Krebs Engineering, Inc.
2100 River Haven Drive
Suite 100
Birmingham, AL 35244
205-987-7411
May 19, 2022

ADDENDUM NO. 5

CONTRACT NO.: 20065
OWNER: CITY OF LaGRANGE
PROJECT: LONG CANE CREEK POLLUTION CONTROL PLANT IMPROVEMENTS
BID DATE: **MAY 26, 2022**
TO: ALL PROSPECTIVE BIDDERS

The changes, modifications, and/or additions covered by and outlined in this Addendum No.5 shall become part of and be incorporated in the Specifications, Contract Documents, and Bid Documents for the above-referenced project:

SPECIFICATIONS TO BE REPLACED BY ADDENDUM:

AD5.1 **PROPOSAL FORM**

1. Replace the Proposal Form in its entirety with the attached. Payment line items are included for unit price solids removal and disposal and contractor/subcontractor mobilization/demobilization for solids removal and disposal.

AD5.2 **SPECIFICATION SECTION 01220 – UNIT PRICES**

1. Replace Specification Section 01220 – Unit Prices in its entirety with the attached. Descriptions are provided for the unit price solids removal and disposal and mobilization/demobilization of the solids removal contractor/subcontractor.

AD5.3 **SPECIFICATION SECTION 321216 – HOT MIX ASPHALT PAVING**

1. Replace Specification Section 321216 – Hot Mix Asphalt Paving in its entirety with the attached.

PLANS TO BE REVISED BY ADDENDUM:

AD5.4 **SHEET DT-04 – MISCELLANEOUS DETAILS**

1. Sheet DT-04 – Miscellaneous Details has been modified to show changes to the Pavement Section Detail.

Krebs Engineering, Inc.

By 

Scott T. Lee, P.E.
Sr. Associate

PROPOSAL FORM

MADE BY _____

ADDRESS _____

TO: **City of LaGrange**

The undersigned, as Bidder, proposes and agrees, if this Bid is accepted, to enter into a Contract with **City of LaGrange,** in the form of Contract specified and shown in the attached Contract Documents, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to complete the construction of the **Long Cane Creek Pollution Control Plant Improvements – Krebs Project No. 20065** as described in the Advertisement for Bids, and in the Contract Documents, which are hereby referred to and made a part of the same extent as if fully set out herein, and in full and complete accordance with the shown, noted, described and reasonably intended requirements of the Contract Documents, to the full and entire satisfaction of the Owner, with a definite understanding that no money will be allowed for extra work except as set forth in the attached Instructions to Bidders, General Conditions, and other Contract Documents, based on the following pricing:

PROPOSAL FORM

ITEM NO.	APPROXIMATE QUANTITIES	DESCRIPTION OF ITEM	UNIT PRICE	TOTAL PRICE FOR ITEM
1.	Complete	**Long Cane Creek Pollution Control Plant Improvements:** Furnish and install all labor, materials, equipment, and appurtenances for the construction of the Plant expansion/ improvements including demolition, sitework, yard piping, improvements to preaeration basins, secondary clarifier splitter boxes, clarifiers, thickeners, digesters, solids holding basins, and other modifications/improvements. Lump Sum	Lump Sum	$
2.	Complete	**Electrical:** Furnish and install all labor, materials, equipment, and appurtenances for the electrical work associated with this project Lump Sum	Lump Sum	$
3.	Complete	**WWTP SCADA System:** Furnish and install all labor, materials, equipment and appurtenances for the SCADA System work as identified in Appendix "A", SCADA Scope of Work Lump Sum	Lump Sum	$143,761.00
4.	200	Undercut (Below Subgrade) Unsuitable Soils, Haul, and Dispose Off-Site, as directed by the Engineer	$ /CY	$
5.	200	Backfill Undercut Areas w/ Crushed Stone (Including Hauling and Compaction), as directed by the Engineer	$ /CY	$
6.	200	Backfill Undercut Areas w/ suitable Soil from On-Site (Including Hauling and Compaction), as directed by the Engineer	$ /CY	$
7.	600	Concrete Sidewalk furnish and install to include all required grading, backfill, materials, and labor, in areas directed by the Engineer and not already identified on the Contract Documents	$ /SF	$

8.	100	Replacement of Structural Member Metals in Pre and Post Thickeners, in areas directed by the Engineer and not already identified on the Contract Documents	$ /LF	$
9.	80	Replacement of Steel Plate in Pre and Post Thickeners, in areas directed by the Engineer and not already identified on the Contract Documents	$ /SF	$
10.	4,000	Removal and Disposal of Solids Materials from Pre and Post Thickeners, Aerobic Digesters, and Solids Holding Basins.	$ /CY	
11.	Complete	Mobilization and Demobilization of the Solids Removal Contractor/Subconctractor in Accordance with the Contract Documents	Lump Sum	
			Total Amount of Base Bid	$

BASE BID: For construction complete as shown and specified in table above, the sum of

_____

Dollars $

ADDENDA: The Bidder acknowledges receipt of Addenda Nos. _____ , _____ , _____ , _____, _____, _____, _____ .

ALTERNATES: If alternates as set forth in the Contract Documents are accepted, the following adjustments are to be made to the Base Bid.

ITEM NO.	ALTERNATE DESCRIPTION	TOTAL ADD FOR ITEM
A1.	Modifications to the Existing Pre-Aeration Basin to Include Demolition Work, Installation of FRP Baffle Walls, Submersible Mixers, Instrumentation, Miscellaneous Metals, and Associated Electrical Work as identified in the Contract Documents Lump Sum	$
A2.	New Septage Receiving Station to Include All Required Mechanical Equipment, Concrete, Paving, Pipe Work, and All Associated Electrical Work as identified in the Contract Documents Lump Sum	$

A3.	Modifications to the Aeration Basins to Include Replacement of the Surface Aerators, Controls, Instrumentation, and All Associated Electrical Work as identified in the Contract Documents Lump Sum	$

The award of the Contract will be based on the total/sum of the base bid price and the alternates (if any) selected by the Owner. The Owner will receive bids and all pricing will be read aloud, but the project will not be awarded until the bids are evaluated and a determination is made on which alternates are selected (if any). Once the Alternates have been selected, the final bid amount will be calculated (base bid price plus adjustments for any alternate selected) for each bid submitted, and if an award is made, the project will be awarded to the responsive bidder with the lowest final bid amount.

The Bidder declares that he/she has examined the site of the work, and has familiarized himself/herself with the existing and proposed/new facilities (including the location, nature, sizes/dimensions, current and intended future use, etc.). The Bidder declares that he/she has fully informed himself/herself of conditions that would affect the proposed work, that, prior to the tender of his/her bid, he/she has examined the Contract Documents for the work and has read all special instructions and provisions contained in the Documents, and that he/she has satisfied himself/herself with respect to the quality and extent of work to be performed. The Bidder declares that the firm, the project manager and the superintendent are qualified and meet or exceed the experience requirements as outlined in the Instructions to Bidders and/or elsewhere in the Contract Documents.

The Bidder declares that he/she understands that, when quantities of work for which unit price bids are requested in the Proposal, such quantities are approximate only and are subject to either increase or decrease, that, should the quantities of any of the work items be increased, the Bidder proposes to perform the additional work at the unit prices bid by him, that, should the quantities of any of the work items be decreased, payment will be made only for the actual quantities of work performed and such payment will be based upon the unit prices bid by him/her, and that he/she shall make no claim for profits anticipated on the decrease in quantities of work. Actual quantities will be paid for as the work progresses, in accordance with the provisions of the Contract Agreement, and such quantities shall be subject to final measurements and determinations made upon completion of the work.

The Bidder understands that the Owner reserves the right, in the Owner's discretion, to reject any or all bids, to waive any informality in any bid, and to accept any bid considered to be advantageous to the Owner.

The Bidder agrees that his/her bid shall be valid for a period of sixty (60) calendar days after the date set for receipt of bids, and shall not be withdrawn for a period of sixty (60) calendar days after the date set for receipt of bids.

The Bidder has attached hereto a Bid Bond executed by a Surety Company authorized to do business in the state in which the project is located (with valid Power-of-Attorney attached), in favor of (made payable to) **City of LaGrange**, the amount of 5% of the bid amount (total).

The Bidder agrees that, should he/she be notified that his/her Bid on the work has been accepted, he/she will, within ten (10) days from receipt of such notice, execute the formal Contract Agreement bound herein, and will furnish with the Contract evidence of Insurance Coverage of

his/her construction operations and all of his/her operations associated with the project, all in accordance with the requirements of the General Conditions.

The Bidder further agrees that, in case of failure on his/her part to execute said Contract Agreement, and to furnish all Bonds required by the Contract Documents, within ten (10) consecutive calendar days after receipt of notice of award of Contract to him, the monies payable to the Obligee of his/her Bid Bond, in accordance with the terms and conditions of the Bond, shall be paid to the Owner as liquidated damages for the delay and additional expense to the Owner caused by such failure on the part of the Bidder.

The Bidder hereby agrees that, should the work under the Contract be awarded to him/her, he/she will commence work under this Contract on or before a date to be specified in written "Notice to Proceed" given by the Owner, and that he/she will achieve Substantial Completion of the Contract within **545** consecutive calendar days following the Notice to Proceed, and will achieve Final Completion of the Contract within **605** consecutive calendar days following the Notice to Proceed. No additional time will be added to the Contract should any of the alternatives be selected. The Bidder agrees to pay, as liquidated damages, the sum of **$1,500** for each consecutive calendar day after the date set for Substantial Completion of the work until such time as Substantial Completion has been achieved. Once Substantial Completion has been achieved, the Bidder will not be assessed additional liquidated damages unless and until he/she fails to meet the Final Completion Date. If the Bidder fails to meet the Final Completion date, then he/she agrees to pay, as liquidated damages, the sum of **$1,000** for each consecutive calendar day after the date set for Final Completion of the work, all as provided in the General Conditions. At no time shall the Bidder pay more than **$1,500** per calendar day for liquidated damages. **The Bidder agrees that, once the Substantial and/or Final Completion dates have passed, the Owner/Engineer will begin deducting liquidated damages from the monthly progress payments.** The Bidder further agrees that he/she will not make any claim for extra compensation should completion of work under the Contract be effected in advance of the time specified hereinabove.

The undersigned Bidder states that he/she fully understands the meaning of "low, responsive, responsible Bidder", as defined in these Documents, and that these criteria will be applied in the evaluation of this Bid.

The undersigned, as Bidder, hereby declares that the name (or names) of the only person (or persons) interested in this Proposal, as principal (or principals), is (or are) as herein below set out and that no person other than that (or those) herein below stated has any interest in this Proposal, or in the Contract to be entered into; that this Proposal is made without connection with any other person, firm or corporation making a proposal; and that it is in all respect fair and in good faith, without collusion or fraud.

Following are the names and addresses of all persons, firms, and corporation interested in the foregoing bid:

_____

_____

_____
(Type or Print Name and Address of Firm)

_____
(Type or Print Contractor License No.)

_____
(Type or Print Name and Title of Officer/Legal Representative of Firm Submitting Bid)

_____
(Signature of Officer/Legal Representative of Firm Submitting Bid)

_____
(Type or Print Date)

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 UNIT PRICES

A. Unit prices are based on estimated quantities of items, but the Contractor shall be paid based on the actual measured quantity of each unit price item that is furnished and/or installed. Unit prices shall include all labor, delivery, materials, equipment, services, overhead, and profit attributable to each unit price item. Once the actual quantities are known, then a Change Order will be issued to incorporate the quantity increase or decrease into the Work.

B. Refer to individual Specification Sections for additional information.

C. The Contractor shall measure the unit price quantities furnished and/or installed, but the Owner shall have the right to verify the Contractor's measurements with Owner's forces and/or independently at Owner's expense.

D. List of Unit Price Bid Items: A schedule and description of the unit price bid items included in this Contract is provided below:

1. Unit Price Bid Item No. 3: WWTP SCADA System, Furnish and Install all labor, materials, equipment, and appurtenances for the SCADA System work as identified in Appendix "A", SCADA Scope of Work.
   a. Description: Wastewater Treatment Plant SCADA system as identified in C2i's scope of work. General Contractor's office overhead, administration costs, and profit shall be included in Bid Item No. 1. No additional costs for this item will be approved other than the sum listed on the proposal form.
   b. The proposal includes pricing for the SCADA work associated with Alternate Bid Item No. 1, Pre-Aeration Basin Modifications and Alternate Bid Item No. 3, Aeration Basin Modifications. Refer to Alternates Specification Section for information on those cost items.
   c. Unit of Measurement: Lump Sum
2. Unit Price Bid Item No. 4: Undercut (below subgrade) unsuitable soils, haul, and dispose off-site, as directed by the Engineer.
   a. Description: Unsatisfactory soil excavation and disposal off site in accordance with Division 31 Section "Earth Moving."
   b. Unit of Measurement: Cubic yard of soil excavated, based upon survey of volume removed.

2. Unit Price Bid Item No. 5: Backfill undercut areas with crushed stone (including hauling and compaction), as directed by the Engineer.
   a. Description: Backfill undercut areas with crushed stone to include hauling, placement, and compaction in accordance with Division 31 Section "Earth Moving."
   b. Unit of Measurement: Cubic yard of crushed stone placed.

3. Unit Price Bid Item No. 6: Backfill undercut areas with suitable soils from On-Site (including hauling and compaction), as directed by the Engineer.

a. Description: Backfill undercut areas with suitable soil to include hauling, placement, and compaction in accordance with Division 31 Section "Earth Moving."
b. Unit of Measurement: Cubic yard of soil placed.

4. Unit Price Bid Item No. 7: Concrete Sidewalk furnish and install to include all required grading, backfill, materials, and labor, in areas directed by the Engineer and not already identified on the Contract Documents.
   a. Description: Furnish and Install concrete sidewalk at locations not already shown on the Contract Documents. Unit price should include all necessary labor, equipment, and materials to provide finished sidewalk at the locations directed.
   b. Unit of Measurement: Per square foot of sidewalk installed.

5. Unit Price Bid Item No. 8: Replacement of Structural Member Metals in Pre and Post Thickeners, All in Accordance with the Contract Documents, in areas directed by the Engineer and not already identified on the Contract Documents.
   a. Description: Furnish and Install replacement structural members (all sizes) in the Pre and Post Thickeners to include required labor, demolition, replacement material, and welding. Locations required as identified by the Engineer during the performance of the reconditioning work. Protective coatings shall be applied in accordance with the Contract Documents.
   b. Unit of Measurement: Per Linear Foot of Structural Member Installed.

6. Unit Price Bid Item No. 9: Replacement of Steel Plate in Pre and Post Thickeners, All in Accordance with the Contract Documents, in areas directed by the Engineer and not already identified on the Contract Documents.
   a. Description: Furnish and Install replacement steel plate in the Pre and Post Thickeners to include required labor, demolition, replacement material, and welding. Locations required as identified by the Engineer during the performance of the reconditioning work. Protective coatings shall be applied in accordance with the Contract Documents.
   b. Unit of Measurement: Per Square Foot of Steel Plate Installed.

7. Unit Price Bid Item No. 10: Removal and Disposal of Solids Materials from the Pre and Post Thickeners, Aerobic Digesters, and Solids Holding Basins.
   a. Description: The removal and disposal of solids materials from the Pre and Post Thickeners, Aerobic Digesters, and Solids Holding Basins as determined by field measurement of the in situ material remaining in each structure after the Owner has drained and removed any materials possible using plant facilities and mechanical means. The Contractor shall provide notification a minimum of 21 days prior to the time needed for the structure to be cleaned so the Owner may coordinate the WPCP operation, drainage, and any solids removal. Once the Contractor is provided access to each basin for solids removal, the quantity of solids remaining shall be measured and be the basis of payment once the work is complete. All solids shall be legally disposed of off site. The quantity listed in the proposal form is an approximate amount and is not minimum or maximum guarantee. Solids removal is not required in any additional structures other than those specifically listed in this specification. Solids in other structures may be

moved/pumped into the treatment process as coordinated with the Owner where needed to perform work.

b. Unit of Measurement: Per Cubic Yard of solids material removed and disposed of off site.

8. Unit Price Bid Item No. 11: Mobilization and Demobilization of the Solids Removal Contractor/Subcontractor in Accordance with the Contract Documents.
   a. Description: Lump Sum fee for the mobilization and demobilization of the solids contractor/subcontractor. This is a one time fee regardless of the number of times the contractor/subcontractor mobilizes or demobilizes. If multiple mobilizations and demobilizations are required to complete the work, all costs shall be included in the one lump sum fee. No additional payment will be considered for additional mobilizations or demobilizations.
   b. Unit of Measurement: Lump Sum Fee

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 22 00

SECTION 32 12 16 - HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Hot-mix asphalt paving.
2. Hot-mix asphalt patching.
3. Hot-mix asphalt paving overlay.
4. Asphalt surface treatments.
5. Pavement-marking paint.
6. Cold milling of existing hot-mix asphalt pavement.

1.3 DEFINITIONS

A. Hot-Mix Asphalt Paving Terminology: Refer to the standard specification for definitions of terms.

B. DOT: Department of Transportation.

C. GDOT: Georgia Department of Transportation.

1.4 SYSTEM DESCRIPTION

A. Provide hot-mix asphalt paving according to materials, workmanship, and other applicable requirements of the standard specifications of the state DOT.

1. Standard Specification: Standard Specifications Construction of Transportation Systems, Georgia Department of Transportation, 2021 Edition.

2. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.5 SUBMITTALS

A. **Certification from Contractor and Manufacturer/Suppliers:** During the bid period and again prior to submitting/ordering and installing materials, products and equipment, the Contractor and all manufacturers and suppliers shall thoroughly review the materials, products and equipment being supplied and shall familiarize

themselves with the existing and proposed/new facilities, as well as connections to existing facilities/utilities. This shall include field verification of the location, nature, size/dimensions, current and intended future use, etc. Prior to ordering and installation, the Contractor shall coordinate with all manufacturers and suppliers to provide all needed information including field dimensions, photographs, information on related materials and equipment, etc.). The Contractor and all manufacturers and suppliers shall include written confirmation (with the submittal) of the following:

1. The materials, products, and equipment being supplied are of the correct size, materials and type.
2. The materials, products and equipment being supplied do not conflict with existing or proposed/new facilities.
3. The products/equipment being supplied are intended for use in this application.
4. All manufacturer(s) and supplier(s) shall provide (either with submittals or separately) written concurrence/acknowledgement of their review/coordination and concurrence with the items above.
5. Shop drawings and product data submitted for review by the Engineer shall bear the Contractor's certification that he has reviewed, checked, and approved the submittals, that they comply with the requirements of the project and with the provisions of the Contract Documents, and that he has verified all sizes, dimensions, locations, field measurements, construction criteria, materials, catalog numbers, and similar data. Field dimensions, sizes and other pertinent information shall be clearly shown on the shop drawings/submittals. The Contractor shall also certify that the work represented by the shop drawings is recommended by the Contractor and that the Contractor's warranty and guaranty will fully apply.

B. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

C. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

1. Manufacturer shall be a paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of the state in which Project is located.

B. Regulatory Requirements: Comply with Georgia Department of Transportation for asphalt paving work, delivery, storage, and handling.

C. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

D. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or frozen or if the following conditions are not met:

1. Prime and Tack Coats: Minimum surface temperature of 40 deg F.
2. Asphalt Binder Course: Minimum surface temperature of 45 deg F and rising at time of placement.
3. Asphalt Wearing Course: Minimum surface temperature of 55 deg F at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. Graded Aggregate Base: Conforming to GDOT Standard Specifications for graded aggregate base materials.

2.2 ASPHALT MATERIALS

A. Binder Course: Conforming to GDOT Specifications, 19 MMSP Binder

B. Wearing Surface Course: Conforming to GDOT Specifications, 9.5 MM Topping

C. Tack Coat: Conforming to GDOT Specifications

2.3 AUXILIARY MATERIALS

A. Pavement-Marking Paint: Class 1 (Paint), Type B (non-reflectorized) designating paint conforming to GDOT Specifications

B. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
B. Proof-roll subgrade using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.

C. Notify Engineer in writing of any unsatisfactory subgrade conditions.

D. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PLANING (MILLING)

A. Plane existing pavement surface in accordance with GDOT Specification. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

1. Repair or replace curbs, manholes, and other construction damaged during cold milling.
2. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
3. Transport milled hot-mix asphalt to asphalt recycling facility or lawful disposal facility.

3.3 PAVEMENT REPLACEMENT

A. Replaced pavement:

1. Shall be of the same type and thickness as the original pavement
2. However, the replaced pavement shall be at least equal to that specified herein.

B. Materials for base course under pavement shall be:

1. Crushed stone meeting the requirements of Georgia Department of Transportation Specifications.
2. Premixed in accordance with the requirements of Georgia Department of Transportation Specifications and shall conform to the following requirements:

a. Material shall be uniform in color and gradation
b. Material shall have moisture content suitable for attainment of the desired compacted density.

C. Base course for replaced pavement shall conform to the following requirements:

1. Thickness:

a. Not less than that of the original pavement,
b. Or a minimum acceptable compacted thickness of not less than 6".
c. If the thickness of the existing pavement base should be greater than 6", the new base material shall be placed in layers not exceeding 6" in

thickness.

2. Each layer of base material shall be compacted to approximately 98% of Standard Proctor Density.
3. Protection and maintenance of base layers prior to the placement of bituminous pavement shall be the responsibility of the Contractor.

D. Where the original pavement was of the bituminous plant mixed type:

1. The Contractor shall replace the original pavement with hot bituminous plant mix meeting the requirements of Georgia Department of Transportation Specifications Section 400.

2. Construction of the replaced pavement shall conform to the requirements of Georgia Department of Transportation Specifications Section 400.

3. Thickness of layer of plant mix shall be equal to that of the original pavement, but shall not be less than 1" ($^{+}$-1/4") in thickness.

E. Where the original pavement was of the bituminous surface treatment type:

1. The Contractor shall replace the original pavement with double surface treatment type conforming to the requirements of Georgia Department of Transportation Specifications.

F. Where the original pavement was bituminous surface treatment type:

1. The Contractor, at his or her option, may elect to replace the surface treatment type with plant mix type as specified hereinabove.
2. In such case, thickness of replaced pavement shall be approximately 1" (approximately 105#/SY).

G. Replacement of bituminous surface course in the City of right-of-ways or Highways shall conform to the following requirements:

1. The Contractor shall pour an eight (8") inch concrete slab in accordance with details shown on the Drawings.
2. Backfill under this eight (8") concrete slab shall be crushed stone as described in BACKFILL FOR TRENCHES.
3. Concrete shall be Class "A" concrete, as defined in these Specifications.
4. If the pavement is to be opened to traffic in less than 14 days,

    a. High-Early Strength Portland Cement shall be used in the concrete mixture.
    b. If Type I Portland Cement is used, the cement factor shall be increased to 7 bags per cubic yard and the quantity of water set to give slump of 2" or less.

5. Where bituminous pavement is cut in private drives or areas outside of public Right-of-Ways, the eight (8") inch slab may be omitted if approval of the Public Authority having jurisdiction over such matters is obtained in writing.

    a. If the concrete slab is omitted, the Contractor shall replace bituminous surface courses in accordance with these Specifications.

6. Upon placement of the concrete slab, and after allowance of sufficient time for curing:

    a. The surface of the concrete slab be primed in accordance with GDOT Specifications.
    b. A tack coat shall be thoroughly applied to the edge of the existing pavement at the sides of the patch by utilizing the same material used for prime coat on the concrete slab.

H. Should the Contractor delay or postpone the final paving over the trenches, he shall provide a temporary wearing surface for service until such time as the final paving replacement is performed.

1. Temporary paving shall conform to the following requirements:

    a. Paving shall be bituminous surface treatment type, single or double, or layer of bituminous mix, according to the Contractor's judgment as to the time interval between temporary and final paving.
    b. It shall be the Contractor's responsibility to maintain the temporary paving in such condition as to prevent hindrance or hazard to traffic.

    c. When final paving is undertaken:

        1) The temporary surfacing materials shall be removed to accommodate final paving of types and thicknesses as specified hereinabove.
        2) The edges of the existing paving shall be neatly and uniformly trimmed
        3) The permanent pavement shall be placed.
        4) No extra compensation will be allowed for provision and maintenance of temporary paving.

I. Where the pipelines traverse or cross streets, highways, roads or driveways:

1. The Contractor shall conduct his construction operations in such a manner as to minimize interference with traffic and public convenience.
2. All travel ways (highways, roads, streets, driveways, etc.) adjacent to or in the vicinity of the construction work shall be kept free from soil or mud resulting from wash or other movement of stored excavated materials or from transport of materials associated with the construction work.
3. It shall be the responsibility of the Contractor to employ such measures as would reasonably prevent the development of traffic hazards and/or air pollution resulting from his construction operations, such as:

    a. Cleaning and washdown of paved surfaces.
    b. Sprinkling of unpaved streets affected by his construction operations.

J. Paving replacement on Public Rights-of-Way:

1. Shall meet the requirements of the Public Authority having jurisdiction
2. Shall be subject to inspection and acceptance by the Public Authority having jurisdiction.

3.4 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.03 to 0.15 gal./sq. yd.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.

D. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.5 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Tack Coat: Apply uniformly to surfaces of existing pavement or binder course in accordance GDOT Standard Specification.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.6 PAVING GEOTEXTILE INSTALLATION

A. Paving geotextiles shall be placed shall be placed in accordance with GDOT Standard Specification.

3.7 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface in accordance with GDOT Standard Specifications. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted. Maximum allowable aggregate size for each pavement layer shall not exceed (0.4 x Thickness of pavement layer).

3.8 JOINTS

A. Construct joints in accordance with GDOT Standard Specifications. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
4. Construct transverse joints as described in AI MS-22, "Construction of Hot Mix Asphalt Pavements."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.9 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 180 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 94 percent of reference laboratory density according to AASHTO T 209, but not less than 92 percent nor greater than 96 percent.
2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 1559 (Marshall Method), but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.10 INSTALLATION TOLERANCES

A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Binder Course: Plus or minus 1/4 inch.
2. Wearing Course: Plus or minus 1/4 inch.

B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 16-foot straightedge applied transversely or longitudinally to paved areas:

1. Wearing Course: 1/4 inch (6 mm).

3.11 SURFACE TREATMENTS

A. Slurry Seals: Apply slurry coat in accordance with GDOT Standard Specifications.

3.12 PAVEMENT MARKING

A. Apply pavement-marking paint using layout, colors, and placement indicated.
B. Allow paving to cure before starting pavement marking.
C. Sweep and clean surface to eliminate loose material and dust.
D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply, in two coats, at manufacturer's recommended rates.

3.13 WHEEL STOPS

A. Securely attach wheel stops into pavement as indicated. Recess head of dowel beneath top of wheel stop.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.

B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

E. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to [ASTM D 979] [or] [AASHTO T 168].

1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188, ASTM D 1559 or ASTM D 2726.

a. One core sample will be taken for every 500 sq. yd. (418 sq. m) or less of installed pavement, with no fewer than 3 cores taken.
b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188, ASTM D 1559 or ASTM D 2726.

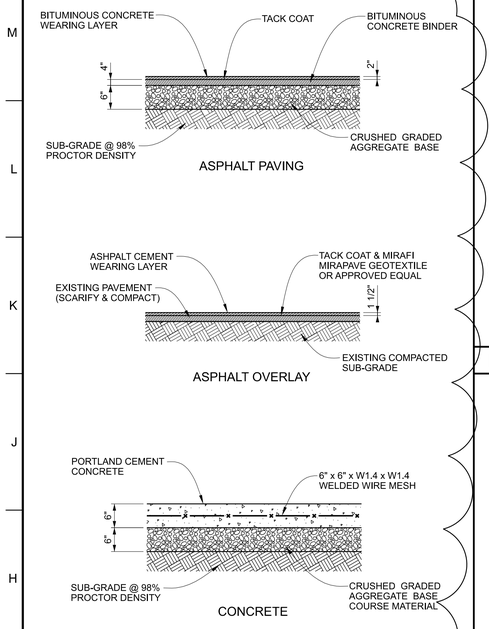
F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.15 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow excavated materials to accumulate on-site.

END OF SECTION 32 12 16

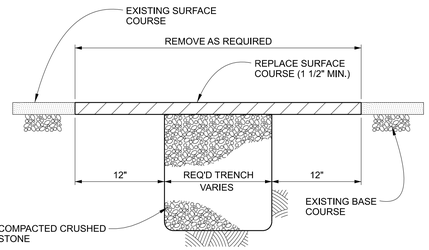


NOTES:

1. CONCRETE SHALL HAVE 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
2. MAXIMUM ALLOWABLE AGGREGATE SIZE FOR EACH PAVEMENT LAYER SHALL NOT EXCEED (0.4 x THICKNESS OF PAVEMENT LAYER).

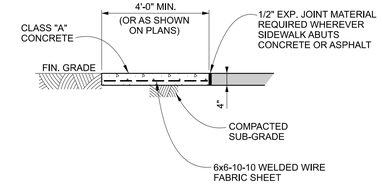
G1 PAVEMENT SECTION DETAIL — NO SCALE

NOTE: EDGE OF EXISTING PAVEMENT MUST BE SAW CUT FOR UNIFORMITY.



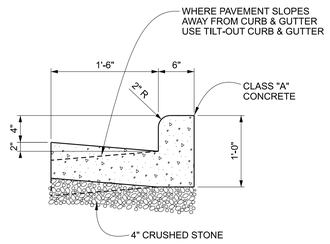
NO SCALE

K4 PAVEMENT REPLACEMENT DETAIL

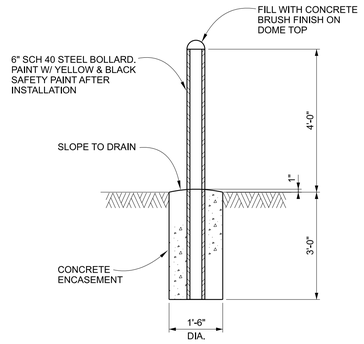


NOTE: 2" DEEP GROOVE EVERY 6 FEET OR AT CHANGE OF DIRECTION; 1/2" EXP. JOINT EVERY 30 FEET

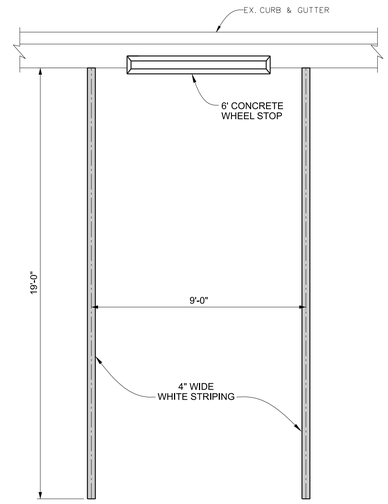
G4 CONCRETE SIDEWALK DETAIL — NO SCALE



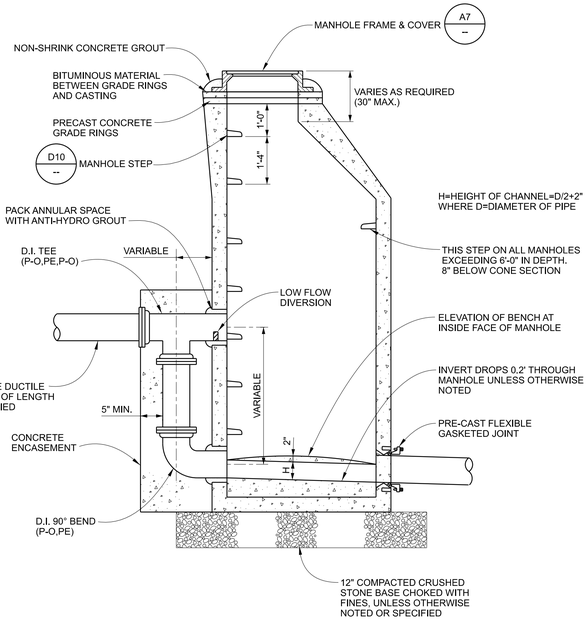
K7 CURB & GUTTER DETAIL — 1"=1'-0"



K10 BOLLARD DETAIL — 1/2"=1'-0"

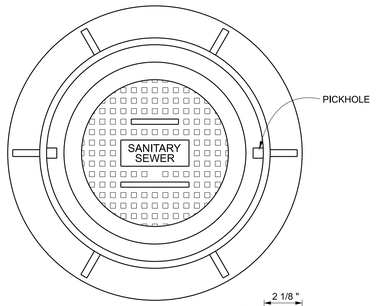


G13 PARKING SPACE DETAIL — NO SCALE

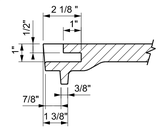


A1 DROP MANHOLE DETAIL - ECCENTRIC — NO SCALE

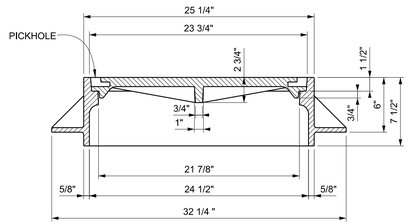
TO BE LETTERED: "STORM DRAIN" ON STORM MANHOLES.



PLAN



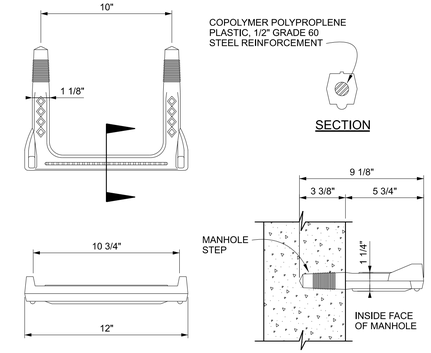
PICKHOLE-DETAIL



SECTION

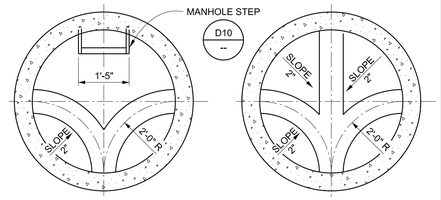
1 1/2"=1'-0"

A7 MANHOLE FRAME & COVER DETAIL



D10 STANDARD MANHOLE STEP — NO SCALE

NOTE:
AT JUNCTION MANHOLES WHERE PIPES ARE DIFFERENT SIZES, PLACE TOPS OF ALL INCOMING PIPES AT SAME ELEVATION, UNLESS OTHERWISE NOTED OR SPECIFIED.



A10 INTERSECTING INVERTS — NO SCALE

KREBS ENGINEERING

GEORGIA REGISTERED No. PE047851 PROFESSIONAL 4/11/22 ENGINEER JACOB M. MAYHARD

CITY OF LAGRANGE, GEORGIA

LONG CANE CREEK POLLUTION CONTROL PLANT IMPROVEMENT

LAGRANGE, GEORGIA

LAGRANGE GEORGIA

Designed: STL	Project No.: 20065
Drawn: NTS / CLM	
Checked: JMM	

Revisions

No.	Date	Description
1	05/19/22	ADD. NO. 5

Sheet Title: MISCELLANEOUS DETAILS

Issue Date: APR., 2022

Sheet No.: DT-04

Sequence: 46 of 80

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THIS IS THE LAST PAGE

Attachments to Addendum No. 5 preceding this page:

1. Proposal Form
2. Specification Section 01220 – Unit Prices
3. Specification Section 321216 – Hot Mix Asphalt
4. Sheet DT-04 – Miscellaneous Details

A total of 23 pages or sheets of drawings (including this page) have been included in Addendum No. 5 General Contractors are requested to return this page as an acknowledgement that you have received this Addendum by e-mail This will NOT be mailed. A copy of this Addendum may be picked up at the office of the Engineer.

Return acknowledgement to Krebs Engineering, Inc. by email to Shelly Fritz – Shelly.Fritz@krebseng.com

Received By_____

Contractor_____

Date_____