture content, then one mixing of the soil, water and cement may be used.

Restrict the addition of water when moisture content of soil exceeds 3 percent above optimum. Add water to the mixed soil in less than 2 hours after the initial mixing.

Once the water is added to the mixture, complete the mixing, compacting, and shaping within 2 hours from start to finish.

2. LSS. Mix the lime and soil by using an approved power driven rotary type mixer. If necessary, add water to bring the mixed material to at least optimum moisture content for hydrated lime and to at least 3 percent above optimum for quick lime. Continue mixing until the lime is thoroughly incorporated into the soil, all soil clods are reduced to a maximum size of 2 inches (50 mm), and the mixture is a uniform color.

Following the initial mixing, lightly compact the material to seal it against rain or excessive drying by using a steel wheel or pneumatic tire roller.

Before final mixing, cure the initially-mixed, lightly-compacted material for a period of not less than 24 hours and not more than 7 days. Perform the initial cure with water. If conditions during construction are such that more than 7 days elapse between initial mixing and final mixing, add an additional 0.5 percent of lime during the final mixing. Furnish the additional lime at no cost to the Department unless the delay beyond the 7-day limit is caused by conditions beyond the Contractor's control.

Perform the final mixing using an approved power-driven rotary-type equipment until the soil is completely pulverized with all clods reduced to a maximum size of 1 inch (25 mm) and at least 60 percent of the clods passing the No. 4 (4.75 mm) sieve, exclusive of aggregate larger than the No. 4 sieve (4.75 mm). Continue mixing until the lime is uniformly distributed throughout the pulverized soil.

During final mixing, return the mixture to the moisture contents stated above, then shape and compact the mixture.

3. Mixture Depth Check. Check the uniformity of the mix by digging trenches or a series of holes at regular intervals for the full depth of treatment and inspecting the color and depth of the exposed material. The Engineer will use diluted hydrochloric acid or phenolphthalein to ensure that the specified chemical is mixed to the desired depth.

C. Compacting. Start compaction immediately after the shaping and final mixing.

Compact all chemically stabilized subgrade to the requirements in [204.03](#), except the Engineer will use 98 percent of the maximum dry unit weight for acceptance.

The Engineer will obtain the maximum dry density for acceptance by using the moisture density curves submitted by the geotechnical consultant, the Ohio Typical Density Curves, or the maximum dry density obtained by test section method.

When a test section method is used for compaction acceptance; use 98 percent of the test section maximum dry unit weight for acceptance of the production chemically stabilized subgrade construction. Use at least the same number of passes and compactive effort used to construct the test section in the production chemically stabilized subgrade areas.

Construct a new test section when the material, supporting foundation, or embankment changes.

Reduce the moisture content or number of passes, if the material becomes unstable.

Use a vibratory footed roller weighing at least 10 tons (9 metric tons).

Use the moisture controls according to [203.07.A](#), except ensure that the moisture content at time of compaction is at or above optimum.

Perform the final rolling using a steel-wheeled roller. Do not use vibration during the final rolling.

Shape the compacted chemically stabilized subgrade to approximately 1 inch (25mm) above the plan profile grade and typical sections.

Do not allow any mixture of chemically stabilized subgrade that has not been compacted and shaped to remain undisturbed for more than 30 minutes.

D. Curing. Immediately following the compaction and shaping of the chemically stabilized subgrade, cover the surface with Curing Coat for curing the chemically stabilized subgrade. Use a rate of 0.3 gallon per square yard (1.3 liters per square meter) for emulsions or a rate of 0.05 gallons per square yard (0.20 liters per square meter) when the curing materials in [451.02](#) are used.

Apply the Curing Coat prior to the surface drying out. If the Curing Coat is delayed or the surface starts to dry out, indicated by turning white, apply water for temporary curing until the Curing Coat can be applied. Do not apply the Curing Coat unless the Curing Coat can set up before it rains. When the application of Curing Coat must be delayed, keep the chemically stabilized subgrade wet by using water until the Curing Coat can be applied.

Cure the chemically stabilized subgrade for at least five days before the placement of the overlying course.

E. Proof Rolling. After the cure period, proof roll the chemically stabilized subgrade according to Item [204](#).

F. Fine Grading. Remove the excess material and fine grade the chemically stabilized subgrade to the profile grade and typical sections within the tolerances in [203.08](#). Perform this work after the curing and proof rolling.

G. Protection. Drain and maintain the work according to [203.04.A](#).

Do not operate any equipment on the chemically stabilized subgrade during the cure period.

Do not allow the chemically stabilized subgrade to freeze during the cure period.

Cover the completed chemically stabilized subgrade with the aggregate base within 60 calendar days.

206.06 Contractor Designed Chemically Stabilized Subgrade. When specified in the contract documents, design the percent of chemical in the soil. Hire a Department pre-qualified geotechnical consultant experienced in the type of chemical stabilization to recommend to the Department a minimum percentage of chemical required for the project.

Determine the minimum percentage of chemical, as follows:

A. Soil Sampling and Classification. Take one soil sample for every 5000 cubic yards (3800 cubic meters) of soil, one per major type of soil, or a minimum of three soil samples per project, whichever is greater. Take soil samples in locations such as in the shoulder area of a subgrade to be stabilized, and at approximate equal intervals along the project work. Classify the soils according to the Department's Specifications for Subsurface Investigation.

B. Chemical Content. Determine the percent of the specified chemical, as follows:

1. Cement. Prepare soil cement cylinders according to ASTM [D 1633](#). Perform the compressive strength test on cylinders using 5, 7 and 28 day cures. Report the compressive test results in pounds per square inch. Use a percentage of cement in the soil of 0, 4, 6, and 8 for each soil sample. Make three soil

cylinders for each percentage at the optimum moisture of the cement soil mixture. Recommend the percentage of cement for the project that obtains an unconfined strength of 150 psi (1.0 Mpa) in 7 days.

2. Lime. Prepare soil lime cylinders according to ASTM [D 5102](#), Method B. Perform the compressive strength test on cylinders using a 5-day cure. Report the compressive test results in pounds per square inch. Use a percentage of lime by dry unit weight of the soil of 0, 4, 6, and 8 for each soil sample. Make three soil cylinders for each percentage at the optimum moisture of the lime-soil mixture. Recommend the percentage of lime for the project that obtains the maximum strength in 5 days.

C. Report. Submit four copies of a report from the geotechnical consultant with all the data suitably presented to the Engineer for acceptance. Include in this report a summary table of the average values for each soil type. The Engineer will determine the percentage used on the project. The Engineer may increase the chemical percentage chosen by the lab data by 1 percent to meet field variations.

D. Moisture Density Curves. After the Department accepts the chemical percentage, make moisture density curves for the chosen percentage of chemical according to AASHTO [T 99](#) for each soil sample taken above.

Thoroughly mix the chemical in the soil. For LSS, allow the soil and lime to mellow for at least 24 hours before making the curves.

Plot the wet and dry unit weight on one graph, and plot the wet unit weight on the Ohio Typical Density Curves. Submit this data 3 working days prior to the work.

When the chemical percentage for the project changes, re-submit the spreading procedure report required in [206.05.A](#) based on the changed percentage.

206.07 Method of Measurement. The Department will measure Cement Stabilized Subgrade or Lime Stabilized Subgrade by the number of square yards (square meters) computed from the profile grade and typical sections accepted in place.

The Department will measure cement by the number of tons (metric tons) incorporated in the complete and accepted work.

The Department will measure lime by the number of tons (metric tons) incorporated in the complete and accepted work. The contract quantities contain the amount of hydrated lime estimated to complete the work. When the Contractor uses quick lime, the following equation is used to calculate the equivalent amount of hydrated lime incorporated in the completed and accepted work:

$$EHL = QL \times 1.32$$

Where:

EHL = quick lime equivalent in hydrated lime
 QL = tons of quick lime

The Department will measure Test Rolling according to [204.08](#) as specified for Proof Rolling.

The Department will measure Curing Coat by the number of square yards (square meters) computed from the profile grade and typical sections accepted in place.

The Department will not measure Contractor Designed Chemically Stabilized Subgrade.

206.08 Basis of Payment. The Department will pay lump sum for all work, labor, and equipment described in [206.06](#). The Department will pay one-third of the lump sum amount bid when the soil sampling and testing is complete and the report is accepted by the Department. The Department will pay one-third of the lump sum amount bid when the moisture density curves of the chemically stabilized subgrade are accepted by the Department. The Department will pay one-third of the lump sum amount bid when the chemically stabilized subgrade is completed and accepted by the Department.

The Department will pay for accepted quantities at the contract prices as follows:

Item	unit	Description
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206	Square Yard (Square Meter)	Cement Stabilized Subgrade, __ inches deep
206	Square Yard (Square Meter)	Lime Stabilized Subgrade, __ inches deep
206	Ton (Metric Ton)	Cement
206	Ton (Metric Ton)	Lime
206	Square Yard (Square Meter)	Curing Coat
206	Hour	Test Rolling
206	Lump Sum	Contractor Designed Chemically Stabilized Subgrade