



# CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

# MIDWAY DISTRICT STREETSCAPE PHASE II

**Prepared for:**  
CITY OF FORT THOMAS  
130 N. FT. THOMAS AVENUE  
FORT THOMAS, KENTUCKY 41075

**Prepared by:**  
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Fort Mitchell, Kentucky 41017

**Verdantas Project No: 241459**

**February 2025**



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## Table of Contents

1.	Project Information	5
2.	CITY OF FORT THOMAS OFFICIALS	6
3.	Legal Notice – Invitation to Bid	7
4.	Instructions to Bidders	8
4.1	General	8
4.2	Definition of Terms	8
4.3	General Provisions	9
4.4	Examination of Plans, Specifications, General Provisions and Site	9
4.5	Interpretation of Quantities in Proposal	9
4.6	"Or Approved Equal" Items	10
4.7	Addenda	10
4.8	Alternate Bid	10
4.9	General Conditions	10
4.10	Bidder Qualifications	11
4.11	Subcontracts	11
4.12	Bid Guaranty	12
4.13	Preparation of Proposal	12
4.14	Commencement And Completion Dates	13
4.15	Delivery of Proposals	14
4.16	Withdrawal or Modification of Proposals	14
4.17	Public Opening of Proposals	14
4.18	Disqualification of Bids	14
4.19	Non-Responsive Proposals	14
4.20	Rights Reserved By The Owner	15
4.21	Material Guaranty	15
4.22	Notice of Award	15
4.23	Documents Required Prior To Signing of Contract	15
4.24	Contract Guaranty	16
5.	General Provisions	17
5.1	Quantities	17
5.2	Subcontractors	17
5.3	Insurance	17
5.4	Antidiscrimination Clause	19
5.5	Preconstruction Conference And Partnering	19
5.6	Haul Roads	19
5.7	Permits	20
5.8	Operations/Progress Schedule and Coordination	20
5.9	Coordination of Specifications, Plans and General Provisions	20
5.10	Plans	21
5.11	Notice To Proceed	21
5.12	Safety Standard And Accident Prevention	21
5.13	Cooperation By Contractor	22
5.14	Cooperation Between Contractors	22
5.15	Warranty	22
5.16	Control Of Material	22
5.17	Storage Of Materials	23



5.18	Sanitary Measures	23
5.19	Public Convenience And Safety	23
5.20	Protection And Restoration Of Property	23
5.21	Clean Up During Construction	24
5.22	Final Clean-Up	24
5.23	Final Inspection	25
5.24	Utilities	25
5.25	Sewage, Surface, and Floor Flows	25
5.26	Use Of Existing Facilities	25
5.27	Underground Utility Facilities/Cooperation With Utilities	25
5.28	Maintenance During Construction	26
5.29	Failure To Maintain Roadway Or Structure	27
5.30	Protection Of Existing Structure	27
5.31	Construction Videos And Photographs	28
5.32	Monuments And Landmarks	29
5.33	Base Lines and Benchmarks	29
5.34	Restoration Of Disturbed Areas	29
5.35	Supervision Of The Work	29
5.36	Defective Or Unacceptable Work	30
5.37	Intent of Contract	30
5.38	Measurement Of Quantities	31
5.39	Plans And Estimated Quantities	31
5.40	Prices	31
5.41	Alternation Of Plans Or Character Of Work	31
5.42	Extra Work	32
5.43	Modification Of Contractor Or Change Orders	32
5.44	Disputes And Contractor Claims	33
5.45	Time Of Completion And Damages For Delays	33
5.46	Failure To Complete On Time	34
5.47	Unsatisfactory Progress And Termination Of The Contract	35
5.48	Payments	35
5.49	Waiver Of Mechanic's Lien	36
5.50	Acceptance Of Final Payment	36
5.51	Termination Of The Owner's Liability	37
5.52	Termination For Cause	37
5.53	Termination For Convenience	38
5.54	Contractors Right To Terminate Contract	38
5.55	Guarantee Of Work	38
5.56	Notice	39
5.57	No Estoppel	39
5.58	Assignment	39
5.59	Independent Contractor Status	40
5.60	Other Contracts	40
5.61	Patents	40
5.62	Laws, Ordinances And Regulations	41
5.63	Environmental Protection	41
5.64	Taxes	41
6.	Utility Ownership	42
7.	Specifications For Construction	43



8.	Special Provisions	44
8.1	Items 105.07 / 107.15 - Cooperation With Utilities	44
8.2	Coordination With Utilities	44
8.3	Item 105.06 – Cooperation Between Contractors	44
8.4	Item 106 – Control Of Material	44
8.5	Item 106.08 - Storage Of Materials	45
8.6	Item 108.02 - Preconstruction Conference	45
8.7	Item 107.04 - Permits, Licenses And Taxes	46
8.8	Item 107.14 - Contractor's Responsibility For Work	46
8.9	Item 112 - Maintaining Traffic	47
8.10	Item 201 Stake Out	47
8.11	Items 202 / 203 Removals	48
8.12	Items 202 / 203 - Debris Removal	48
8.13	Item 202 – Clearing And Grubbing	48
8.14	Item 203 - Removal Of Existing Pipe And Catch Basins	48
8.15	Items 206 / 207 / 302 / 701 - Testing Of Compacted Materials	49
8.16	Item SPL - Yard Restoration (4" Topsoil, Seed And Mulch)	49
8.17	Item 212 / 213 - Erosion Control And Water Pollution Control	51
8.18	Full-Depth Pavement Sawing	51
8.19	Item 403 - Sealing Edges	51
8.20	Item 403 - Brooming And Cleaning	51
8.21	Item 406 - Tack Coat	51
8.22	Item 408 - Asphalt Pavement Milling and Texturing	51
8.23	Testing Of Construction Materials	52
8.24	Item 505 - Walks, Curb Ramps, And Steps	53
8.25	Item 505 - Concrete Driveway Apron	53
8.26	Item 601 - Concrete – General	54
8.27	Item 701 – Grading At Inlets And Outfalls Of Proposed Conduits	54
8.28	Existing Pipe	54
8.29	Item 701 – Review of Drainage Facilities	55
8.30	Control Of Work	55
8.31	"Or Approved Equal" Items	55
8.32	Payment	55
9.	Supplemental Specifications Section	56
10.	Bid Proposal and Legal Forms	A
11.	Bidder Information Sheet	B
12.	Bid Proposal	C
13.	Bid Form	D
14.	Bid Guaranty And Contract Bond	E
15.	Certificate As To Interest	G
16.	Subcontractors List	H
17.	Certification As To Kentucky Resident Status	I
18.	Certification As To Non-Resident Status	K
19.	Contract	L
20.	Personal Property Tax Affidavit	N
21.	Guarantee	O



## 22. Final Release Of Lien

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# 1. Project Information

**PROJECT:** MIDWAY DISTRICT STREETScape PHASE II

**OWNER:** CITY OF FORT THOMAS  
130 N. FT. THOMAS AVENUE  
FORT THOMAS, KENTUCKY 41075  
CAMPBELL COUNTY, KENTUCKY

**ENGINEER:** VERDANTAS, LLC  
2161 CHAMBER CENTER DRIVE  
FORT MITCHELL, KENTUCKY 41017

**CONTACT:** ROBERT SEITZINGER  
**TELEPHONE:** (859) 534-9936  
**EMAIL:** RSEITZINGER@VERDANTAS.COM  
**Web Site:** [www.verdantas.com](http://www.verdantas.com)

**PROJECT #:** 241459

**BID OPENING DATE:** FRIDAY, MARCH 14, 2025 @ 2:00 PM

**ADVERTISING DATE:** FRIDAY, FEBRUARY 14, 2025

**COMMENCEMENT DATE:** APRIL 01, 2025

**COMPLETION DATE:** JUNE 30, 2026



## 2. CITY OF FORT THOMAS OFFICIALS

### MAYOR

ERIC HAAS

### CITY ADMINISTRATOR

MATTHEW KREMER

### GENERAL SERVICES DIRECTOR

KEVIN BARBIAN

### CITY COUNCIL

JEFF BEZOLD

ADAM BLAU

ANDY ELLISON

LAUREN MCINTOSH

BEN PENDERY

ERIC STRANGE

### CITY ATTORNEY

TIM SCHNEIDER





### 3. Legal Notice – Invitation to Bid

## CITY OF FORT THOMAS, KENTUCKY

### CAMPBELL COUNTY

### LEGAL NOTICE

Sealed proposals will be received at the office of the City Clerk, Municipal Building, **CITY OF FORT THOMAS, 130 N. FT. THOMAS AVENUE, FORT THOMAS, CAMPBELL COUNTY, KENTUCKY, 41075** until 2:00 PM. local time on **FRIDAY MARCH 14, 2025**, for furnishing all labor, materials, and equipment necessary to complete project known as **MIDWAY DISTRICT STREETScape PHASE II** and, at said time and place, publicly opened and read aloud.

Bids must be in accordance with drawings and specifications and on forms available from CT Consultants, Inc. at a non-refundable cost of Two Hundred Dollars (\$200.00) for mailed hard copies and \$45.00 for electronic files. Documents may be ordered by registering and paying for the documents online at <https://bids.ctconsultants.com>. Please contact [planroom@ctconsultants.com](mailto:planroom@ctconsultants.com) or call 440-530-2351 if you encounter any problems registering or paying for the documents.

The bid specifications, drawings, plan holders list, addenda, and other bid information (**but not the bid forms**) may be viewed and/or downloaded for free via the internet at <https://bids.ctconsultants.com>. The bidder shall be responsible to check for Addenda and obtain same from the web site.

Proposals must contain the full name of the party or parties submitting the same and all persons interested therein. It is the intent and requirements of the owner that this project be completed no later than **JUNE 30, 2026**.

The City Council of the **CITY OF FORT THOMAS**, reserve the right to waive irregularities and to reject any or all bids.

The City Council of the **CITY OF FORT THOMAS** shall authorize acceptance of the bid made by the responsible bidder who, in Council's judgment, offers the best and most responsive proposal to the City, considering quality, service, performance record, and price; or Council may direct the rejection of all bids. The City may award based on "functional equivalence" concerning specified work or products.

By the order of the City Council of the **CITY OF FORT THOMAS**.

Publishing Date: LINKNKY.com – **FEBRUARY 14, 2025**



## 4. Instructions to Bidders

### 4.1 General

Sealed bids will be received until **MARCH 14, 2025**, at **2:00 PM.**, at the office of the City Clerk, Municipal Building, City of **FORT THOMAS, 130 N. FT. THOMAS AVENUE, FORT THOMAS, KENTUCKY 41075** for the furnishing of labor and materials required for the **MIDWAY DISTRICT STREETScape PHASE II**, all in accordance with these instructions, conditions, specifications, and on the enclosed forms. All shall be submitted in a sealed envelope addressed to the City of Fort Wright and shall be plainly marked on the outside of the envelope **MIDWAY DISTRICT STREETScape PHASE II**. No bid may be withdrawn, once the bid has been deposited with the Owner, except in accordance with Kentucky Standard Specifications for Road and Bridge Construction, Section 102.11. Proposals received after the time for the opening of bids will be returned to the Bidder unopened. All bids shall remain valid for a period of sixty (60) days from the date of Bid Opening.

### 4.2 Definition of Terms

Whenever the term “Bidder” occurs, it shall mean any person, firm or corporation as a Prime Contractor who submits a proposal/bid for the Project, either acting directly or through a duly authorized representative.

Whenever the term “Bid Packet” occurs, it shall mean all the documents contained herein and any addenda thereto.

Whenever the term “City” or “Owner” occurs, it shall mean the **CITY OF FORT THOMAS**. The Mayor, or their designee, shall be the representative for the Owner.

Whenever the term “Contract” occurs, it shall mean the written agreement between the Owner and the Contractor covering the performance of the Work on the Project and the furnishing of labor and/or materials in the construction of the Work on the Project, including the Contract Documents.

“Contract Documents” shall mean these Instructions to Bidders and General Conditions, the Specifications, any Drawings and/or Plans, the Contract Bond and all other forms or certificates required by these Instructions, all forms included with the Contractor’s Bid, all the material contained in this Bid Packet, any Change Orders, and all addenda to any of the aforementioned items. The Contract Documents shall be a part of the Contract as if fully rewritten therein.

Whenever the term “Contractor” occurs, it shall mean a person, firm or corporation contracting with the Owner as a Prime Contractor to supply labor, materials, or equipment or all for the Project.

Whenever the term “Construction Manager” or “Engineer” occurs, it shall mean CT Consultants, Inc., or agent so designated by the Owner to act as the Owner’s agent.

Whenever the term “Director” occurs, it shall mean the Owner, or the Owner’s agent.

Whenever the term “Project” occurs, it shall mean the entire public improvement proposed by the Owner to be constructed in part or in whole pursuant to the Contract.

Whenever the term “Proposal or “Bid” occurs, it shall mean the offer of the Bidder to perform the Work on the Project, when said offer is made out and submitted on the prescribed forms, properly signed and guaranteed, and in the prescribed manner.



Whenever the term “Subcontractor” occurs, it shall mean a person, firm, or corporation other than the Prime Contractor supplying labor and materials for the Work to the Contractor and under the control of the Contractor.

Whenever the term “the Work” occurs, it shall mean the Work to be performed in constructing and completing the Project, including all labor, materials and equipment.

### **4.3 General Provisions**

The most current State of Kentucky, Transportation Cabinet, Department of Highways (KTC) Standard Specifications for Road and Bridge Construction, as specifically set forth herein, are adopted and made part of these Contract Documents, unless specifically excluded herein.

All references to the Director, the Director of Highways, the First Assistant Director, and Chief Engineer, the Deputy Director of Design and Construction, the Deputy Director of Operations, the Engineer of Construction, the Engineer of Maintenance, the Engineer of Bridges, the Engineer of Tests, shall be considered to read the Engineer.

All references to the State, the State of Kentucky, the Cabinet, or the Transportation Cabinet shall be considered to read the Owner.

### **4.4 Examination of Plans, Specifications, General Provisions and Site**

The Bidder is expected to examine carefully the site of the proposed Work, the proposal, plans, specifications, contract documents, general provisions, and addenda, before submitting a proposal. The submission of a bid shall be considered evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the Work and as to the requirements of the plans, specifications, general conditions, special provisions, addenda and Contract.

Subject to public safety and convenience, prospective Bidders will be permitted to explore the site of the Work by boring or test pits, permits for which will be issued by the Engineer.

Explorations shall be at the sole risk and expense to the Bidder and under conditions of safety, maintaining traffic, and restoring all areas disturbed by any and all explorations to conditions equal to, or better than, the condition prior to exploration.

The Owner does not make any representation of soil or foundation conditions or materials, nor does it represent that drawings may not be modified to meet changes in soil conditions encountered as the Work progresses. The Contractor must inspect the site of the proposed Work and must assume all risk as to the nature and behavior of the material which may be encountered in excavation, whether apparent on the surface or disclosed only in the course of the Work.

### **4.5 Interpretation of Quantities in Proposal**

The quantities appearing in the proposal are approximate only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of Work performed



and accepted or materials furnished and accepted in accordance with the Contract except for lump sum contracts and except for lump sum items in unit price contracts. The scheduled quantities of Work to be done and materials to be furnished may be increased, decreased, or omitted as hereinafter provided

#### **4.6 "Or Approved Equal" Items**

In the preparation of these documents and plans, several proprietary products may have been specified. In all such cases, it is to be understood that the Contractor may offer a substitute for the specified product, as indicated by "Or Approved Equal". However, the Contractor must be aware that, before commencement of construction, he must provide information to the Engineer concerning the substituted product, and that the Engineer must approve in writing the offered product as being equal to the specified product before use or incorporation in the Work.

Unless otherwise modified by the Engineer, proprietary products are to be installed and/or constructed in strict compliance with the pertinent manufacturer's specifications.

#### **4.7 Addenda**

The Contractor shall notify the Engineer promptly of any discrepancies in, or omissions from the Contract Documents. The Engineer will issue a clarifying addendum to each person on record as having received a set of Contract Documents. The Owner will not be responsible for oral instruction or information. Questions received less than five (5) days prior to bid date cannot be answered. Any Addenda issued during the bidding period are to be included in the Proposal and shall become a part thereof.

#### **4.8 Alternate Bid**

It is the Owner's intent for the Contractor to bid on either the base or alternate bid items. Upon award of the Contract, the Owner will inform the Contractor, in writing, if the base bid or alternate bid items will be included with the Project.

Award of the project will be based on the base bid or alternate bid items ultimately selected by the Owner for inclusion in the project and award amount.

**The Owner reserves the right to award or delete any or all combinations.**

#### **4.9 General Conditions**

The successful Bidder/Contractor shall be responsible for all site operations related to the Work as shown and described in the Specifications, Plans and related General Provisions, and shall meet all requirements of these Instructions, General Provisions, and Specifications. All Work shall be completed in compliance with these Instructions, the General Provisions, Specifications, Plans and other Contract Documents.



#### **4.10 Bidder Qualifications**

The Owner requires that the Bidder furnish satisfactory evidence that he has the necessary resources to fulfill the conditions of the Contract and the Specifications. Each Bidder shall submit on the form included in the Bid Packet, a statement of the Bidder's qualifications. Each Bidder must furnish satisfactory evidence that it is operating a business of a type that can meet the Specifications for the Work and that it has operated such business for at least the last two (2) years. Only Bidders who have sufficient experience; ample equipment and personnel; adequate financial resources or the ability to obtain such resources as required during the performance of the Contract; who are able to comply with the required performance schedule for the Work; who have a satisfactory record of integrity; who have a satisfactory record of performance (Bidders who are delinquent in current contract performance, when the number and the extent of the delinquencies of each are considered, shall be presumed to be unable to fulfill this requirement, in the absence of evidence to the contrary or circumstances properly explained); and who are otherwise qualified and eligible to receive an award under applicable Kentucky laws and regulations, shall be considered.

The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract, and the Bidder shall furnish to the Owner all such information and data for this purpose as it may request. The right is reserved to reject any bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

The Owner requires that the Bidder furnish a list of references of all persons, corporations, political subdivisions or firms for whom the Bidder has done the type of Work required for this Project within the last two (2) years.

#### **4.11 Subcontracts**

The Bidder shall submit, with his bid, a complete list of the names and addresses of any subcontractors he contemplates for use on the Project. In addition, the Owner requires that the Bidder furnish a list of subcontractor references of all persons, corporations, political subdivisions or firms for whom the proposed subcontractor has done the type of Work proposed under contract between the Contractor and the subcontractor within the last two (2) years.

The subcontractor must be acceptable to the Owner and approved by the Owner, in writing, prior to the execution of the Contract. Although such approval shall not be arbitrarily withheld, subcontractors that have proven unsatisfactory in the past or do not have adequate manpower or resources to perform the Work will not be accepted. Only subcontractors who have sufficient experience; ample equipment and personnel; adequate financial resources or the ability to obtain such resources; who are able to comply with the required performance schedule for the Work; who have a satisfactory record of integrity; who have a satisfactory record of performance (Bidders who are delinquent in current contract performance, when the number and the extent of the delinquencies of each are considered, shall be presumed to be unable to fulfill this requirement, in the absence of evidence to the contrary or circumstances properly explained); and who are otherwise qualified and eligible to receive an award under applicable Kentucky laws and regulations, shall be considered.

The subcontractor must submit a non-collusion affidavit prior to the execution of the Contract.



Approval of the proposed subcontractor(s) will not be given by the Owner unless and until the above requirements are met. Although the Bidder is not required to submit the required Subcontractor forms, filled out by any proposed subcontractors, with its bid, the Bidder is hereby advised of these requirements so that appropriate action can be taken to prevent subsequent delays in subcontract awards and/or the execution of the Contract.

After the Subcontractors have been approved and the Contract signed, no changes in the subcontractors shall be made without the prior written approval of the Owner.

#### **4.12 Bid Guaranty**

In accordance with Kentucky Transportation Cabinet Standard Specifications for Road and Bridge Construction Section 102.09, and in order to assure that if the Bidder's bid is accepted that it will enter into the Contract with the Owner, each bid must be accompanied by a Bid Guaranty in the form of either:

1. A Bond for 10% percent of the bid, in the form of a Bid Guaranty Bond, acknowledged by the Bidder, as principal, and by a surety company qualified to do business in the State of Kentucky, and satisfactory to the Owner as surety; or
2. A cashier's check or certified check issued by a responsible bank or trust company, and made payable to the order of the Owner, in the sum of at least ten percent (10%) of the Bid.

The Bid Guaranty shall be enclosed in the sealed envelope containing the Bid.

If the bidder chooses to submit a Bid Guaranty Bond, the bond shall be in the form prescribed by KTC Standard Specifications for Road and Bridge Construction Section 103.05. The Bond must be signed by an authorized agent of an acceptable surety bonding company and by the Bidder. The bond must be countersigned by a resident agent of the bonding company and its corporate seals must be affixed to all copies. ***The name and address of both the surety and surety's agent must appear on the bond.*** Bid Guaranty must be supported by credentials showing the Power of Attorney of the surety's agent.

Bid guaranties (cashier's check or certified check) will be returned to unsuccessful Bidders within fifteen (15) days of the execution of the Contract with the successful Bidder.

Once the bid is awarded pursuant to the Notice of Award, the Contractor will be required to execute the Contract with the Owner within ten (10) days of its receipt of said Notice. Execution of the Contract shall require the submittal of a Performance Bond (unless the Bidder has already submitted a Bid Guaranty Bond), proof of insurance, and other documents, as outlined below. Executed copies of the bond and insurance certificates are required for each set of Contract Documents. If the Contractor fails to execute the Contract within the required time, the Contractor's Bid Guaranty may be forfeited to the Owner, not as a penalty, but as liquidated damages, in accordance with the terms of the Bid Guaranty. The Project may then be rebid or awarded to the next lowest and best bidder, as the Owner determines at its own discretion.

#### **4.13 Preparation of Proposal**

The Bidder shall submit their Proposal upon the forms furnished by the Owner. All blank spaces for bid prices must be filled in, in words or figures, and shall be written in ink or typewritten. The Bidder shall initialize any corrections or changes in the Proposal.



The Bidder's Proposal must be signed in ink by the individual, by one or more members of the partnership, or by one or more officers of a corporation, or by an agent of the Bidder legally qualified and acceptable to the Owner. If the Proposal is made by an individual, his name and business address must be shown; by a partnership, the name and business address of each partnership member must be shown; by a corporation, the name of the state under the laws of which the corporation is chartered and the name and title of the officer or officers having authority under the bylaws to sign contracts, the name of the corporation and the business address of its corporate officials must be shown.

A foreign corporation submitting a Proposal must comply with the laws of doing business in the State of Kentucky, if its Proposal or any part thereof is accepted.

To be considered responsive, each bid shall consist of the following, fully executed:

1. Bidder Information Sheet
2. Bid Proposal
3. Bid Form
4. Bid Guaranty and Contract Bond
5. Certificate as to Interest
6. Subcontractors List
7. Certification As to Kentucky Resident Status OR Certification As to Non-Resident Status
8. Personal Property Tax Affidavit

The Bidder's attention is directed to all applicable Federal, State, and local laws, and the rules and regulations of all authorities and agencies having jurisdiction over the Work. All such laws, rules, and regulations shall apply to the Contract and every aspect of the Work and shall be deemed included as a part of the Contract as if the same were fully written therein.

The attention of Bidders is especially directed to the following:

1. Federal and Civil Rights Law regulating Equal Opportunity Employment
2. Bid Guaranty and Contract Bond requirements
3. Statutory requirements of the State of Kentucky relative to licensing of corporations organized under the laws of any other state
4. Federal or State of Kentucky Prevailing Wage Law

The price or prices shown on the proposal shall include all costs associated with the Work (including labor), shall be the actual price(s) to be paid by the Owner, and shall include all discounts, allowances, etc. Each Bidder shall bid on each item listed in the Proposal

Where a discrepancy appears between the sum shown in the "Total" column and the correct product of the sums appearing in the "Estimated Quantity" and "Unit Price" columns, the correct product of the sums appearing in the "Estimated Quantity" and "Unit Price" columns shall control.

#### **4.14 Commencement And Completion Dates**

Contractor may not begin work prior to **APRIL 01, 2025** (unless previous approval is given by the Owner).





It is the intent and requirement of the Owner that the proposed work shall be installed and operational no later than the date stated in the contract contained within this document.

#### **4.15 Delivery of Proposals**

The total Contract Documents and Specifications book shall be placed, together the required completed forms, in a sealed envelope addressed to the Owner. Proposals will be received until the hour and date set for the opening thereof and must be in the hands of the Owner's appointed representative by such time. Proposals received after the time indicated for the opening of bids will be returned to the Bidder unopened.

#### **4.16 Withdrawal or Modification of Proposals**

No bid may be withdrawn, once the bid has been deposited with the Owner, except in accordance with Kentucky Standard Specifications for Road and Bridge Construction, Section 102.11. Likewise, modifications to a bid, once submitted, shall not be accepted.

#### **4.17 Public Opening of Proposals**

Proposals will be opened and read loud publicly at the time and place designated in the Legal Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

#### **4.18 Disqualification of Bids**

Any bid submitted unsealed or unsigned, or any bid deemed unresponsive will be disqualified and returned to the Bidder. Bids submitted without a Bid Guaranty or an invalid Guaranty will be disqualified and will be returned to the Bidder.

#### **4.19 Non-Responsive Proposals**

Proposals may be considered non-responsive and may be rejected for the following reasons:

1. If the Proposal is on a form other than that furnished by the Owner or if the form is altered or any part thereof is detached.
2. If there are unauthorized additions, conditional or alternate bids, conditions, or irregularities of any kind which may tend to make the Proposal incomplete, indefinite or ambiguous as to its meaning.
3. If the Bidder adds any provisions reserving the right to accept or reject the Award or to enter into the Contract pursuant to the Award. This does not exclude a bid limiting the maximum gross amount of awards acceptable to any one Bidder at any one bid letting, provided that any selection of awards will be made by the Owner.





#### **4.20 Rights Reserved By The Owner**

The Owner reserves the right to review and evaluate all bids for a period of sixty (60) days.

The Owner reserves the right to reject any and all bids, to waive any discrepancies or irregularities in the bidding, and to determine, in its own discretion, which Proposal is the best bid. Lowest bid, while a major consideration, will not exclusively govern the Bid Award. The Bid Award shall be made from all considerations, including costs and the responsibility of the Bidder.

The Owner reserves the right to reject the bid of any Bidder who has previously failed to perform properly or complete on time contracts of similar nature; who is not in a position to perform the Contract; or who has habitually, and without just cause, neglected the payment of bills or otherwise disregarded his obligations to subcontractors, materialmen or employees.

In addition to the above-mentioned items, the Owner will also consider the following in determining the best bid: that the Bidder maintains a permanent place of business; has adequate equipment to do the Work properly and expeditiously; has suitable financial status to meet the obligations incidental to the Work; and has the necessary experience.

The Owner reserves the right to award or delete any or all items or combination of items.

#### **4.21 Material Guaranty**

Before the Contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition and manufacturer of any or all materials to be used in the construction of the Work together with samples, of which said samples may be subjected to any tests the Owner, in its sole discretion, deems appropriate to determine their quality and fitness for the Work.

#### **4.22 Notice of Award**

The award of the Contract, if it be awarded, will be made to the best overall Bidder whose Proposal complies with all the requirements prescribed. In no case will an award be made until all necessary investigations are made as to the responsibility of the Bidder to whom it is proposed to award the Contract. The successful Bidder will be notified by letter, mailed to the address shown on his Proposal that his bid has been accepted and that he has been awarded the Contract.

#### **4.23 Documents Required Prior To Signing of Contract**

Immediately upon the award of the bid and prior to the signing of the Contract, the Contractor shall furnish to the Owner:

1. Kentucky Workers' Compensation Certificate.
2. Credentials showing the Power of Attorney of the Agent of the Surety
3. A Certificate of Compliance issued by the Division of Insurance showing the right of the bonding company to do business in the State of Kentucky.



4. A Certificate of Insurance with coverage as specified in these Instructions, covering the period of time the Work will be in progress.
5. Listing of selected subcontractor(s) for Owner approval, in accordance with the second paragraph under "Subcontracts" of these Instructions.

#### **4.24 Contract Guaranty**

If the Contractor submitted a Bid Guaranty Bond in the form prescribed by the KTC Standard Specifications for Road and Bridge Construction Section 102.09 for the full amount of its bid, the same shall be retained by the Owner as the Contractor's Performance Bond.

If the Contractor submitted a cashier's check, certified check or letter of credit, the Contractor, at the time the Contract is entered into, shall furnish a Performance Bond, in the form prescribed by KTC Standard Specifications for Road and Bridge Construction Section 102.09, payable to the Owner, for the total amount of the Contract. Said Bond shall be duly executed by the Contractor, as principal, and by a surety company qualified to do business under the laws of the State of Kentucky and satisfactory to the Owner, as surety, for the faithful performance of the Contract and payment for labor and materials. The Bond must be signed by an Authorized Agent of an acceptable surety bonding company and by the Contractor. The Performance Bond must be countersigned by a resident agent of the bonding company and its corporate seals must be affixed to all copies. The name and address of both the surety and surety's agent must appear on Bond, and it must be supported by credentials showing the Power of Attorney of the surety's agent.

The premiums of such Bonds shall be paid by the Contractor.

If the Contractor fails to perform under the Contract, the Performance Bond may be forfeited by the Contractor to the Owner, in accordance with the termination provisions contained herein.



## 5. General Provisions

### 5.1 Quantities

The Owner reserves the right to delete quantities of either labor or materials or both, from the Contract, as deemed necessary by the Owner, to meet any funding restrictions for the Work.

### 5.2 Subcontractors

The Contractor may utilize subcontractors, subject to the following:

1. The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of the Contract or his rights, title or interest in or to the same or any part thereof, without the written consent of the Owner. Such consent shall not release or relieve the Contractor or his Surety from any obligation or liability under the Contract. In no case will the Contractor be permitted to sublet more than fifty percent (50%) of the total Contract cost.
2. The Contractor shall not award subcontracts to any subcontractor without prior written approval of the Owner.
3. The Contractor shall be fully responsible for the acts or omissions of any of its subcontractors. Nothing contained in the Contract or the Contract Documents shall create any contractual relationship between the Owner and any subcontractors.
4. The Contractor shall cause appropriate provisions to be inserted in all subcontracts that bind the subcontractor to the Contractor under the same terms of any provisions of the Contract Documents that are applicable to the Work of the subcontractor, and that give the Contractor the right to terminate the subcontractor for any violation of those provisions by the subcontractor.

### 5.3 Insurance

The Contractor shall not commence Work under the Contract until it has obtained all insurance required under this paragraph. The policies shall also protect the Owner, its officers, agents, and employees as additional insured, and shall be in a form approved by the Owner. Certified copies of the insurance policies, fully executed by officers of the insurance company, shall be submitted with the executed Contract and must be submitted before the Notice to Proceed will be sent. Coverage will be provided through insurance companies licensed to do business in the State of Kentucky.

During the term of the Contract, the Contractor will agree to provide evidence of insurance in the amounts stated below. The Contractor may also be required to submit the original insurance policies for inspection and approval of the Owner before Work is commenced. Said policies shall provide that they cannot be cancelled, permitted to expire, or be changed without fifteen (15) days advanced written notice to the Owner. The Contractor shall provide all insurance required by this Contract.

Required Insurance: The Contractor shall take out, and maintain during the life of the Contract, Comprehensive General Liability Insurance, Automobile Liability Insurance and an Excess Liability Umbrella Form. Such policies shall protect the Contractor and the Owner from any and all claims or damages for bodily injury, including accidental death, as well as any and all claims for property



damage, during the performance of any and all Work under the Contract, whether such performance be by the Contractor, any subcontractor, or by anyone directly or indirectly employed by either of them or in any such manner as would impose liability on the Owner. The **minimum** required limits for each type of policy are as follows:

- A. Comprehensive General Liability:
  - (1) General Aggregate \$1,000,000
  - (2) Bodily Injury/Wrongful Death \$1,000,000 per person  
\$1,000,000 per occurrence  
\$2,000,000 aggregate liability
  - (3) Property Damage\* \$1,000,000 per occurrence  
\$2,000,000 aggregate liability
  
- B. Comprehensive Automobile Liability:
  - (1) Bodily Injury/Wrongful Death \$1,000,000 per occurrence  
\$1,000,000 aggregate liability
  - (2) Property Damage\* \$1,000,000 per occurrence  
\$1,000,000 aggregate liability
  
- \*Including any damage caused by blasting or underground excavation.
  
- C. Excess Liability Umbrella Form:
  - (1) General Aggregate \$3,000,000
  - (2) Each Occurrence \$1,000,000

Owner's Protective Liability Insurance: The Contractor shall take out, and maintain during the life of the Contract, an Owner's Protective Liability Insurance policy in the name of the Owner. The primary insurance policy shall not be less than a minimum combined single limit of \$1,000,000. In addition, a \$1,000,000 excess policy will be required. The policy shall protect the Owner from any claims or damages that may arise out of or result from the performance of any Work or from any operations, either directly or indirectly, by the Contractor or its subcontractors under the Contract.

Subcontractor's Insurance: The Contractor shall require subcontractors not protected under the Contractor's insurance policies to take out and maintain insurance of the same nature and kind and in the same amounts as required of the Contractor.

Workers' Compensation Insurance: Before any Work is commenced, the Contractor shall take out, and maintain during the life of the Contract, Workers' Compensation Insurance for all of its employees, in accordance with the laws of the State of Kentucky. In case any Work is subcontracted, the Contractor shall require the subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in Work under this Contract is not protected under the Workers' Compensation statute, the Contractor shall provide Employee Liability Insurance for any such employees and shall provide or cause each subcontractor to provide the same.



#### **5.4 Antidiscrimination Clause**

The Contractor hereby agrees to the following:

1. That in the hiring of employees for the performance of the Work under this Contract or any subcontract, neither the Contractor nor any subcontractor, nor any persons acting on behalf of the same, will discriminate against any citizen in the employment of or laborers or workers who are qualified and available to perform the Work, for reasons of race, creed, color, national origin, religion, age, sex, handicap, or familial status; and
2. That neither the Contractor nor any subcontractors, nor any persons acting on behalf of the same, shall in any manner discriminate or intimidate any employee hired for the performance of the Work on account of race, creed, color, national origin, religion, age, sex, handicap, or familial status.

#### **5.5 Preconstruction Conference And Partnering**

A preconstruction conference with the Owner will be required of the successful Bidder/Contractor. Said conference will be held for the purpose of reviewing the Specifications, Plans, and execution of the Work. The Engineer will arrange the meeting between the Contractor, the Owner, and representatives of the utility companies, and all parties shall be notified of the time, date, and location of the conference by the Engineer. The Agenda for the conference shall include, as a minimum, the following items:

1. Status of Contract and Notice to Proceed
2. Utility company requirements, BUD notification
3. Designation of emergency 24-hour Contractor contacts
4. Discussion of critical items
5. Required permits.
6. Notice to property owners
7. Maintenance of Traffic
8. Review of testing requirements and inspection procedures
9. Operations schedule and completion date
10. Listing of haul roads
11. Confirmation of subcontractors and suppliers
12. Review of the Change Order process
13. Payment Request submittal procedures
14. Payroll submittal procedure

#### **5.6 Haul Roads**

The Contractor shall also provide at the preconstruction conference, a list of the local roads to be used for the purpose of hauling equipment and/or material to or from the Project site. Only the local roads in the vicinity of the Project have to be listed; state and/or Federal roads do not have to be included. Where necessary, the list shall include the extent of the roads to be affected and any special restrictions, such as height or weight restrictions, which may be applicable. Construction shall not commence until the Owner has reviewed the haul roads list and approved the same. The submission of the list and approval of the same do not relieve the Contractor the responsibility for conforming to and obeying all applicable height and weight restriction on the haul roads, nor from responsibility for any damages done to, on or along said haul roads. The Contractor is referred to



KTC Standards and Specifications for Road and Bridge Construction Section 105.10 concerning restrictions.

## **5.7 Permits**

The Contractor will be required to obtain all permits necessary in connection with the Work. All permits shall be subject to the inspection of the Owner.

Work on this project will be subject to the requirements of the encroachment permit obtained from the Kentucky Transportation Cabinet, including work hours and maintenance of traffic requirements.

## **5.8 Operations/Progress Schedule and Coordination**

At the preconstruction meeting, the Contractor shall submit to the Engineer a schedule showing the method and manner which the Contractor proposes to pursue so as to complete the proposed Work in such a manner that it will be ready for final acceptance within the time stated in the Proposal. Said schedule will show location, sequence, equipment, manpower, and estimated calendar days to complete each segment of Work required. Upon approval by the Engineer of the starting point of the various phases of the construction, the method and manner of performing the Work and the sequence of operations shall not be altered except with the approval of the Owner. Changes to said schedule are to be issued in writing and approved by the Engineer and Owner before operations are changed or rescheduled.

The Contractor shall use all practical means to make the progress of the Work conform to that shown on the progress schedule which is in effect. No payment will be made to the Contractor while he is delinquent in the submission of a progress schedule. Should the prosecution of the Work, for any reason, be discontinued, the Contractor shall notify the Owner at least twenty-four (24) hours in advance of resuming operations.

## **5.9 Coordination of Specifications, Plans and General Provisions**

The specifications, the supplemental specifications, the plans, general provisions, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary to each other and to describe and provide for a complete project. In case of discrepancy, calculated dimensions will govern over scaled dimensions, plans will govern over specifications, proposals and special provisions will govern over both specifications and plans.

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications. In the event the Contractor discovers such an error or omission, he shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the plans and specifications. See "Extra Work" and "Modification of Contract or Change Orders".

All items salvaged as part of this Contract shall be removed by the Contractor without damage as excavation and work progresses and placed within the right-of-way where they may be conveniently



picked up by the Owner's forces. Old materials not reserved by the Owner and not being used in the work will become property of and must be disposed of by the Contractor.

## **5.10 Plans**

If applicable, the plans illustrate the general character and scope of the Work covered by the Specifications and Contract Documents. Additional detailed drawings and other information deemed necessary by the Engineer will be furnished to the Contractor when and as required by the Work. Shop drawings, when approved by the Engineer, shall govern all details of the Work and shall take precedence over all other drawings. Figured dimensions on drawings shall take precedence over general drawings and shall be considered as explanatory and not as indicating extra work.

## **5.11 Notice To Proceed**

Once the Contract has been entered into and the preconstruction conference held, the Owner will provide the Contractor a Notice to Proceed. Said Notice shall state the beginning date the Contractor shall commence the Work and the date by which the Work is to be completed.

## **5.12 Safety Standard And Accident Prevention**

With respect to all Work performed under the Contract, the Contractor shall comply with all safety standard provisions of (1) all applicable building and construction codes; (2) the *Manual of Accident Prevention in Construction*, published by the Associated General Contractors of America; (3) the requirements of the Occupational Safety & Health Act, and the requirements of Title 29 of the Code of Federal Regulations, Chapter 15.

The Contractor shall maintain at the job site all medical items and equipment necessary for administering first aid to the injured and shall make standing arrangements for the immediate removal to a hospital or doctor's care of all persons injured on the job site. In no case shall the Contractor permit any employee to work at the job site before it has made arrangements for the immediate removal of injured persons to a hospital or doctor's care.

The Contractor shall at all times exercise every precaution for the protection of persons, including its employees, and property, and shall guard against creating any unnecessarily hazardous conditions. This protection shall include, but is not limited to, sheeting and shoring, barricades, and warning lights as needed.

The Contractor shall be responsible for all accidents arising out of or connected with its performance under the Contract and Contract Documents and shall indemnify and hold harmless the Owner and the Engineer from all liability, costs, suits, claims or actions brought against it for any injury or alleged injury to any person or property. All loss or damage to the Work arising from fire, floods, storms or other natural causes, or from any detention, obstruction or difficulties which may be encountered in the prosecution of the Work shall be borne by the Contractor.

No blasting of any kind will be permitted on this Project.





### **5.13 Cooperation By Contractor**

The Contractor will be supplied with three (3) copies of the specifications and three (3) sets of approved plans and contract assemblies including special provisions, one (1) set of which the Contractor shall keep available on the Work site at all times.

The Contractor shall give the Work the constant attention necessary to facilitate the progress thereof. He shall cooperate with the Engineer, his inspectors, and all other Contractors of any agency in every way possible.

### **5.14 Cooperation Between Contractors**

The Contractor shall coordinate his work with other Contractors within or adjacent to the Project area. All completed Work shall meet the line and grade of other work in an acceptable manner.

### **5.15 Warranty**

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **5.16 Control Of Material**

The materials used on the Work shall meet all requirements of the Contract. In order to expedite the inspection and testing of materials, the Contractor shall notify the Engineer of his proposed sources prior to delivery. **All materials supplied shall meet KTC requirements or as otherwise specified in these Contract Documents.**

Unless otherwise specified, all materials shall be new, and both workmanship and material shall be of proper quality and sufficient for the purpose contemplated. The Contractor shall furnish, if requested by the Owner or Engineer, satisfactory evidence as to type and quality of materials and workmanship.

All items of equipment and/or material proposed by the Contractor for substitutions must be pre-approved by the Engineer, in writing, and shall be equal or superior to the items specified in the Contract Documents. If substitutions proposed by the Contractor for a specified item requires engineering revisions, the total expense of said revisions shall be paid by the Contractor.

Any items of labor or materials required but not shown as a separate pay item in the Proposal, shall be furnished and installed as incidental to the Contract, except as noted in the plans and specifications.





### **5.17 Storage Of Materials**

The Contractor shall obtain prior written approval from the Owner for any locations proposed for use for the temporary storage of construction materials, tools and/or equipment. All such materials shall be neatly and compactly maintained in a manner as to cause the least inconvenience to adjacent property owners and to traffic. Under no circumstances shall existing drainage courses be blocked or water hydrants, valves, or meter pits covered in storing materials. All materials stored upon public thoroughfares must be provided with warning lights and reflective striping at nighttime and on weekends in a manner to alert traffic of such obstructions.

Private property shall not be used for storage purposes without written permission of the owner or lessee, and if requested by the Engineer, copies of such written permission shall be furnished to him.

Any additional space required must be provided by the Contractor at their expense.

### **5.18 Sanitary Measures**

The Contractor shall construct and maintain sanitary conveniences for use by its employees at the site of the Work. Such conveniences shall be of sufficient number and shall be placed in locations approved by the Engineer. The Contractor shall require all employees and persons connected with the Work to use said conveniences, and any employee or person who violates this rule shall not again be employed at the site of the Work by the Contractor. Such conveniences shall be in compliance with all State and local health department regulations, and the Contractor shall promptly and fully comply with all health department orders and regulations regarding said conveniences.

### **5.19 Public Convenience And Safety**

The Contractor shall at all times so conduct his work as to assure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the Contractor as specified under subsection Maintenance of Traffic.

The Contractor shall provide and maintain safeguards, safety devices and protective equipment and take any other needed actions as may be necessary to protect the public and property in connection with the work. The Contractor shall notify the Chiefs of the Police Department and Fire Department of the temporary blocking of any street.

The presence of barricades, lights or other traffic control devices provided and maintained by any party other than the Contractor, shall not relieve the Contractor of this responsibility.

### **5.20 Protection And Restoration Of Property**

The Contractor shall be responsible for the preservation of all public and private property. The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect or misconduct in his manner or



method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

**Dust nuisance originating from any work shall be controlled by the Contractor at the sole expense of the Contractor.**

When and where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the nonexecution thereof by the Contractor, he shall restore, at his own expense, such property to a condition equal or better to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

When mailboxes, road or street name signs and supports interfere with construction, the Contractor shall remove and erect them in a temporary location during construction in a manner satisfactory to and as directed by the Engineer. After completion of the construction and before final acceptance of the project, the Contractor shall erect the mailboxes, road or street name signs and supports in a permanent location in accordance with the plans unless otherwise directed by the Engineer. This shall be considered a subsidiary obligation of the Contractor under the affected items. The Contractor shall cooperate with the Engineer in protecting and preserving cornerstones and monuments that are within the work area. Monuments, cornerstones and land markers unexpectedly encountered shall be protected, referenced and preserved in the same manner.

### **5.21 Clean Up During Construction**

The Contractor shall at all times maintain the job site and working areas in an orderly condition, reasonably clean and free of accumulations of dirt and debris. If the Contractor fails to maintain the job site and working area in a satisfactory condition, the Owner shall have the right to employ others to do so at the Contractor's expense, commencing 24 hours after the Contractor has been notified that the job site and/or working areas require clean-up.

### **5.22 Final Clean-Up**

As soon as portions of the work are ready for use, they shall be thoroughly cleaned by the Contractor of all dirt and rubbish, and cleared of all materials, forms, falsework, temporary structures and equipment.

The Contractor shall also clean out all sewer drains, inlets, manholes, and other underground lines and structures affected by his work and restore all disturbed areas to their original or better condition.

As soon as portions of the work are ready for use, they shall be thoroughly cleaned by the Contractor of all dirt and rubbish, and cleared of all materials, forms, falsework, temporary structures and equipment.

The Contractor shall also clean out all sewer drains, inlets, manholes, and other underground lines and structures affected by his work and restore all disturbed areas to their original or better condition.



### **5.23 Final Inspection**

When the work has been entirely completed and final cleanup has been performed, the Engineer will inspect the improvement. If items remain which must be completed or remedied by the Contractor, he shall perform the work immediately upon being notified by the Engineer. When such items have been corrected by the Contractor, final inspection will be made. The work must pass final inspection before it will be accepted by the Owner.

### **5.24 Utilities**

Any utility, such as telephone, electricity or water, required by the Contractor for the performance of the Work shall be the responsibility of the Contractor, who shall be responsible for the cost of the same.

### **5.25 Sewage, Surface, and Floor Flows**

The Contractor shall furnish all the necessary equipment, shall take all necessary precautions, and shall assume the entire cost of handling and properly disposing of any sewage, seepage, storm, surface, flood or underground flows which may be encountered at any time during the performance of the Work. The manner of providing for these flows shall meet with the approval of the Engineer, and the entire cost of same shall be included in the unit prices stipulated for the various items of the Work. As applicable, all work must comply with the municipality or County storm water regulations.

### **5.26 Use Of Existing Facilities**

The Owner, upon written notice to and with the approval of the Contractor, shall have the right to connect any sewers, conduit, or pipeline with any existing similar facilities or appurtenances, or to grant permits to make connections therewith at any time before the Work is completed. The Contractor shall not interfere with any such connections and no extra compensation shall be made to the Contractor on account thereof. The performance of the Work shall be planned in such a manner as to allow the use of all existing facilities during the construction period.

### **5.27 Underground Utility Facilities/Cooperation With Utilities**

The Owner will notify all utility companies, all pipeline owners, or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction made as soon as practicable.

Within ten (10) days of the award of the Contract, the Owner shall notify all utilities of the name, address, and phone number of the Contractor. The Contractor shall notify the Registered Underground Utility Protection Service and nonmember owners of the starting date at least two (2) working days prior to starting the Work. The utility shall mark, stake, or otherwise designate the location of the underground facilities within 48 hours of receiving the Contractor's notice of the



starting date. The marking or locating shall be coordinated to stay approximately two (2) days ahead of the planned construction.

The identification of underground facilities, any necessary relocation thereof, and the protection of the same shall be undertaken in conformance with KTC Standards and Specifications for Road and Bridge Construction Section 107.15. At least two (2) working days prior to commencing Work in an area that may involve underground utility facilities, as shown on the plans, the Contractor shall notify the Engineer, the registered utility protection service, and the owners of the underground utility facility who are not members of the registered utility service.

The existing underground utilities are shown as accurately as possible on the plans, based on the information available. The Owner and/or Engineer do not assume any liability for location of underground service lines. Any utility services damaged that were previously marked in the field shall be replaced at the Contractor's expense.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before starting to lay the proposed conduit, in order to assure compatibility with line and grade of the conduit. Payment for all such operations shall be included in the unit price bid for the pertinent conduit item.

The Contractor shall make arrangements with the utility company if adjustments to proposed grade of existing facilities (e.g. manholes, catch basins, valves, boxes, etc.) are to be made prior to the commencement of any paving operations. This shall include utility facilities not shown on the plans but that are located within the pavement area. Work performed on utility facilities shall be in strict accordance with the specifications of the applicable utility company and shall be performed under the direction, supervision and inspection of said company.

At points where the Contractor's operations are adjacent to properties of telephone and power companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owner of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption to underground or overhead utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall immediately alert the occupants of nearby premises as to any emergency that the Contractor may create or discover at or near such premises. The Contractor shall then notify the Engineer and the owner or operator of the utility facility of the disruption and shall cooperate with said utility owner or operator in the restoration of service. If water service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until the local fire authority has approved provisions for continued service.

## **5.28 Maintenance During Construction**

The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate



equipment and forces to the end that the roadway or structures are kept in satisfactory condition at all times.

In the case of a contract for the placing of a pavement course upon other pavement courses or a subgrade previously constructed, the Contractor shall maintain the previous pavement course or subgrade during all construction operations.

### **5.29 Failure To Maintain Roadway Or Structure**

If the Contractor, at any time, fails to comply with the provisions of the above-reference section, the Engineer will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the Engineer may immediately proceed to maintain the Project and the entire cost of this maintenance will be deducted from monies due or to become due to the Contractor on his Contract.

### **5.30 Protection Of Existing Structure**

It shall be the responsibility of the Contractor to perform the Work in such a manner as not to damage or destroy any existing feature which is not marked for replacement or removal. The Contractor shall, at its own expense, protect and maintain any bridges, curbs, gutters, sidewalks, roadways, or any other private or public structures that may be endangered in the prosecution of the Work. The Contractor shall also exercise due care during the Work so as not to destroy any trees, plants, shrubs, or structures not specifically marked for removal or relocation within the area of the Project site. The Contractor hereby agrees to repair and make good any damages caused to any such property by reason of its prosecution of the Work.

In some instances, the Contractor will be required to excavate under and around existing utilities. The Contractor shall exercise extreme care so as not to damage the utility during the Work.

The Contractor shall schedule his operations so that the improved areas have had sufficient time to cure, set and/or harden before the area is opened to traffic or other use. The Contractor shall be responsible for the immediate repair of all improved areas if damage is done by traffic or other use. The Contractor shall also be responsible for the immediate rectification of problems created in areas outside of the improved areas, which are attributable to the failure of the improved area, such as, but not limited to, the tracking of materials into unimproved areas.

The Contractor shall be responsible for the protection of areas outside of the limits of the designated Project site, but which are adjacent to those limits. This will include those areas used by construction traffic for access to and from the Project site. Where the Engineer and/or the Owner determine that the Contractor's operations have been responsible for damage to areas outside of the Project site limits, the Contractor shall be responsible for the repair of the area, subject to the approval of the Engineer. No additional compensation will be due the Contractor for any such repairs.



### **5.31 Construction Videos And Photographs**

Contractor shall document existing site conditions, progress of the work and the completed project through the use of videos and photographs. Videos and photographs shall be taken along the length of the sewer alignment and all areas of egress to the site pre-construction, during construction and post-construction. Pictures shall be taken at all property affected by the Work and at least every 50 feet along the sewer alignment. All existing structures or facilities affected by the Work shall also have videos and photographs taken of their before and after conditions. The OWNER shall be present during the pre-construction and post-construction videotaping and photograph work and shall determine the limits at each location. All photographs shall be in digital format with a time and date stamp. Photographs shall be a minimum of 2.1 mega pixels. All videos shall be provided on DVD.

Before starting construction, video and take photographs along the length of the sewer alignment and all areas of egress to the site as directed by OWNER. Pictures shall be taken at all property affected by the Work and at least every 50 feet along the sewer alignment. All existing structures or facilities affected by the Work shall also have videos and photographs taken of their pre-construction conditions. The purpose of these videos and photographs is to document existing physical conditions at each site and its surrounding property.

- i. Before starting work, take a minimum of two photographs to show existing conditions at and adjacent to each driveway, landscaped area, fence and any other permanent structure that could potentially be affected by construction.
- ii. Provide one copy of the video and pictures to the OWNER prior to construction.
- iii. CONTRACTOR shall audibly record a brief description of each video and the date and time of the recording.

E-mail digital files of each photograph to the OWNER and ENGINEER as soon as they are available. Each digital file shall be labeled with the following information:

- i. Date photograph taken.
- ii. Title of Project.
- iii. Description of view shown in photograph.
- iv. Numbered identification of exposure.

Following substantial completion of the work and after final completion photographs have been taken, burn a CD with copies of all digital photographs taken for the Work. Submit two copies of CD's. Submit two copies of each video as soon as they are available. Each video shall be labeled with the following information:

- i. Date video was taken.
- ii. Title of Project.
- iii. Location of taping.

All work for the above shall be incidental to the Contract.



### **5.32 Monuments And Landmarks**

The Contractor shall not remove, relocate or in any way damage any monuments, survey pins or landmarks without the approval of the Engineer. Any monument, survey pin or landmark so removed without approval of the Engineer may be replaced by the Owner and the expense of the survey and replacement charged to the Contractor.

### **5.33 Base Lines and Benchmarks**

The Contractor shall carefully preserve all base lines and benchmarks which have been set by the Owner or its agent. The Contractor shall be charged with the expense of resetting any base lines or benchmarks caused by the loss or disturbance of such by the Contractor.

### **5.34 Restoration Of Disturbed Areas**

In all cases where the Work requires the restoration of areas with topsoil, seeding and mulching, the Contractor shall not seed and mulch until directed to do so by the Engineer. The Engineer shall not so direct the Contractor until he has assured that the site is properly graded and topsoiled.

Upon completion of the seeding and mulching, the Contractor shall immediately notify the Engineer of the same. Upon receipt of notice from the Engineer that the restoration is complete, the Owner shall notify the property owners of their maintenance duties.

In cases where the Engineer determines the seeding and mulching should not be performed until after the designated completion date for the Work, the Engineer shall notify the Contractor of the same, in writing. Suspension of the seeding and mulching at the direction of the Engineer shall not count against the Contractor as a delay.

### **5.35 Supervision Of The Work**

The Engineer or upon the authorization of the Engineer, the Owner's Public Works Director, shall in all cases, determine the amount, quality acceptability and fitness of the kinds of labor and material, which are to be paid for under the Contract. The Owner or the Owner's agent shall determine all questions related to the Work and the performance thereof and decide every question which may arise relative to the fulfillment of the Contract on the part of the Contractor.

The Engineer will evaluate the materials furnished and the labor to be performed under the Contract and is authorized by the Owner to reject all labor or materials, or any part thereof, that does not comply in kind, quality, quantity, time, place or manner with the Contract or Contract Documents. The approval or acceptance or any part of the Work, or any payment on account thereof, shall not prevent the rejection of said labor or materials at any time thereafter during the term of the Contract, if said labor or materials are found to not be in accordance with the requirements of the Contract or the Contract Documents.





### **5.36 Defective Or Unacceptable Work**

All materials and each part or detail of the Work shall be subject to evaluation by the Engineer. The Engineer shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor, as is required to make a complete and detailed review.

Any work done or materials used without direct observation by an authorized representative may be ordered removed and replaced at the Contractor's expense.

All work, which does not conform to the requirements of the Contract, will be considered unacceptable unless otherwise determined acceptable.

Should defective or unacceptable labor or materials be suspected, and the Engineer so require, the Contractor shall uncover, take down or make openings in the finished work for the purpose of examination at such points as the Engineer designates.

If the Work so exposed or examined is satisfactory, the cost of uncovering, taking down or making openings shall be paid by the Owner to the Contractor as a change in Work; however, should the Work thus exposed or examined be unsatisfactory, the cost of uncovering, taking down or making openings shall be borne by the Contractor.

If the exposed or examined labor or materials are found to be unacceptable or defective by the Engineer, he shall serve on the Contractor written notice of his rejection of the unsatisfactory labor or materials, his instructions for remedying the same, and a time within which the defective material or labor is to be remedied. If the Contractor neglects or refuses to remove and/or replace the defective labor or materials within the time limit given, the Owner may remedy the situation and charge the expense thereof to the Contractor. The expense so charges shall be deducted out of the monies due to the Contractor under the Contract. If the amounts still due the Contractor under the Contract are insufficient to meet the expense, the additional monies shall be paid by the Contractor, and if the Contractor refuses or neglects to pay, the monies shall be paid by his Surety or shall be deducted from its Performance/Contract Bond.

If, in the opinion of the Owner, an emergency arises that jeopardizes the continuity of water service and/or the public health, safety or welfare of the residents of the Owner, the Owner shall give notice of the emergency to the Contractor by telephone or in person. If the Contractor is unable to remedy the situation at the time it exists, the Owner reserves the right to immediately take steps to have the situation remedied. If, in the opinion of the Owner, the emergency was created through the carelessness or recklessness of the Contractor, then the Contractor and its Surety shall be liable to the Owner for all expenses incurred by the Owner in correcting the situation.

### **5.37 Intent of Contract**

The intent of the Contract is to provide for the construction and completion in every detail of the Work described. The Contractor shall perform all items of work covered and stipulated in the proposal and perform altered and extra work, furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with the plans, specifications and terms of the Contract. Should any misunderstanding arise as to the intent or meaning of the plans, specifications, special provisions or proposal, or any discrepancy appear, the decision of the Engineer shall be final and conclusive.





### **5.38 Measurement Of Quantities**

For all contracts, except lump sum contracts, after an item of the Work is completed and before final payment is made, the Engineer will determine the quantities of various items of work performed, as the basis for final settlement. The Contractor, in case of unit price items, will be paid for the actual amount of work performed in accordance with these specifications as provided under the various items.

### **5.39 Plans And Estimated Quantities**

The Plans and Bid Proposal quantities prepared by the Owner are intended to outline the Work to be done by the Contractor. The estimated quantities shall be used in determining the total amount of the bid and for the purpose of determining the lowest and best bid. It is understood and agreed, however, that the Plan is subject to minor changes from time to time during the progress of the Work, that the estimated quantities listed in the Proposal are approximate only, that the Contractor has no claim for damage and is not entitled to extra pay above and beyond the agreed unit prices on account of increasing or decreasing the quantities, and that in measuring the work for payment to the Contractor, the Owner shall consider only the number, length, area and solid contents of the various items of Work incorporated in the improvement in accordance with the Plans or as ordered placed by the Owner.

### **5.40 Prices**

The Owner will pay to the Contractor the prices herein stipulated as full compensation for everything furnished and work completed by the Contractor under the Contract, including all incidental work required but not specifically mentioned, and for any work arising from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work, as herein specified and for well and faithfully completing the work, together with remedying all defects developing during the guarantee period.

### **5.41 Alternation Of Plans Or Character Of Work**

The Owner reserves the right to make, at any time during the progress of the Work, such increases or decreases in quantities and such alterations in details of construction as may be found to be necessary or desirable. Such increases or decreases and alterations shall not invalidate the Contract nor release the Surety, and the Contractor agrees to perform the Work as altered, as if it had been a part of the original Contract.

Unless such alterations and increases or decreases materially change the character of the work to be performed or the cost thereof, the altered work shall be paid for at the same unit prices as other parts of the Work. No claim shall be made by the Contractor for any loss of anticipated quantities and the quantities of work as done. Payments shall be in accordance with Section 109 of the KTC Standard and Specifications for Road and Bridge Construction. If, however, the character of the Work of the unit costs thereof are materially changed, an allowance shall be made on such basis as may have been agreed to in advance of the performance of the Work, or in case no such basis



has been previously agreed upon, then an allowance shall be made, either for or against the Contractor, in such amount as the Owner may determine to be fair and equitable.

Should the Contractor encounter or discover during the progress of Work, subsurface or latent physical conditions at the site differing materially from those indicated in this Contract, or unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract, the Engineer shall be promptly notified in writing of such conditions before they are disturbed. The Engineer will thereupon promptly cause the investigation of said conditions, and if they are found to so materially differ and cause an increase or decrease in the cost of, or the time required for performance of the Contract, an equitable adjustment will be made.

Any adjustment in compensation because of a change or changes resulting from one or more of the conditions described in the previous paragraph will be made in accordance with the provisions of Extra Work. Any adjustments in Contract time because of changes will be made in accordance with the provisions in 108.07 of the Kentucky Standard Specification for Road and Bridge Construction.

#### **5.42 Extra Work**

Items of work with unit prices included in the estimate of the original Contract, in an amount less than \$10,000 may be authorized as Extra Work by the Engineer.

#### **5.43 Modification Of Contractor Or Change Orders**

Items of Work not included in the estimate of the original Contract and additional units of items included in the estimate of the original Contract in an amount in excess of \$10,000, may be authorized as a Modification of the Contract or Change Order. Payment shall be in accordance with Sections 109.04 of the Kentucky Standard Specification for Road and Bridge Construction. The Owner may, when necessary, by ordinance, authorize alterations or modifications in the Specifications and Plans for the Work, or omit from the Work covered by this Contract any portion thereof. Before any such alteration or modification shall be effective, the price to be paid for the Work or the material, or both, under the altered or modified Contract, shall have been agreed upon in writing and signed by the Contractor and by the Contractual Agent or Agents of the Owner. It is expressly agreed that such changes shall not, in any way, violate or annul the Contract, and the Contractor hereby agrees not to claim or bring suit for any damages, whether for loss of profits or otherwise, on account of these changes. Whenever, during the progress of the Work, any change or modification of the Work is agreed upon, such change shall be considered and treated as though originally contracted for, and shall be subject to all provisions of the original Contract.

The Contractor's Sureties will not be notified of changes in the work or cost thereof, except when by reason of any Change Orders, the total Contract price increases by more than twenty (20%) percent of the original price.



#### **5.44 Disputes And Contractor Claims**

In cases where there arises a dispute (whether over payment, claims, or quality of Work) between the Contractor and the Owner, the Contractor shall not cease Work on the Project because of said dispute, unless told to cease work by the Owner. The Contractor shall continue Work on the Project and agrees that such a dispute shall not relieve him from the requirements under "Time of Completion and Damages for Delays".

In all cases, the Contractor shall submit to the Owner any claims for disputed amounts, in writing, within seven (7) calendar days of learning of said dispute. In submitting such claim, the Contractor shall include his actual original calculations and raw cost data, along with his job cost reports and field diaries.

If the Owner makes to the Contractor an offer on a claim which the Contractor refuses, and if the Contractor then gets an amount equal to or less than the Owner's last offer in court, the Contractor shall pay all legal costs, including attorney's fees and expert witness fees, that the Owner incurs from the date of the Owner's last offer until the day the Contractor is awarded judgment.

Any claims or disputes shall be limited by the requirements of "Modification of Contract or Change Order".

#### **5.45 Time Of Completion And Damages For Delays**

The Project construction time shall commence upon the date indicated in the Notice to Proceed, which shall be sent to the Contractor by the Owner. The Contractor shall agree to commence the Work on the date specified in the written Notice to Proceed, weather permitting, and to fully complete the Work by the date stated in the contract, unless such time for completion is extended, in writing, by the Owner. However, neither the Contractor nor any subcontractors shall commence any part of the work under the Contract until it has obtained all insurance required, as listed in the General Conditions, and such insurance has been approved by the Owner.

The Contractor agrees that time is of the essence, and therefore, if the Contractor neglects, fails, or refuses to complete the Work within the allotted time, or fails to secure an extension of time for delays, the Contractor does hereby agree to pay to the Owner, as liquidated damages and not as a penalty, the amount as stated in the Contract for each calendar day beyond the completion date stated in the Notice to Proceed, unless the time for completion has been extended in writing by the Owner. Such damages shall be deducted from any monies due and owing to the Contractor under the Contract. If the amounts still due the Contractor under the Contract are insufficient to meet the expense, the additional monies shall be paid by the Contractor, and if the Contractor refuses or neglects to pay, the monies shall be paid by his Surety or shall be deducted from its Performance/Contract Bond.

If the Contract is revised in any material respect and it is determined that said revision will cause delay in the completion of the work, the Engineer will postpone the completion date by the number of calendar days he determines to be equitable.

If the Contractor finds it impossible for reasons beyond his control to complete the work by the date as specified or as extended in accordance with the provisions of this subsection, he may make a written request to the Engineer for an extension of time setting forth therein the reasons which he believes will justify the granting of his request. Requests for extensions of time shall be filed in writing by the Contractor to the Engineer not later than thirty (30) days following the termination of the delay. The Contractor's plea that insufficient time was specified is not a valid reason for



extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify.

Delays caused by weather or seasonal conditions should be anticipated and will not be considered as the basis for an extension of time. The Engineer will not allow any extension of time for weather or resulting conditions, except for delays caused by earthquakes, tornadoes or other catastrophic forces per Section 108 of the Kentucky Standard Specification for Road and Bridge Construction.

The extended time for completion shall then be in full force and affect the same as though it were the original time for completion.

If the Owner should suspend the Work in whole or in part, the date for completion shall be extended by the number of days that the suspension directly or indirectly delays the completion of the Work.

If the Work is delayed for unforeseeable causes beyond the control and without the fault of negligence of the Contractor, such as severe or unusual climatic conditions, acts of God, acts of the Owner or interference by other contractors, extensions of time may be granted by the Owner, upon the Contractor's written request for an extension. The Contractor shall, within five (5) days from the beginning of such delay, notify the Owner in writing of the causes of the delay and request an extension. In no case shall such an extension of time exceed the time actually lost to the Contractor by reason of such delay or interference.

The Owner reserves the right to suspend the whole or any part of the Work, when in the best interest of the Owner, in its sole discretion. Without any additional compensation to the Contractor for such suspension; however, the Contractor shall be granted an extension of time for completing the Work in the same amount of time that it was delayed by such suspension, unless said suspension was necessitated by the actions or inactions of the Contractor.

#### **5.46 Failure To Complete On Time**

If the Contractor fails to complete the Work within the time or times allowed by the Contract, the Owner, if satisfied that the Contractor is carrying the Work forward with reasonable progress and deems it to be in the best interest of the Public, may allow him to continue in control of the Work. It shall be necessary for the Contractor to make written application to the Owner in order to warrant such continuance. Payments to the Contractor for work performed and materials furnished will be made.

When the work is not completed within the time or times allowed by the Contract, and the Contractor is permitted to remain in control, the Work shall be prosecuted at as many different places, at such times, and with such forces as the Owner may request.

For each calendar day that any work shall remain uncompleted after the Contract completion date or dates, the sum specified in the Contract will be deducted from any money due the Contractor, not as a penalty but as liquidated damages provided, however, that due account shall be taken of any adjustment of the completion date or dates granted under the provision of "Time of Completion and Damages for Delays". In the event one or more interim completion dates are specified without specific separate liquidated damages, the amount set forth in the Schedule in Section 108 of the Kentucky Standard Specification for Road and Bridge Construction will separately apply to each interim date. In the event a period of liquidated damages for an interim completion date overlaps a subsequent completion date, the liquidated damages will be cumulative.



Permitting the Contractor to continue and finish the Work or any part of it after the date or dates fixed for its completion, or after the date or dates to which completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its right under the Contract.

The Owner may waive such portions of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the public.

#### **5.47 Unsatisfactory Progress And Termination Of The Contract**

In case the Contractor or any Subcontractor fails to furnish materials or to execute the Work in accordance with the Plans and Specifications, or if the provisions of the Contract are otherwise violated, then in any such case, upon ten days written notice to the Contractor and his Surety, the Owner shall have the right to declare the Contractor in default on the Contract. Said notice shall contain the reason for the Owner's intention to declare the Contractor in default on the Contract and, unless within ten days after service of said notice the violation shall cease or satisfactory arrangements shall have been made for its correction, the Contractor, upon the expiration of said ten days, shall be in default on the Contract and his right to proceed under the Contract shall be terminated.

In the event the Contract is thus declared to be defaulted, the Owner will immediately notify the Contractor and his Surety of such action and will at once cause the work already done to be measured and computed. The action of the Owner in the declaration of the default of the Contract shall be final and conclusive, and the Contractor shall not be entitled to claim or receive any damages for not being allowed to continue. After the default of the Contract, the Surety shall have the right to take over and complete the Work, provided, however, that the Surety shall notify the Owner in writing of its intent to do so within twenty (20) days after the notice of the default of the Contract. Such completion of the Work by the Surety shall be done in strict accordance with all the provisions of the original Contract. However, if the Surety does not take over the Contract as stated above, then the Owner shall cause the Work to be completed under a second contract. If the cost of the Work done under the second contract exceeds what it would have cost under the original Contract, the increased cost shall be paid from any money due the Contractor under the Contract, and if that is not sufficient, then the increased cost shall be paid by the Contractor and/or his Surety.

The Contractor and/or his Surety shall also pay all cost and expense of reletting the Work and all damages resulting from noncompletion of the Work within the Contract time. If, when the Work is completed, it is found that there is any money due the Contractor, it will be paid to him; but no money shall be paid to the Contractor under the Contract after it has been declared in default, until the Work has been completed and accepted and all claims and suits resulting therefrom shall have been settled.

#### **5.48 Payments**

The Owner shall pay to the Contractor the price stipulated in the Contract, by making progress payments to the Contractor during the performance of the Work, on the basis of the value of work performed.

The Contractor shall submit an invoice to the Engineer of the quantity of work performed for approval. Requests for payment shall not be made more frequently than every thirty (30) days. The



Engineer shall forward the invoice to the Owner for approval, and upon approval of the invoice by the Engineer and the Owner. The Owner shall pay the Contractor within thirty (30) days.

Partial payment may be reduced or withheld entirely if, in the opinion of the Owner, construction is not proceeding according to the Contract, or if for any other violation, or for failure of the Contractor to comply with the orders of the Owner, or pending settlement of claims of liens filed against the Contractor.

The Owner shall make partial payments to the Contractor for work performed and materials delivered to the site at 95% of the value of work.

The Contractor shall submit three (3) signed and notarized original copies of each Application for Payment to the Engineer. One copy shall include waivers of lien and similar attachments if required.

#### **5.49 Waiver Of Mechanic's Lien**

Prior to Final Application for Payment, the Contractor shall submit waivers of mechanic's liens from subcontractors, materialmen, and suppliers for all construction to date.

1. Owner reserves the right to designate which entities involved in the Work must submit waivers.
2. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
3. Waiver Forms: Submit waivers of lien on forms provided.

#### **5.50 Acceptance Of Final Payment**

After the final inspection has been made and the Owner has accepted the Work, the final estimate and Final Statement of Cost will be prepared. If any items were erroneously overestimated in any partial estimate, such errors will be corrected in any subsequent partial estimate or in the final estimate, and the Contractor shall have no right to any such excess and shall not be entitled to any damage on account of such corrections in the final estimate.

The following paperwork is necessary from the Contractor to close-out the Project:

1. Final invoice for payment.
2. Final affidavit listing all subcontractors/suppliers used on the Project and indicating the amount paid in full
3. Final Release of Liens from all subcontractors indicating the amount paid in full.
4. Prevailing Wage Affidavit, if applicable.
5. Guarantee
6. Final Release of Lien.
7. Concrete Test Reports, if applicable.
8. Asphalt tickets stamped with the Inspector's seal, if applicable.
9. Any additional testing reports as required by the Contract.





After the final estimate and Final Statement of Cost have been prepared and after the Contractor has fulfilled all of his obligations under the Contract and all the above paperwork has been accepted, the Owner will pay the entire sum found to be due the Contractor after deducting all previous payments and any liquidated damages, if applicable.

After the final estimate and Final Statement of Cost have been prepared and after the Contractor has fulfilled all of his obligations under the Contract, the Owner will pay the entire sum found to be due the Contractor after deducting all previous payments and any liquidated damages, if applicable.

The date of acceptance of the Work by the Owner shall be the date of approval of the Final Statement of Cost.

If, after physical completion of the work and acceptance of the Owner's final measurements by the Contractor, the Owner finds that the Final Statement of Cost or final estimate or both may be unavoidably delayed, he may allow a payment on one-hundred percent (100%) of the final measurements, less such estimated amount of money as the Owner may deem necessary to withhold to take care of any contingencies which may arise.

Should the Contractor have any claim against the Owner because of a variance with the Owner's final measurement, the Owner may allow payment based on the Owner's measurement pending adjustments of the disputed item or items. Acceptance of payment on such basis shall not stop the Contractor's claim nor prevent its satisfactory adjustment.

Retainage shall be paid to the Contractor within thirty (30) days from the date of the Owner's final acceptance of the Work and the completion of the Contract. Upon the Contractor's acceptance of this final payment, the Owner and the Engineer shall be released from any and all claims and any liability to the Contractor for anything further under or relating to the Contract or the Contract Documents, including any act or omission by the Owner or any of its employees or agents, including the Engineer; however, no payments, final or otherwise, shall operate as a release on the Contractor or its Sureties from any obligations under the Contract or the Contract Documents.

### **5.51 Termination Of The Owner's Liability**

No person, partnership, firm, or company other than the Contractor shall have any interest in the Contract and no claims shall be made or held valid and neither the Owner nor its agents shall be held liable for, nor shall be held to pay any money except as herein provided. The acceptance by the Contractor of the final payment made as aforesaid shall operate as, and shall constitute, a release to the Owner and its agents from any claim or liability to the Contractor for anything done or furnished for, or relating to the Work or for any act or neglect of the Owner or any person related to or connected with the Work.

### **5.52 Termination For Cause**

- A. In the event that any of the provisions of the Contract are violated by the Contractor, or by any of its subcontractors, the Owner may serve written notice upon the Contractor and its surety of its intention to terminate the Contract. Such notice shall list the act or omission causing the breach, upon the service of such notice, the Contractor shall have ten (10) business days to correct the breach or to make arrangements for correction that is satisfactory to the Owner.



- B. If no such correction or arrangements are made within the allotted time, the Owner may, in its sole discretion, terminate the Contract on a date solely determined by the Owner. In the event of such termination, the Owner shall immediately serve notice thereof to the Contractor and its surety. The surety shall then have the right to take over and perform the Contract provided, however, if the surety does not elect to continue performance, the Performance Bond will be forfeited and the Owner shall cause the Contract to be completed.
- C. Upon termination for cause, the payment to the Contractor of compensation earned for Work performed to the date of such termination shall be in full satisfaction of all claims
  - 1. against the owner under this Contract, however the Owner shall have the right to deduct from any amounts due and owing to the Contractor, including retainage, any costs, both direct and incidental, incurred by the Owner in completing the Project. The Contractor and/or surety shall be liable for any excess costs the Owner may so incur, and the Owner shall have the right to pursue any legal remedies necessary to affect the same.

### **5.53 Termination For Convenience**

- A. The Contractor hereby acknowledges that as the Owner is a public entity, due to unforeseen circumstances, funding restraints, or changes in the nature of the Work, it may become necessary for the Owner to terminate the Contract for convenience.
- B. In the event the owner finds it necessary to terminate the Contract for convenience, the Owner shall serve notice upon the Contractor and its surety of its intention to terminate the Contract ten (10) business days prior to the termination date.
- C. Upon termination for convenience, the Owner shall pay to the Contractor all compensation due for Work performed to the date of termination, including all costs for materials that were to be incorporated into the Project that cannot be returned; all restocking fees for materials that were to be incorporated into the Project that can be returned only upon the payment of a restocking fee. The Contractor shall submit to the Owner detailed invoices and proof of restocking fees, if any, within ten (10) business days of his receipt of notice of termination from the Owner. In addition, the Owner will negotiate compensation with the Contractor for actual costs incurred as a result of the termination.

### **5.54 Contractors Right To Terminate Contract**

The Contractor may terminate the Contract, upon ten (10) days written notice to the Owner if any public authority should stop the work for three (3) months, or if the Owner should fail to issue a Certificate of Payment, or if the Owner should fail to pay in accordance with this agreement.

### **5.55 Guarantee Of Work**

The Contractor hereby guarantees all work performed for a period of one (1) year from the date of completion, against all defects resulting from the use of inferior materials or equipment (unless said materials or equipment were provided by the Owner) or inferior workmanship. The Contractor





hereby agrees that during the guarantee period, it shall make all repairs, corrections, replacements or changes that, in the opinion of the Engineer, are necessary due to the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the Contract or Contract Documents. The Contractor shall, promptly upon receipt of written notice from the Owner, remove and replace all unsatisfactory work with suitable materials, equipment or workmanship, without additional expense to the Owner.

If the Contractor fails to proceed with these terms of the guarantee in a timely manner, the Owner shall have the right to have the defects corrected, and the Contractor and its sureties shall be liable to the Owner for all expenses incurred by the corrections.

Any or all special guarantees applicable to any definite parts of the Work, including the materials or equipment, shall also be subject to the terms of this section during the first year of the life of such special guarantees.

Customary manufacturer's guarantees in excess of one year shall be turned over to the Owner. If the terms and conditions as set forth are met to the satisfaction of the Owner and Contractor, the Owner may reduce the Performance Bond to ten percent (10%) of the total amount paid the Contractor in the performance of this Contract as a Guarantee bond.

#### **5.56 Notice**

Any written notice required to be served under the Contract or the Contract Documents shall be served by certified mail, or by personal service at the parties' places of business.

#### **5.57 No Estoppel**

At no time shall the Owner be precluded or estopped by any provisions of the Contract, from demanding and recovering from the Contractor any damages sustained because of the Contractor's failure to comply with the Contract or the Contract Documents. The final inspection of the Work shall not be binding or conclusive upon the owner if it subsequently appears that the Contractor willfully, fraudulently, or through collusion with an agent of the Owner, supplied inferior materials or workmanship, or departed from the terms of the Contract or Contract Documents, notwithstanding the acceptance of the Work and payment for the same by the Owner.

#### **5.58 Assignment**

Neither the Contract or any part thereof, nor any funds to be received there under, by the Contractor shall be assigned, except upon the prior written permission of the Owner, upon any conditions that may be imposed by the Owner, and upon the prior written permission of any sureties who executed the Performance Contract Bond on behalf on the Contractor.



### **5.59 Independent Contractor Status**

At all times during the term of the Contract, the Contractor shall be and remain as an Independent Contractor with respect to all services performed under the Contract, The Contractor agrees that all income reporting requirements to the U.S. government, the State of Kentucky, and any local governments are its responsibility and not that of the Owner. The Contractor shall be responsible for the payment of all taxes including, but not limited to, Federal, state, and local taxes, Social Security taxes, unemployment insurance taxes, and other taxes or license fees required by law, for its officers, agents, and employees. The Contractor agrees that neither it, nor any of its officers, agents, nor employees is entitled to receive workers' compensation, unemployment compensation, vacation leave, sick leave, or any other fringe benefits provided to the employees of the Owner or any other Owner agency, under this Contract. Contractor acknowledges that under this Contract, the Owner is not required to contribute to the Kentucky Public Employees Retirement System on behalf of the Contractor, its officers, agents, or employees, nor is the Contractor eligible to contribute to or receive benefits from said system.

### **5.60 Other Contracts**

The Owner reserves the right to allow other work or to enter into other contracts for work or materials to be constructed or placed in or about the Work to be performed under this Contract, and to order the starting and progress of such other contracts at any time prior to the completion of this Contract. The Contractor hereby agrees to allow the construction or progress of other such work, under such arrangements for the joint occupation for the site of the Work as the Engineer may establish. The Contractor hereby waives any claim for damages or extra compensation by reason of any real or supposed interference with his performance of the Work; however, if in the judgment of the Engineer, the joint occupation of the site has unreasonably impeded the progress of the Contractor's work under the Contract, then the time for completion of the Work may be extended by the Owner.

### **5.61 Patents**

The Contractor shall indemnify and hold harmless the Owner, its officers, employees, and agents from all liabilities, judgments, costs, damages, or claims arising from the infringement of any patent, patent rights or royalty rights by reason of the use of any patented materials, machinery, devices, and equipment furnished or used in the performance of the Work, or by reason of the use of patented designs furnished and incorporated into the Work by the Contractor and accepted by the Owner, excepting any materials or equipment furnished by the Owner. In the event that any claim, suit, or action in law or equity of any kind whatsoever is made or brought against the Owner involving any such patents, then the Owner shall have the right to retain, from the money due and owing to the Contractor, an amount the Owner deems sufficient to protect the Owner against loss until such claim, suit, or action has been settled and evidence of such settlement has been satisfactorily presented to the Owner's Law Director.



## **5.62 Laws, Ordinances And Regulations**

The intent of the Contract and the Contract Documents is to include each and every provision and clause required by law to be inserted herein, and they shall be read and enforced as though there were included herein. The Contractor shall keep itself fully informed of, and shall strictly observe and comply with, all applicable Federal, State, County, and local laws, rules, regulations, and ordinances; building code requirements; permit requirements; licensing requirements; inspection requirements; all laws, rules, and regulations regarding the employment of and payment of all laborers, the legal rights of all laborers employed under the Contract; all orders or decrees that exist or that may be enacted by anybody or tribunal having jurisdiction or authority over any aspect of the Work. The Contractor shall also insure that its subcontractors are also informed of and strictly comply with and observe all applicable laws, rules, regulations, and ordinances.

The Contract shall be required to give all notices and pay all fees for any required permits, licenses, or inspection, unless the Owner assumes the responsibility for giving such notices or paying such fees. The Engineer will discuss any special permits that may be required for the Project at the preconstruction conference.

The Contractor shall indemnify and hold harmless the Owner, the Owner's officers, employees and agents, including the Engineer, against any claim or liability arising from or based upon any violation of any such law, rule, regulations, ordinance, order, decree or requirement, whether by the Contractor itself, its employees or agents, or any of its subcontractors.

Should the Contractor at any time find that any requirement of the Contract of the Contract Documents is at variance with any applicable law, rule, regulation, requirement, order, or decree, it shall promptly notify the Engineer.

## **5.63 Environmental Protection**

The Contractor shall observe and comply with all Federal, State, and local laws and regulations controlling pollution of the environment and shall comply with provisions of Section 107 of the Kentucky Standard Specification for Road and Bridge Construction.

## **5.64 Taxes**

The Contractor will be required to pay, without additional expense to the Owner, all Federal, State, local and other taxes which may be applicable to the Work, excepting any taxes and assessments on the real property comprising the site of the Work.

The Contractor hereby agrees to withhold all City income taxes due or payable under the provisions of the Codified Ordinances of the City for wages, salaries, and commission paid to its employees who will work within the City limits for more than 12 workdays and further agrees that any of its subcontractors shall be required to withhold any such City income taxes due under said Code for services performed under this Contract. The Contractors are advised to get full information from the Tax Office prior to bidding.



## 6. Utility Ownership

Gas	Scott Pfefferman – Duke Energy 617 Todhunter Road Monroe, Ohio 45050
Electric	Matt Coleman – Duke Energy 2010 Dana Ave-EF 324 Cincinnati, Ohio 45207
Water	Kyle Ryan P.O. Box 18640 Erlanger, Kentucky 41018
Telephone	Breck Cowan/Underground Jodi Geiman/Overhead Altafiber 221 E. Fourth St., M.L. 121-900 Cincinnati, Ohio 45201
Cable TV	Chris Gapinski 10920 Kenwood Road Cincinnati, Ohio 45252
Sanitary and Storm Sewer	Zach Atkerson 1045 Eaton Drive Fort Wright, Kentucky



## **7. Specifications For Construction**

In general, unless specifically set forth herein, the work, material, and methods of measurement and payment shall conform to the applicable divisions and paragraphs (as noted on the Bid Proposal or in the plans) of the most current edition of the:

Commonwealth of Kentucky  
Transportation Cabinet  
Department of Highways, Frankfort

Standard Specifications  
for  
Road and Bridge Construction



## 8. Special Provisions

### 8.1 Items 105.07 / 107.15 - Cooperation With Utilities

All portions of Item 105.07 and Item 107.15 of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction shall apply.

At least two (2) working days prior to commencing construction operations in an area which may involve underground utility facilities as shown on the plans, the Contractor shall notify the Engineer, the registered utility protection service, and the owners of each underground utility facility not members of the registered utility protection service.

The existing underground utilities are shown as accurately as possible on the plans, based on information available. The Owner and/or the Engineer do not assume any liability for location of these underground utility service lines. Any utility services damaged that were previously marked in the field shall be replaced at the Contractor's expense.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility with line and grade of the proposed conduit. Payment for all operations described above shall be included in the unit price bid for the pertinent conduit item.

The Contractor shall adjust or arrange with utility company to adjust to proposed grade all existing utility facilities, i.e., manholes, catch basins, valves, boxes, etc., prior to the commencement of paving operations. This shall include utility facilities not shown on the plans, which may be found to be located within the pavement area. Work performed on the utility facilities shall be in strict accordance with the specifications of the applicable utility company and shall be performed under the direction, supervision, and inspection of said company.

### 8.2 Coordination With Utilities

Coordination of work schedules with affected utilities will be required. Upon the contract award, the coordination of all necessary relocations or adjustment of all utility facilities becomes the responsibility of the Contractor.

### 8.3 Item 105.06 – Cooperation Between Contractors

The Contractor shall coordinate his work with other Contractors within or adjacent to the project limits. All improvements completed under this contract shall meet the line and grade of other work in an acceptable manner.

### 8.4 Item 106 – Control Of Material

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of proper quality and sufficient for the purpose contemplated. The Contractor shall furnish, if so required, satisfactory evidence as to type and quality of materials and workmanship.



All items of equipment and/or material proposed by the Contractor for substitutions must be approved by the Engineer in writing and shall be equal or superior to the items specified in the contract documents. If said substitution proposed by the Contractor for a specified item requires engineering revisions, the total expense of said revisions shall be paid by the Contractor.

Any items of labor and materials required but not shown as a separate pay item in the proposal, shall be furnished and installed as incidental to the contract, except as noted in the plans and specifications.

### **8.5 Item 106.08 - Storage Of Materials**

The Contractor shall obtain prior approval in writing from the Owner for the locations to be used for the temporary storage of construction materials, tools, and/or machinery. All such materials, tools, and machinery shall be neatly and compactly piled in such a manner as to cause the least inconvenience to the property owners and to traffic. Under no circumstances shall existing drainage courses be blocked or water hydrants, valves, or meter pits covered. All materials, tools, machinery, etc., stored upon public thoroughfares must be provided with warning lights and reflective sheeting at nighttime and weekends to alert traffic of such obstructions.

### **8.6 Item 108.02 - Preconstruction Conference**

Prior to the commencement of construction activities, the Engineer will arrange a meeting between the Contractor, the representatives of the Owner, and the representatives of each of the utility companies. The time, date, and location of said meeting will be determined after the awarding of the contract, and the parties will be notified by the Engineer.

The agenda for the preconstruction meeting shall include the following items:

1. Announcement of Award
2. Utility Company Requirements
3. Designation of Emergency 24-hour Contractor Contacts
4. Discussion of Critical Plan Items
5. Review of Testing and Inspection Procedures
6. Operations Schedule
7. Listing of Haul Roads
8. Identification of Subcontractors
9. Review of Change Order Process
- 10.. Payment Request Submittal Procedure

The Contractor shall coordinate all work with the Engineer. A detailed schedule of operations shall be furnished by the Contractor to the Engineer at the preconstruction meeting and shall list the order of operations and the time frame for the completion of each item of work. The schedule of operations shall be approved by the Engineer and the Owner in writing prior to the beginning of the



work. Changes to said schedule are to be issued in writing and approved by the Engineer and the Owner before operations are changed or rescheduled. No payment will be made to the Contractor while he is delinquent in the submission of a progress schedule.

The Contractor shall supply to the Engineer at the preconstruction meeting, a list of the local roads to be used for the purpose of hauling equipment and/or material to or from the job site. Only the local roads in the vicinity of the project have to be listed; state and/or federal roads do not have to be included. Where necessary, the list shall include the extent of the roads to be affected and any special restrictions, such as height or weight restrictions, which may be applicable along said roads. Construction shall not commence until the Engineer and/or Owner has reviewed the haul road list and approved the haul roads in writing.

The submission of the list to and the review and approval of the list by the Engineer do not relieve the Contractor of the responsibility for the conforming to and the obeying of all applicable height and weight restrictions on the haul roads and of the responsibility for any damage done to and/or along said haul roads. The Contractor is referred to Item 105.10 concerning load restrictions.

### **8.7 Item 107.04 - Permits, Licenses And Taxes**

The Contractor shall insure that all required notices are given and all permits acquired before the commencement of work. The Engineer will discuss any special permits required for this project at the preconstruction meeting.

### **8.8 Item 107.14 - Contractor's Responsibility For Work**

It shall be the responsibility of the Contractor to perform his work in such a manner as not to damage or destroy any existing feature (i.e., existing inlets, conduits, etc.), which is not marked for replacement or removal. The Contractor shall exercise due care during construction so as not to destroy any trees, plants, shrubs or structures not specifically marked for removal or relocation within the work limits. In some instances, the Contractor will be required to excavate under and around the existing utilities. Extreme care should be used not to damage the utility during this operation. The Contractor shall schedule his operations so that the improved areas have had sufficient time to cure, set and/or harden before the area is opened to traffic or use. The Contractor shall be responsible for the immediate repair of the improved area if any damage is done by traffic. The Contractor shall also be responsible for the immediate rectification of problems created in areas outside of the improved areas which are attributable to the failure of the improved area, i.e., the tracking of materials into unimproved areas.

The Contractor shall be responsible for the protection of areas outside of the designated work limits, but which may be adjacent to those work limits. This will include those areas used by construction traffic for access to and from the work areas. Where the Engineer and/or the Owner determine that the Contractor's operations have been responsible for damage to areas outside of the work limits, the Contractor shall be responsible for the repair of the area subject to the approval of the Engineer. No additional compensation will be due to the Contractor for any such repairs as described above.





## **8.9 Item 112 - Maintaining Traffic**

The Contractor shall maintain local traffic at all times in conformance with Item 112. The Contractor shall adequately mark, through the use of barrels, flashing lights, portable gates and/or other devices approved by the Engineer, the limits of the project area and those areas of the site which are temporarily closed to traffic. All signage shall be as per the Manual of Uniform Traffic Control Devices (MUTCD).

During the course of the normal working day, the Contractor shall insure the safety of the public by providing a sufficient number of flaggers to assist the traffic flow through the construction area. If, at the completion of the normal working day, any trench for pavement construction and/or construction of proposed utility has not been completely backfilled and restored, a temporary cover, such as a metal plate or another approved device, shall be placed over that portion of the trench remaining open.

The Contractor shall notify the residents and businesses at least 48 hours in advance of when their drives will be blocked during construction. In those areas where existing pavement is to be resurfaced or removed and replaced, the Contractor shall conduct his operations so as to maintain driveway traffic through the construction area. If two approved access points serve the same parking area, and traffic flow permits, the Contractor will be permitted to close one access at a time. The Contractor will be permitted to close paved areas to traffic for a minimum period of time, consistent with the requirements of the specifications for the protection of completed asphalt concrete courses. If business property is involved, an alternate access must be provided if blockage exceeds one (1) hour. Repeated blocking must allow at least a 15-minute interval of traffic access every hour. Length of residential driveway closures shall be kept to a minimum.

No lane closure shall be permitted to take place between 7:30 AM – 8:30 AM or 2:30 PM – 3:30 PM while school is in session.

**The Contractor shall note that any interim material used for providing driveway ingress and egress will not be a separate pay item, and the cost of said interim material shall be included in the lump-sum price bid for Item 112.**

**The Contractor must conform to the requirements of the KYTC Encroachment Permit.**

## **8.10 Item 201 Stake Out**

Construction stakeout shall be provided by the Owner. Owner shall provide one-time construction layout including:

- Storm sewer
- Removal (by paint marking with meeting with Engineer)
- Location of Duke vaults

Additional staking shall be by the Contractor and considered incidental to the Contract.

The cost of stakeout coordination by the Contractor (minimum 48 hours notice) shall be incidental to the Contract



### **8.11 Items 202 / 203 Removals**

When a bid item is to include the cost of removal of a classified or unclassified material, it shall be the responsibility of the Contractor to verify in the field the type of material and the thickness of the material to be removed prior to submitting his bid. No additional allowance will be due the Contractor for added expense of removals due to unknown materials or thickness.

### **8.12 Items 202 / 203 - Debris Removal**

The Contractor will be responsible for removal of all construction debris from the site. All debris shall be disposed of in a proper manner and shall be as directed by all applicable local, state, or federal regulations.

### **8.13 Item 202 – Clearing And Grubbing**

Clear grub, remove and dispose of all vegetation, building and foundations not removed by others, and debris within designated limits inside the right-of-way and easement areas. Do not remove objects designated to remain or to be removed according to other provisions of the Contract. Also, protect from injury or defacement all vegetation and objects designated to remain. All planters and plant materials other than grass and trees marked for removal shall be salvaged and set aside in a location conveniently accessed by the property owner. During final restoration it shall be the Contractor's responsibility to replace the planters and plant materials to match the existing locations and dimensions. This item shall also include all labor, equipment and personnel to remove, salvage and reinstall all signs, mailboxes and fences not specifically noted for relocation on the construction plans. Portions of the fence that are damaged during work operations, or are in a condition such that they cannot be reused, shall be replaced with new, like material at no additional cost to the Owner. Whenever work is not taking place, all fence areas that have been removed shall be provided with temporary fencing to close off the opening until such time as the fence can be replaced with permanent materials. All work shall be in accordance with Kentucky Transportation Cabinet Standard Specifications Section 202 and incidental to the contract.

### **8.14 Item 203 - Removal Of Existing Pipe And Catch Basins**

Where proposed conduit and/or catch basin construction requires the removal of existing pipe and/or catch basins, the removal of same shall be included in the respective unit price bid for Item 203. Where existing conduit, headwalls, and/or other facilities are to be removed and no proposed drainage facilities are to be constructed, the cost of the necessary removals shall be included in either the removal item, if specified, or in the pertinent excavation item.



### **8.15 Items 206 / 207 / 302 / 701 - Testing Of Compacted Materials**

Compaction testing of embankment, granular backfill, and/or subgrade shall be done by an independent qualified testing laboratory under a contract with the Contractor. Testing shall be done in the presence of the Engineer at locations specified by the Engineer and shall meet standards as specified in Items 206, 207, 302 and 701. The Contractor shall include the cost of all required tests in the unit price bid for the pertinent item and no separate compensation is to be made for said testing.

### **8.16 Item SPL - Yard Restoration (4" Topsoil, Seed And Mulch)**

The Contractor shall provide all labor, materials, tools, and equipment required to grade, fertilize, seed, and mulch in good, workmanlike manner the areas where shown on the plans or where directed by the Engineer and as specified herein. All yard areas disturbed during construction shall be restored per this section. Cost for this item shall be incidental to the overall contract.

#### **A. Materials**

1. **Topsoil** – Topsoil shall be per ASTM D5268 with a pH range of 5.5 to 7. Topsoil shall not contain more than 40% clay in that portion passing a No.10 sieve, shall contain not less than 5% or more than 20% organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 degrees Fahrenheit, and shall be free of rock and other foreign material greater than 1 inch in any dimension and other extraneous materials harmful to plant growth.
2. **Fertilizer** –
  - a. Fertilizer shall be lawn or turf grade 12-12-12
  - b. Agricultural ground limestone when used shall have a minimum total neutralizing power of 90 and at least 40 percent passing a No. 100 sieve, and at least 95% passing a No. 8 sieve.
3. **Seed** – All areas to be seeded shall be seeded with the following mixture:

By Weight	Name of Grass	Purity	Germination
40%	Fine Lawn Turf-Type Fescue	95%	90%
40%	Creeping Red Fescue (Festuca Rubra)	95%	90%
20%	Annual Ryegrass (Lolium Multiflora)	95%	90%

Weed seed content not over 0.25 percent and free of noxious weeds.
4. **Mulch** – Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats or barley.
5. **Asphalt Emulsion** – ASTM D977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

#### **B. Installation**

1. **Preparation of Seed Bed**



- a. Topsoil - If suitable topsoil is available as part of the excavated material it shall be removed, stored and used to backfill the top 4 inches of the excavation. If sufficient material is not available on site it shall be imported on site at no additional cost to the Owner. All grass, weeds, roots, sticks, stones, and other debris are to be removed and the topsoil carefully brought to the finish grade by hand raking. The topsoil shall be sufficiently compacted, by tracking in the material, to prevent significant settlement. Promptly and thoroughly remove topsoil and other materials dropped on pavement surfaces before being compacted by traffic. Before any fertilizer or seed is placed the topsoil shall be inspected and approved by the Engineer.
2. Fertilizing - Fertilizing shall be uniformly applied to all areas to be seeded at the rate of 1 pound per 100 square. The fertilizer shall be thoroughly disked, harrowed or raked into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, the Contractor shall rework the surface until it is a fine, pulverized, smooth seed bed, varying not more than 1 inch in 10 feet. A second application of fertilizer shall be applied at the same rate once the grass has been established or within 6 weeks of seeding.
3. Seeding - Immediately after the preparation and fertilization of the seed bed the Engineer shall inspect and approve the site prior to seeding. The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 3 to 4 pounds per 1000 square feet. Seed shall be sown dry or hydraulically. After sowing, the area shall be raked, dragged, or otherwise treated to cover the seed to a depth of approximately 1/4 inch.
4. Mulching - Within 24 hours after any given area is seeded, mulching material shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre, when seeding is performed between the dates of March 15 and October 15, and at the approximate rate of 3 tons per acre when seeding is performed between the dates of October 15 and March 15 of the succeeding year. Mulching material shall be removed once a good turf has been established.
  - a. Emulsion - Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 10 to 13 gallons per 1000 square feet of mulch or by methods as approved or may be otherwise required to prevent displacement of material. Mulching which is displaced shall be replaced at once but only after the seeding or other work which preceded the mulching and which work was damaged as a result of displacement of mulching material has been acceptably repaired.
4. Maintenance – Contractor shall water, mow, weed and otherwise maintain all seeded areas as necessary to secure a good turf. Settled areas shall be filled, graded, and re-seeded. Seeded areas shall be free of weeds and other debris. The Contractor shall be responsible for the condition of the seeded areas for a period of 1 year from the date of Final Acceptance. A satisfactory lawn shall consist of a healthy uniform, close stand of grass, free of weeds, rocks and surface irregularities, with coverage exceeding 95% over any 10 square feet, and bare spots not exceeding 2 by 2 inches.



### **8.17 Item 212 / 213 - Erosion Control And Water Pollution Control**

The Contractor shall take extreme care to prevent unnecessary erosion, water pollution and siltation at all points of the project. Temporary seeding and mulching, straw bales, slope drains, etc., shall be used as necessary or as directed by the Engineer. The cost of all temporary erosion control measures shall be incidental to the overall contract.

### **8.18 Full-Depth Pavement Sawing**

All existing pavement to be widened and/or removed shall be sawed full depth at the limits of removal, using a diamond saw blade to provide a uniform edge and prevent damage to pavement that is to remain in place. The cost of the sawing shall be incidental to the pavement removal item.

### **8.19 Item 403 - Sealing Edges**

All edges of the asphalt concrete surface course constructed under this Contract shall be sealed with asphalt cement as directed by the Engineer and meeting the same specifications as used in Item 403, the cost of same to be included in the unit price bid for Item 403, Asphalt Concrete. After completion of the surface course, gutters shall be sealed with asphalt cement as directed by the Engineer. The material shall be applied at a uniform width of approximately 4 inches and at a rate just sufficient to fill surface voids. Sealing edges at building walls, foundations, existing curbs or other visible surfaces shall be done neatly and without more than one-half (1/2) inch of the sealant being visible on the surface. Any extra sealant applied to visible surfaces shall be carefully and thoroughly removed by the Contractor at no additional cost to the Owner.

### **8.20 Item 403 - Brooming And Cleaning**

The existing surface shall be cleaned and prepared in accordance with Item 403.03. The cost for such work is to be included in the unit price bid for Item 403, Asphalt Concrete.

### **8.21 Item 406 - Tack Coat**

A tack coat shall be applied to the area to be surfaced in accordance with Item 406, Tack Coat. The residual asphalt content of the tack coat shall be 0.10 gallons per square yard. SS-1, SS-1h, CSS-1, or CSS-1h materials used shall be diluted 50 percent with potable water. Over-spray on curbs, adjoining pavements, and other roadside facilities shall not be tolerated, and the Contractor shall be responsible for clean up of any areas or facilities receiving over-spray. The cost of tack coat shall be included in the unit price bid for Item 403 Asphalt Concrete.

### **8.22 Item 408 - Asphalt Pavement Milling and Texturing**

The work of this item consists of removing the existing asphalt wearing surface to the depths and limits specified or as directed by the Engineer, the intent of which is to restore adequate curb height



and/or to remove deteriorated portions or irregularities in the existing wearing surface. Removal shall be by the method of cold surface planing, as described in Item 408.

The Contractor shall be responsible for notifying all residents of parking restrictions 48 hours in advance of any and all planing operations. Care shall be exercised during planing operations so as not to damage manhole covers, grates, chambers, valves, valve boxes, etc. Any utility castings damaged by the Contractor's operations shall be replaced at his expense.

After removing the wearing course, the Contractor shall immediately clean and tack coat an area at least four feet (4') in radius around all utility castings within the removal area and place an asphalt concrete wedge, thoroughly compacted in accordance with Item 401, around the castings in the four-foot (4') radius area. As an alternate method, the Contractor may choose at the time the wearing course is removed to leave a four-foot radius wedge of existing surface course around the utility casting to protect traffic but will not be allowed to remove these wedges until the day previous to placing asphalt concrete surfacing on the street. Where manholes or valve chambers within an area where wearing course is removed have previously been adjusted with adjusting rings, the Contractor shall also have the option of removing the adjustment ring.

If the Contractor chooses to remove the adjustment rings, he shall re-install the rings immediately prior to resurfacing the street. No additional compensation will be paid for the placing of asphalt wedges, the removal and re-installation of adjustment rings, or the separate removal of existing wearing course left around the castings. These costs shall be included in the cost of removing the wearing course. All material removed shall be the property of the Contractor.

The Contractor shall note that the maintenance of proper drainage patterns will be of special concern, especially where proposed work is to meet existing pavement. The Contractor may be required to survey areas in question, using an automatic level or other appropriate equipment to assure proper grade and cross-slope. The cost of all operations required to assure and to demonstrate that proper drainage patterns have been maintained shall be included in the unit price bid for the pertinent pavement removal item.

**The Contractor shall place the asphalt overlay course within 48 hours of the completion of the pavement planing operation.**

### **8.23 Testing Of Construction Materials**

Portland Cement Concrete: All Portland Cement concrete work shall be tested by an independent testing laboratory. The independent testing laboratory shall secure a random sample from each 100 yards of concrete delivered to the job site. A minimum of one sample shall be made each day that concrete work is performed. One sample consists of four specimens. Four specimens shall be molded by the testing laboratory and cured from each sample, in accordance with ASTM C 172. Cylinders shall then be tested in accordance with ASTM C39. One (1) specimen shall be tested at 7 days for information, and two (2) specimens shall be tested at 28 days for acceptance. The acceptance test results shall be the average strength of the two specimens tested at 28 days. The fourth cylinder shall be tested at 56 days only if the 28-day test results do not meet specifications.

Sing ASTM C 143, the testing agency shall determine the slump of the concrete for each sample, and also whenever the consistency of the concrete appears to vary. The agency shall also determine the air content of the concrete for each sample, in accordance with either ASTM C 231, ASTM C 173, or ASTM C 138.



The agency shall report all test and inspection results to the Engineer, Contractor, and concrete supplier in writing one working day after the work is performed. All test reports shall include the exact location in the work at which the batch represented by a sample was deposited. Reports of strength tests shall include detailed information on storage and curing of specimens prior to testing.

All concrete work not meeting the specifications as listed in Item 501 and 601 shall be removed immediately and replaced in an acceptable manner with no additional compensation to the Contractor, unless provisions for an extended guarantee are provided herein.

Asphalt Concrete: Item 403 Asphalt Materials shall be plant inspected by an independent testing company; and tickets shall be stamped with the inspector's seal, indicating that material shipped to the job site meets the requirements of the specifications.

Seven (7) days prior to commencement of construction, the Contractor shall submit to the Engineer a list of two (2) or three (3) proposed, accredited testing firms. The Engineer shall then select from the submitted list the name of the firm which is to be responsible for all of the required testing.

The Contractor is responsible for notifying the testing agency 24 hours prior to starting work requiring material testing. If the Contractor fails to provide testing as per any of the above requirements, he will be required to stop work until proper arrangements have been made with the testing agency.

The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the contract documents, nor to approve or accept any portion of the work.

The Contractor shall include the cost of all required tests in the unit price bid for the pertinent item and no separate compensation is to be made for said testing.

#### **8.24 Item 505 - Walks, Curb Ramps, And Steps**

The unit price bid for Item 505 shall include all labor, material, and equipment necessary for the placement of the new concrete walk. The walk shall be four (4) inches in thickness, except in walk areas through the driveway aprons and curb ramps, where the thickness shall be increased to seven (7) inches.

Curb ramp construction shall conform to National ADA Standards. Curb ramp standard dimensions will be adjusted as required by the Engineer in the field to provide adequate access for handicapped persons in the vicinity of poles or other fixed objects behind the curb. Curb ramps will be measured as the number of each complete and shall include the cost of any additional materials, grading, forming and finishing not included in the concrete walk item (separate), which is measured through the curb ramp area.

It is the Contractor's responsibility to protect the new surface until it cures.

Construction of walks / curb ramps with paver banding shall be as per the Construction Draining Details.

#### **8.25 Item 505 - Concrete Driveway Apron**

The unit price bid for Item 505 shall include all labor, material, and equipment necessary for the placement of the new concrete apron.





The Contractor must notify the affected residents or businesses in writing at least 24-hours prior to closing driveways. If the residents and businesses have not been notified 24-hours in advance of the anticipated drive closure, the contractor will be prohibited from making these closures until such time as the proper advance notification is made.

The maximum time period for driveway closure shall be ninety-six (96) hours. The contractor shall place new curbs twenty-four (24) hours after curb removal and aprons and walks across the driveway twenty-four (24) hours after the curb is poured.

The contractor shall keep driveways closed for a forty-eight (48) hour period after concrete placement to permit the curing of concrete curbs, driveway aprons, and sidewalks across driveways.

No concrete removal may take place on a Thursday or Friday unless the contractor will pour concrete on a Saturday.

It is the Contractor's responsibility to protect the new concrete surface until it cures.

### **8.26 Item 601 - Concrete – General**

All concrete for roadway paving, curbs, sidewalks, drive aprons, steps and headwalls shall have a minimum of 5 percent entrained air and a maximum of 8 percent entrained air. For each sample, the average strength of the 7-day and the two 28-day tests shall equal or exceed 4000 psi, and no individual strength test shall fall below 3500 psi.

If the averages of all sets of three consecutive strength test results meet the following strengths, an extended guarantee will be required on all concrete work.

- a) 3500 psi to 3799 psi - 3 year guarantee
- b) 3800 psi to 3999 psi - 2 year guarantee

All concrete shall be per the latest edition of the Kenton County Subdivision Regulations.

### **8.27 Item 701 – Grading At Inlets And Outfalls Of Proposed Conduits**

The cost of the necessary reconstruction and/or regrading of swales or disturbed areas at the inlets and outfalls of all proposed conduits shall be included in the price bid for the pertinent conduit and inlet items.

### **8.28 Existing Pipe**

The location, size, type and depth of all existing pipes are shown as nearly exact as available information will permit. The Engineer will not be responsible for any variations found during construction.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the





existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility of line and grade of the proposed conduit.

Payment for all operation described above shall be included in the unit price bid for the pertinent conduit item.

### **8.29 Item 701 – Review of Drainage Facilities**

Before any work is started on the project and again before final acceptance by the Owner, the Contractor, with the Engineer, shall make an inspection of the existing sewers within the work limits, which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenances shall be determined from field observations. Written records of the inspection and/or photographic documentation shall be kept by the Engineer.

All existing sewers inspected initially by the above-mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer. All existing and/or new conduits, inlets, catch basins, and manholes constructed and/or cleaned as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the Owner. Payment for all operations described above shall be included in the unit prices bid for the pertinent item.

### **8.30 Control Of Work**

**Construction work shall take place between the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday unless otherwise restricted by the Encroachment Permit.**

### **8.31 "Or Approved Equal" Items**

In the preparation of these documents and plans, several proprietary products may have been specified. In all such cases, it is to be understood that the Contractor may offer a substitute for the specified product, as indicated by the words "Or Approved Equal." However, the Contractor must be aware that, before commencement of construction, he must provide information to the Engineer concerning the substituted product, and that the Engineer must approve in writing the offered product as being equal to the specified product before use or incorporation into the work.

Unless otherwise modified by the Engineer, proprietary products are to be installed and/or constructed in strict compliance with the pertinent Manufacturer's specifications.

### **8.32 Payment**

**No adjustments to unit prices shall be due to the Owner or the Contractor for increases or decreases in the Engineer's approximate unit quantities shown in the proposal resulting from changes in the amount of work performed.**

THE OWNER RESERVES THE RIGHT TO AWARD OR DELETE ANY OR ALL COMBINATIONS.



## 9. Supplemental Specifications Section

1. 12 93 10 Site Furnishings
2. 02 41 01 Tree Preservation
3. 32 14 16 Unit Paving
4. 32 91 00 Planting Preparation
5. 32 92 23 Sodding and Seeding
6. 32 93 00 Exterior Plants



**SECTION 12 93 10**  
**SITE FURNISHINGS**

**PART 1-GENERAL**

**1.1 SECTION INCLUDES**

- A. Backed Benches
- B. Planters
- C. Litter Receptacles

**1.2 RELATED REQUIREMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Divisions 1 through 33 Specification Sections, apply to this Section.
- B. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2000.
- C. ASTM A 283/A 283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2000.
- D. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2000.
- E. ASTM A 325M - Standard Specification for High-Strength Bolts for Structural Steel Joints (Metric); 2000.
- F. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 1999.
- G. AWS D1.1 - Structural Welding Code - Steel; American Welding Society; 2002.

**1.3 SUBMITTALS**

- A. See Administrative Requirements section, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product specified, including detailed installation diagrams and recommended installation methods.
- C. Provide shop drawings for all furnishings that require customizations to standard products.
- D. Selection Samples: For each product specified, two sets of chips representing manufacturer's colors/finishes as specified.

**PART 2--PRODUCTS****2.1 MANUFACTURERS AND PRODUCTS**

- A. Basis of Design: Manufacturers listed are the basis of design or approved equal. Other alternatives will be considered on a pre-approved basis only.
- B. Backed Bench
  - a. Manufacturer: Dumor Site Furnishings
  - b. <https://www.Dumor.com>
  - c. Model: 58-Series
  - d. Color: Black
  - e. Size: 6'-0"
  - f. Mounting: Surface-mounted
- C. Planters
  - a. Manufacturer: Dumor Site Furnishings
  - b. <https://www.Dumor.com>
  - c. Model: 122-00SH
  - d. Color: Black
  - e. Size: 24.5" HT. 28" DIA.
  - f. Mounting: Surface-mounted
- D. Litter Receptacles
  - a. Manufacturer: Dumor Site Furnishings
  - b. <https://www.Dumor.com>
  - c. Model: 148-32SH-FTO
  - d. Options: With Shield
  - e. Color: Black Powder Coated Steel
  - f. Size: 36" HT. 28" DIA
  - g. Liner: High-density plastic
  - h. Mounting: Surface-mounted

**2.2 FABRICATION**

- A. Shop-assemble site furnishings for delivery to site in units easily handled and to permit shipment without disassembly.
- B. Ensure that work is smooth and free of edges that could snag clothing or cause injury.

**PART 3--EXECUTION****3.1 EXAMINATION**

- A. Quantity of units are as shown on drawings.
- B. Do not begin installation until required utilities/hook-ups, foundations and/or material surfaces have been properly prepared.

- C. If preparation is the responsibility of another Contractor/Installer, notify Landscape Architect of unsatisfactory preparation before proceeding.

### **3.2 INSTALLATION**

- A. Locate all furnishings as indicated on drawings and notify Landscape Architect and Owner at least one week before mounting in the event that field adjustments are required.
- B. Review all furnishings locations with Landscape Architect prior to final installation/mounting.
- C. Install in accordance with manufacturer's instructions.
- D. Mounting hardware is to be touched up with touch up paint from the manufacturer.
- E. All mounting fasteners to be stainless steel or hot-dip galvanized unless otherwise approved.
- F. Provide paint touch-up kits for all painted metal.

### **3.3 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products after Substantial Completion. Landscape Architect reserves the right to reject any repairs deemed unsuitable.
- C. Provide touch-up paint and materials to Owner after Substantial Completion.

**END OF SECTION**

**SECTION 02 41 01****TREE PRESERVATION****PART 1-GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this section.

**1.2 DEFINITIONS**

- A. DIAMETER shall be defined at breast height (dbh) which is the average tree diameter at 4.5 feet from the ground on the uphill side of the tree.
- B. CALIPER shall be defined as the diameter of the trunk at 6 inches above the soil for trees up to 6 inches in caliper and diameter at 12 inches above the soil for trees up to 12-inch caliper.
- C. ROOT ZONE shall be defined as 1 foot of radius around trunk for every inch of trunk diameter at 4.5 feet above ground level on the uphill side of the tree.
- D. DRIP LINE shall be defined as the outer limits of the tree canopy for each tree projected downward onto the ground as shown in the drawings.
- E. TREE PRESERVATION AREA shall be defined as all areas which contain trees and all existing trees noted to remain and be protected within the limits of construction. Protective fencing shall be erected as shown in the drawings.
- F. DAMAGE shall be defined as any negative physical impact to an existing tree trunk, canopy, and/or roots caused by accidental or negligent construction activities, also including unauthorized encroachment into the tree preservation areas protected by fencing or failure to comply with specifications and drawings whether fencing is present or not, at any time during the construction process, including the finishing steps of landscape installation and fine grading operations.

**1.3 QUALITY ASSURANCE**

- A. A preconstruction meeting shall be held with the General Contractor and all Contractors in attendance so that the Owner's Representative and Landscape Architect may explain tree preservation during the construction process.
- B. No site preparation work, including demolition, staging or any delivery/storage of materials, shall begin in areas where trees are designated to remain and be protected until protection and treatment measures have been agreed upon and completed.

- C. Tree preservation measures along with treatment measures and materials will be reviewed and approved by the Owner's Representative, Certified Arborist, and project Landscape Architect prior to installation. Protection of trees or woody shrubs identified to remain means maintenance of the trees in good health and vitality, as well as protection from physical damage and disease.
- D. Publications listed herein are part of this specification to extent referenced:
  - 1. Tree Care Industry Association (formerly National Arborist Association) Standards.
  - 2. ISA–International Society of Arboriculture
  - 3. American National Standard for Tree Care Operations.
    - a. ANSI Z133.1–1994.
    - b. ANSI A300–1995.
  - 4. American Nurseryman Association Standards.
- E. Certified Arborist Qualifications:
  - 1. Minimum of five years' experience in arboriculture within the Greater Cincinnati/Northern Kentucky region.
  - 2. Three references from public clients for whom similar services have been supplied.
  - 3. Staff that are ISA Certified Arborists.
- F. Trees on site which are to be preserved shall be prepared and treated to increase their potential for survival and improve their health and condition. Contractor shall meet or exceed the most recently published Tree Care Industry Association (formerly National Arborist Association) Standards for all work. All work is to be performed completely as specified unless changes are agreed upon in writing due to unforeseen limiting circumstances.
- G. Equipment and Safety:
  - 1. Equipment shall be modern and well maintained. Any instruments used to cut roots and limbs shall be sharpened well enough to make clean cuts. Contractor shall adhere to all applicable state and federal regulations. Contractor shall be responsible for damage to property resulting from equipment, including fluid leakage or damage resulting from equipment failure. Incidents of this type shall be reported immediately to Owner's Representative.
  - 2. Contractor shall be responsible for damage to structures, installations, fixtures, paving, concrete, plant materials and other items on the site which result from the execution of work prescribed.

#### 1.4 PERFORMANCE STANDARD

- A. Damaged trees, as determined by a Certified Arborist and agreed upon by the Landscape Architect and Owner's Representative, less than 12 inches in diameter shall be replaced with trees of equal caliper or the largest commercially available trees of the same species.
- B. Contractor shall be responsible for all expenses related to the replacement of damaged trees including: locating replacement trees at nurseries, tagging,

review/approval of replacements, purchasing, transporting, installing, warranty for one year, and any other associated expenses.

- C. Contractor is responsible for damage for any trees damaged as a result of Contractor error or failure to follow contract specifications. Contractor may be required to remove tree and stump for trees determined to be destroyed as a result of contractor negligence. Damaged trees greater than 12 inches in diameter shall be compensated for by the contractor at \$500.00 per inch of diameter, i.e. a damaged 18 inches tree = \$9,000.00 due to the Owner.
- D. Diameters of damaged trees, if any, shall be determined by an Arborist for the assessment of damages.
- E. Contractor is responsible for providing a qualified Certified Arborist to conduct work that may be required due to damage to trees during construction. Certified Arborist is to meet the qualifications outlined herein.

## 1.5 SUBMITTALS

- A. List products to be used and companies/personnel, including their qualifications that will be performing the required work.
- B. Certified Arborist qualifications.

## 1.6 SUMMARY

- A. Furnish all labor, materials, supplies, equipment and tools to perform all operations in connection with and reasonably incidental to preserve or repair trees damaged by construction. The work shall include but not be limited to, the following:
  - 1. Erecting and maintaining tree protection fences
  - 2. Root pruning as indicated on drawings.
  - 3. Repair operations.
  - 4. Payments or replacements for damaged trees as identified by Owner's Representative.
- B. Construction activity within the root zone of existing trees to remain and be protected shall be prohibited and can be considered as damage to the tree. This shall include but is not limited to the following activities:
  - 1. Removing tree preservation fencing.
  - 2. Parking or driving equipment, machinery or vehicles.
  - 3. Storing construction materials, equipment, stockpiling, excavation or fill, soil, gravel, etc.
  - 4. Dumping chemicals, wash-out materials from cleaning equipment, concrete or mortar remainder, trash, garbage, or debris.
  - 5. Burning within or in proximity to protected areas.
  - 6. Trenching or grading within the drip lines of protected trees without notifying Owner's Representative in writing 10 days in advance of operation. This includes utilities, lighting, irrigation, drainage, paving, structures, etc.
  - 7. Trenching or grading without root pruning.



8. Any construction activity within the drip line of an existing tree.
- C. Timing: If disturbance is required during the active growing season, additional measures may be needed to protect the tree. These measures may include but are not limited to: mulching/protection of disturbed roots and temporary irrigation of disturbed trees.
- D. Silt shall not be allowed to build up against the Tree Preservation Area silt fences.
- E. Contractor shall work with Owner's Representative to make field adjustments as necessary in order to promote long-term health and viability of the trees.

## **PART 2--PRODUCTS**

### **2.1 MATERIALS**

- A. The use of trade name and supplier's name and address is to indicate a possible source of the product. Products of the same type from other sources shall not be excluded, provided they possess like physical and functional characteristics and are approved by Owner's Representative.
- B. Every effort shall be made to utilize chemicals of an organic or biodegradable nature in order to offer least impact to the natural environment. Contractor is responsible for mixing, applying and disposal of all chemicals in accordance with strict adherence to manufacturers' directions. Protect adjacent structures, vehicles, pedestrians, pavement and plants from exposure to any chemicals.
- C. Tree Protection Fencing: Posts to be steel fence posts spaced 6'-0" on center with standard snow fencing or orange polyethylene construction fencing, exposed height above grade 4'- 0". Signs shall be affixed to the fencing every 100 feet with appropriate language, such as "Tree Protection Zone (TPZ)--No grade change, storage of materials, or equipment is permitted within this TPZ."

## **PART 3--EXECUTION**

### **3.1 TREE IDENTIFICATION**

- A. Individual trees and tree protection areas are as shown on the drawings.
- B. Prior to any site work, the Contractor shall tag and number every existing tree that will remain on site, as identified on the Plans. After the trees are tagged and numbered, the Contractor shall hire a Certified Arborist to evaluate all trees designated to remain and make the Owner and Landscape Architect aware of any potential concerns regarding health, structure, risks and any recommended remedial measures to improve the likelihood of the trees' survival and good health after construction.

### **3.2 COORDINATION**

- A. Before start of work, meet at the work site with all parties involved. Review areas of scheduling and possible conflict with various trades and other site work. Coordinate layout of work and resolve conflicts before proceeding with work. All

tree preservation strategies shall be agreed upon by Owner's Representative and Landscape Architect.

- B. Tree preservation fencing shall go up prior to beginning any and all site work. Once the fencing is in place, it shall not be moved or crossed any time during construction. If a conflict arises during construction between proposed plans and tree preservation fencing, the Owner's Representative and Landscape Architect shall be contacted immediately before any work is done in the conflicted area.
- C. All tree removal, tree pruning, and work affecting existing trees and tree preservation, shall be reviewed with Owner's Representative prior to any work starting in the tree preservation area.

### **3.3 TREE WORK AGENDA**

- A. Contractor shall notify Owner's Representative of any trees which may interfere with project access or work at any time during construction, a minimum of 14 days prior to the start of the proposed work. Any special provisions or adjustments to the tree preservation strategies must be approved by Owner's Representative.

### **3.4 PRE-CONSTRUCTION PRUNING**

- A. Assessment by Contractor is required per area of work to ensure there is adequate clearance to do work under existing trees to remain. Review any clearance issues with Owner's Representative. All required trimming shall be performed by Contractor after review and approval by Owner's Representative.

### **3.5 TREE REMOVAL**

- A. Trees marked on Plans and/or designated in the field by Owner's Representative shall be removed from site as noted in the drawings and specifications.
- B. Trees noted for removal shall be removed without damage to adjacent trees to be protected, existing structures, utilities, etc.
- C. All canopy branches and tops of trees shall be hauled off site and properly disposed of.
- D. Stumps should be ground or removed from site as directed by the Owner's Representative and Certified Arborist.

### **3.6 GENERAL**

- A. Review of Tree Preservation Plans and Limits of Clearing:
  - 1. The Contractor shall be required to hold a meeting in the field with the Subcontractors, the Owner's Representative, the Landscape Architect, and the Certified Arborist to review the location of trees to be preserved and the requirements of tree preservation coordination and damages. Concerns relating to tree preservation shall be brought to the Certified Arborist's attention at that

time.

- B. Any work required by plans which is in a Tree Preservation Area shall be performed by hand or method(s) otherwise approved by Landscape Architect. All work will be performed in a manner to prevent compaction, siltation, and disturbance of the root mat of all associated trees and understory trees.
- C. In areas where tree roots are to be exposed to damage by demolition or construction activity, the exposed roots shall be kept moist at all times. Exposed roots shall be covered with a layer of mulch or wood chips.
- D. Contractor shall be responsible for ensuring that all subcontractors are aware of, and adhere to, tree preservation requirements.

### **3.2 DAMAGES AND PENALTIES**

- A. All trees marked on Plans and/or designated in the field within the fence lines shall be preserved by the Contractor. Trees marked for preservation within sensitive tree areas indicated on plan may be assessed damages. Compensation for damage of trees due to Contractor negligence and/or accidents shall be assessed by Owner's Representative. Penalties will be in the form of a fine levied against the Contractor for each specific violation.
- B. Contractor is responsible for damage compensation for any trees damaged as a result of contractor error or failure to follow contract specifications. Contractor may be required to remove tree and stump for trees determined to be destroyed as a result of contractor negligence. Damaged trees greater than 12 inches in diameter shall be compensated for by the contractor at \$500.00 per inch of diameter, i.e. a damaged 18 inches tree = \$9,000.00 due to the Owner.

### **3.3 SITE MONITORING**

- A. The Certified Arborist shall conduct periodic site visits to ensure compliance with tree preservation requirements. Prompt response shall be made to requests by Certified Arborist, which affects the survival of trees to be preserved.
- B. The Owner's Representative may conduct periodic site visits to ensure compliance with tree preservation requirements. Prompt response shall be made to requests by Owner's Representative, which affects the survival of trees to be preserved.

### **3.4 SITE MAINTENANCE**

- A. Contractor shall keep all traveled areas watered regularly or apply other approved dust control methods to prevent excessive dust accumulation on foliage of trees to be preserved. Contractor shall be responsible for all costs associated with the removal of excessive dust from the foliage of trees.

**3.5 TREE TRIMMING**

- A. Contractor shall assess area of work to ensure there is adequate clearance to do work under existing trees to remain. Review any clearance issues with the Owner's Representative. All required trimming shall be performed by Contractor after review and approval by Owner's Representative.
- B. Trimming for adequate clearance to facilitate equipment use and construction activities will be performed prior to the work commencing.
- C. Trimming for worker and public safety and for the health and vigor of preserved trees, as directed by the Certified Arborist, is also required prior to construction work commencing.

**3.6 ROOT PRUNING**

- A. Where excavation or construction within the drip line of a tree is necessary or as noted on the drawings, root pruning may be required. A root cut shall be made as described below.
  - 1. Blade shall be sharpened prior to use.
  - 2. Root cuts shall be marked in the field by Contractor and reviewed by Owner's Representative and Landscape Architect prior to cutting.
    - 1. The arborist shall also make any recommendations related to preserving any critical structural roots (e.g., this is the closest point to this particular tree that the soil can be disturbed.) during the root pruning process.
    - 2. Once reviewed by Owner's Representative and Landscape Architect, Contractor shall follow his/her recommendations to cut along the approved marks prior to any excavation.
    - 3. Contractor shall prune all roots as directed with circular saws of varying types and/or a rotary type stump grinder to a depth of 18" or to the maximum depth of the required grading cut, whichever is less.
    - 4. Root pruning shall be coordinated with the tree protection fencing. In some cases that fence line is on the root cut, provisions for root pruning need to be accommodated before the fence is erected.
    - 5. During the excavation process, if roots greater than 2 inches in diameter that have not been root pruned are encountered, they shall be reviewed by the Certified Arborist to determine structural stability of the tree. Contractor shall follow instructions from the Certified Arborist for cutting (e.g., cutting with a saw or sharp axe). Roots shall not be ripped with earth moving equipment.

**3.7 TREE PROTECTION FENCING**

- A. Tree protection fencing shall be installed in the locations indicated on the drawings.
- B. Install approved protective fencing around each tree designated to remain and be protected. Maintain fencing throughout duration of project. Contractor accepts full responsibility for liabilities associated with protective fencing that is not appropriately maintained. Temporary removal of fencing shall require approval of

Owner's Representative and Landscape Architect.

- C. Tree protection fencing shall be as specified and include approved signage as described in section 2.1 C.
- D. No access to fenced areas shall be permitted by anyone other than the Certified Arborist without prior approval by the Owner's Representative
- E. Contractor shall provide maintenance, repair, and removal of fence during duration of this contract.
- F. Tree protection fencing shall be in-place and in good condition upon the completion of the construction process.
- G. At Substantial Completion and only after directed by the Owner's Representative, Contractor shall remove tree protection fencing and all such materials.

### **3.8 MULCHING**

- A. Selected trees in high impact areas, if identified on the plans, adjacent to construction shall be mulched with a 2-inch depth of shredded hardwood bark mulch.

### **3.9 OTHER REMEDIAL ACTIVITIES**

- A. Contractor shall provide other Arboricultural services as needed to respond to damage by construction activities. These services may include any of the above, as well as fence repair, vertical mulching, etc. Contractor shall respond to calls for remedial work within 48 hours of notification.
- B. As recommended by the Certified Arborist, vertical mulching techniques shall be used to reduce compaction where it may be causing trees stress. Holes shall be augured using a 2-3-inch mechanical auger to a depth of 12-18 inches. Holes shall be evenly distributed throughout the affected root zone in an 18- to 24-inch grid pattern and backfilled with humus. Care shall be given to avoid damaging large roots when withdrawing.

### **3.10 CLEANUP**

- A. Remove from site all excess materials, soil, debris, and equipment directly related to tree preservation activities.

**END OF SECTION 02 41 00**

**SECTION 32 14 16****UNIT PAVING****PART 1 – GENERAL****1.1 SECTION INCLUDES**

- A. Brick Pavers in bituminous setting bed.
- B. ADA truncated dome pavers.

**1.2 RELATED REQUIREMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

**1.3 SUBMITTALS**

- A. Product Data: For the following:
  - a. Unit pavers
  - b. Bituminous setting materials
  - c. Polymeric sand joint material
  - d. Color chart for polymeric sand available colors
- B. Samples for Verification: Full-size units of each type of unit paver indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.
- C. Qualification Data: For firms and person specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

**1.4 QUALITY ASSURANCE**

- A. Installer Qualifications: An experienced installer who has completed unit paver installations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of unit paver, joint material, and setting material from one source with resources to provide materials and products of consistent quality in appearance and physical properties.
- C. Mockups: Before installing unit pavers, build mockups for each form and pattern of unit pavers required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work, including same base construction, special features for expansion joints, and contiguous Work as indicated:
  - a. Build mockups in the location and of the size indicated, or if not indicated, as directed by Landscape Architect. Mock-ups should be a minimum of 4’x4’.
  - b. Notify Landscape Architect seven (7) days in advance of dates and times when mockups will be constructed.
  - c. Demonstrate the proposed range of aesthetic effects and workmanship.
  - d. Obtain Landscape Architect and Owner’s approval of mockups before starting unit paver installation.
  - e. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

- f. Demolish and remove mockups when directed.
  - g. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- B. Do not change source or brands of brick, mortar, or grout material during the course of the Work.

### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver mortar, grout and additive materials in manufacturer's unopened and undamaged containers with labels intact and legible. Store off the ground and protect from weather damage and deterioration.
- B. Protect aggregate during storage and construction against soiling or contamination from earth and other materials.
  - a. Store loose granular materials in a well-drained area on a solid surface to prevent mixing with foreign materials.
- C. Protect unit pavers during shipping, storage and construction against damage, chipping, and soiling or contamination from earth and other materials.
  - 1) Cover pavers with plastic or use other packaging materials that will prevent rust marks from steel strapping.
- D. Store asphalt cement and other bituminous materials in tightly closed containers.

### 1.6 PROJECT CONDITIONS

- A. Establish and maintain required levels and grade elevations. Review installation procedures and coordinate paving work with other work affected by the unit paving work.
- B. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- C. Weather Limitations for Bituminous Setting-Bed: Comply with the following requirements:
  - 1) Apply asphalt adhesive when ambient temperature is above 50 deg. F and when temperature has not been below 35 deg. F for 12 hours immediately before application. Do not apply when base is wet or contains excess moisture.
  - 2) Install bituminous setting-bed only when atmospheric temperature is above 40 deg. F and when base is dry.
- D. Protect partially completed brick paving against weather damage when Work is not in progress.
- E. Provide temporary barricades and warning lights as required for protection of project work and public safety.
- F. Protect adjacent work from damage, soiling and staining during paving operations.

## **PART 2 – PRODUCTS**

### 2.1 SIZES, COLORS, TEXTURES

- A. Subject to compliance with requirements, provide the following products for areas as detailed on Hardscape Materials Plans:
  - a. Clay Brick Paver
    - a. Basis of Design Manufacturer:  
Pine Hall Brick



2701 Shorefair Dr NW  
Winston Salem, NC, 27105  
800-344-8689  
<https://pinehallbrick.com/>

- b. Colors: Full Range English Edge and Rumbled Cocoa
  - c. Size: 4"x8" Clay Paver
  - d. See drawings for locations of each paver color
- b. Tumbled Concrete Pavers
    - a. Basis of Design:
      - Hanover Pavers
      - 110 Bender Rd.
      - Hanover, PA, 14331
      - 717-637-0500
      - <https://hanoverpavers.com>
    - b. Model: Prest Brick, tumbled
    - c. Color: Gettysburg Grey
    - d. Size: 8"x8"
  - c. ADA Truncated Dome Pavers
    - a. Basis of Design Manufacturer:
      - Whitacre Greer
      - 1400 S. Mahoning Ave.
      - Alliance, OH 44601
      - 330-823-1610
      - [www.wgpavers.com](http://www.wgpavers.com)
    - b. Color/Style: Shade 34, Clay
    - c. Size: 4"x8"
- B. Initial order to include 10% addition for attic stock.
  - C. Contractor to coordinate attic stock storage locations with representatives from the City of Fort Thomas.
  - D. For radii, pavers to be field cut

## **2.2 BITUMINOUS SETTING-BED MATERIALS**

- A. Primer for Base: ASTM D 2028, cutback asphalt, grade as recommended by unit paver manufacturer.
- B. Fine Aggregate for Setting Bed: ASTM D 1073, No. 2 or No. 3.
- C. Asphalt Cement: ASTM D 3381, Viscosity Grade AC-10 or AC-20.
- D. Neoprene-Modified Asphalt Adhesive: Paving manufacturer's standard adhesive consisting of oxidized asphalt combined with 2 percent neoprene and 10 percent long-fibered mineral fibers containing no asbestos.
- E. Sand for Joints: Polymeric blend. Gator by Alliance or approved equal. Color to be reviewed prior to ordering and installing.

## **2.3 BITUMINOUS SETTING-BED MIX**

- A. Mix bituminous setting-bed materials at an asphalt plant in approximate proportion, by weight, or 7 percent asphalt cement to 93 percent fine aggregate, unless otherwise indicated. Heat mixture to 300 deg. F.

## 2.4 PAVER EDGE RESTRAINT

- A. Install where indicated per detail. Provide aluminum edge restraint by Permaloc or approved equal. Provide product data to Landscape Architect and Owner for review.

## 2.5 JOINT MATERIAL

- A. Sand for Joints: Gator XP Sand Bond, Polymeric Sand or approved equal.
- B. Color: Provide available color samples from manufacturer for color selection by Landscape Architect and Owner. Color to be coordinated with paver sample.

## 2.6 PAVER SEALER

- A. Per paver manufacturer recommendation.

## PART 3 – EXECUTION

### 3.1 EXAMINATION

- A. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.
- B. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discoloration, and other defects that might be visible or cause staining in finished work.
- B. Mix pavers from several pallets or cubes, as they are placed, to produce a uniform blend of colors and textures.
- C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable. Maintain half paver minimum.
- D. Joint Pattern: As indicated.
- E. Tolerances: Do not exceed 1/32 - inch unit-to-unit offset from flush (lippage) nor 1/8 - inch in 10 feet from level, or indicated slope, for finished surface of paving.

### 3.3 BITUMINOUS SETTING-BED APPLICATIONS

- A. Apply primer to concrete slab or binder course immediately before placing setting bed.
- B. Prepare for setting-bed placement by locating ¾-inch deep control bars approximately 11 feet apart and parallel to one another, to serve as guides for striking board. Adjust bars to subgrades required for accurate setting of paving units to finished grades indicated.

- C. Place bituminous setting-bed where indicated, in panels, by spreading bituminous material between control bars. Strike setting bed smooth, firm, even, and not less than  $\frac{3}{4}$  inch thick. Add fresh bituminous material to low, porous spots after each pass of striking board. After each panel is completed, advance first control bar to next position in readiness for striking adjacent panels. Carefully fill depressions that remain after removing depth-control bars.
- D. Roll setting bed with power roller to a nominal depth of  $\frac{3}{4}$  inch while still hot. Adjust thickness as necessary to allow accurate setting of unit pavers to finished grades indicated.
- E. Apply neoprene-modified asphalt adhesive to cold setting bed by squeegeeing or troweling. If troweled on, use trowel with serrations not exceeding  $\frac{1}{16}$  inch. Proceed with setting of paving units only after adhesive is dry to the touch.
- F. Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.
- G. Joint Treatment: Place unit pavers with hand-tight joints. Fill joints with a polymeric sand/cement mix by sweeping over paved surface until joints are filled.

### **3.4 REPAIR, CLEANING AND PROTECTION**

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Cleaning: Remove excess sand/cement mix from exposed paver surfaces; wash and scrub clean.

**END OF SECTION 32 14 16**

**SECTION 32 91 00****PLANTING PREPARATION****PART 1—GENERAL****1.1 SUMMARY**

- A. Work Included: Furnishing, preparation and placing of soil associated with disturbed or new vegetated areas.
- B. Furnish all labor, materials, facilities, transportation, testing and services to complete all construction and installation of all soil types and related Work as shown on the Drawings and specified herein.

**1.2 RELATED SECTIONS AND DIVISIONS**

- A. Applicable provisions of Division 1 shall govern Work in this section.
- B. Section 31 00 00 – Earthwork.
- C. Section 31 23 33 – Trenching and Backfilling.
- D. Section 32 92 23 – Sodding and Seeding.
- E. Section 32 93 00 - Exterior Plants.
- F. Submittals are included in Section 01 33 00.

**1.3 REFERENCES**

- A. The publications listed below form a part of this Specifications to the extent referenced. The publications are referred to in the text by the basic designation only.
  - a. ASTM D4427-92 – Standard Classification of Peat Samples by Laboratory Testing
  - b. ASTM C136 – Sieve Analysis of Fine & Coarse Aggregates
  - c. ASTM D3665 – Random Sampling of Construction Materials
  - d. ASTM D2487-00 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
  - e. ASTM D854-02 – Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
  - f. ASTM D2974-00 – Standard Test Methods for Moisture, Ash and Organic Matter of Peat and Other Organic Soils
  - g. ASTM F1632-02 – Standard Test Method for Particle Size Analysis and Sand Shape Grading of Golf Course Putting Greens and Sports Field Rootzone Mixes
  - h. ASTM F1647-02 – Standard Test Methods for Organic Matter Content of Putting Greens and Sports Field Root Zone Mixes (Method A & B)

## B. USDA Soil Texture Classification

<b>Soil Particle</b>	<b>Size Range</b>
Sand	0.075mm to < 2.0mm
Silt	0.075 mm to 0.002 mm
Clay	< 0.002mm

## C. Compost Maturity Index, California Compost Quality Council: June 2001

**1.4 DEFINITIONS**

- A. When used within this specification, the following definitions shall apply:
- Testing Agency:** An independent laboratory, with the experience and capability to conduct the testing indicated and that specializes in USDA agricultural soil testing, planting soil mixes, and the types of tests to be performed.
  - Finish Grade:** Elevation of finished surface of a planting mix.
  - Subgrade:** Surface or elevation of subsoil remaining after completing excavation or backfill of soils or other materials immediately beneath the planting mix.
  - Compost:** An organic material that has been aerobically composted and stabilized from feedstocks such as green waste (yard debris) or other suitable organic materials.
  - Hardscape:** All structural and fixed items such as concrete, cut stone, paving materials, lighting fixtures, benches and other fabricated items.
  - Debris:** Elements including, but not limited to, concrete, concrete masonry, wood, excavated rock and rock fragments, rubble, overburden soils, abandoned utility structures, trash, refuse, and litter.

**1.5 SUBMITTALS**

- A. Conform to requirements of applicable Division One and Division Two Specifications, General Conditions and Special Provisions.
- B. Bidder Qualifications: Contractor shall be actively and directly engaged in constructing natural grass and establishing planting beds for a period of five (5) or more years. Provide proof of three (3) such installations that have been in use for three (3) or more years. See 1.6A for Contractor qualification requirements and submit documentation to support those qualifications.
- Any Contractor not able to meet the above requirement shall submit a statement of considerations that may qualify them as a qualified bidder. Items include, but are not limited to:
    - Description of similar type construction experience with names and phone numbers of client contact, date of installation, etc.
    - Resumes of personnel to be used on project.
    - Listing of type of equipment to be used on construction.
  - Projected Schedule:** Contractor shall submit a proposed schedule for the project. Planting windows should be taken into account for project schedule. See Section 32 93 00 Exterior Plants and Section 32 92 23 Sodding and Seeding for specified sections.
  - The Landscape Architect shall review this information for acceptance or rejection of the proposed Contractor.

- C. Pre-Construction Soils Analysis: Prior to construction the Contractor shall submit the following to the Owner and Landscape Architect prior to ordering:
- a. Contractor shall furnish soil analysis by a qualified soil-testing laboratory stating
    - i. Soil composition
    - ii. percentages of organic matter;
    - iii. gradation of sand, silt, and clay content;
    - iv. cation exchange capacity;
    - v. deleterious material;
    - vi. pH
    - vii. mineral and plant-nutrient content of topsoil.,
    - viii. additional test criteria listed in Section 2 for all soil types.
  - b. A minimum of two (2) samples from each different soil area and type and from each on-site stockpile source and imported soil source is required. The laboratory analysis criteria for the accepted submittals will become the baseline for the acceptance or rejection of materials submitted during the quality control phase of the project during Construction.
  - c. Report suitability of soils for plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory soil for each planting type (turf, perennials, natives, woody plant material, etc.).
  - d. Submit samples a minimum of eight (8) weeks prior to the anticipated date of the start of soil installation.
  - e. Location of source(s) of the material and past use of each of the source(s) shall be provided with the submittal for review.
- D. Testing During Construction: If there appears to be any change in soil material from point of supply and/or pre-construction soil analysis to on-site installation, the Owner and Landscape Architect reserve the right to require an in-situ soil test of the imported soil at the cost of the Contractor. If this shall be enforced, the following protocol shall be followed: Contractor shall submit a one-gallon sample of each different soil type in situ at the proper location and depth as indicated in the Drawings to the physical testing laboratory. These samples will then be compared with the approved material from the Pre-Construction baseline testing.
- E. Approved Testing Agents: The following firm is an acceptable testing agency for the various components. Other laboratories will need approval for material testing prior to testing.
- a. Brookside Labs Inc.
  - b. 200 White Mountain Dr
  - c. New Bremen, Ohio 45869
  - d. 419-977-2766
  - e. [www.blinc.com](http://www.blinc.com)
- F. Compost Supplier: Com-Til Compost Facility, 7000 Jackson Pike, Lockbourne, OH 43137
- G. All soil analysis testing shall be performed on the most current, up-to-date samples of soils being prepared for use on the current project and within six (6) months of installation.

- a. Test reports must include: date issued, project title and names of Contractor and supplier, location of material source and testing laboratory name, address and telephone number with name(s) as applicable of laboratory contact.
  - b. Out-of-date or previous testing results from out-of-date stockpiles or previous supplier sources are not acceptable.
- H. Payment for all testing is the responsibility of the Contractor. Any test which must be repeated on materials that have failed to meet Specifications or are as a result of shortages will be borne by the Contractor. The Contractor shall submit copies of all submittal forms and testing results from the testing laboratory to the Landscape Architect and Owner.
- I. Soil analysis requirement applies to all soil types within this project, including import soils and onsite soils.
- J. Submit product data on all pre-manufactured soil mixes and product literature showing certified chemical analysis of all soil amendments.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: The installer shall be a firm having at least five (5) years of experience of a scope similar to that required for the work, including the preparation, mixing and installation of soil mixes to support planting.
- a. The bidders list for Work under this section shall be approved by the Landscape Architect.
  - b. Installer Field Supervision: When any Topsoil, Planting Soil, or Bioretention Soil Work is in progress, installer shall maintain, on-site, an experienced full-time supervisor who can communicate in English with the Landscape Architect.
  - c. Installer's field supervisor shall have a minimum of five (5) years' experience as a field supervisor installing soil, shall be trained and proficient in the use of field surveying equipment to establish grades and can communicate in English with the Landscape Architect.
  - d. The installer's crew shall be experienced in the installation of planting soil and plantings and interpretation of planting plans and soil installation plans.
  - e. Submit references of past projects and employee training certifications that support that the Contractors meet all of the above installer qualifications and applicable licensures.
- B. Soil testing laboratory qualifications: An independent laboratory, with the experience and capability to conduct the testing indicated and that specializes in USDA agricultural soil testing, planting soil mixes, and the types of tests to be performed.
- C. All on-site, delivered, and installed soils shall conform to the approved submittals sample color, texture, and approved test analysis.
- a. If soil conditions appear to change during installation, the Owner or Landscape Architect may request samples of the delivered or installed soil be tested for analysis to confirm the soil conforms to the approved material. This would be in addition to the required in-situ soil tests.
  - b. All testing shall be performed by the same soil lab that performed the original soil testing.

- c. Any soil that fails to meet the above criteria, if requested by the Owner or Landscape Architect, shall be removed and new soil installed.
- D. Soil compaction testing: Following installation or modification of soils, the acceptable compaction level shall be within the range of 75-85% by standard proctor method.

## 1.7 SITE CONDITIONS

- A. It is the responsibility of the Contractor to be aware of all surface and subsurface conditions, and to notify the Landscape Architect, in writing, of any circumstances that would negatively impact the health of plantings. Do not proceed with Work until unsatisfactory conditions have been corrected.
  - a. Should subsurface drainage or soil conditions be encountered which would be detrimental to growth or survival of plant material, the Contractor shall notify the Landscape Architect in writing, stating the conditions and submit a proposal covering cost of corrections. If the Contractor fails to notify the Landscape Architect of such conditions, they shall remain responsible for plant material under the warranty clause of the Specifications.
- B. Planting areas construction operations shall not be conducted under the following conditions:
  - a. Freezing weather
  - b. High winds
  - c. Excessively wet conditions

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. General:
  - a. Handle and store all products of this section in such a manner as to protect them from damage at all times.
  - b. Storage of products on-site shall be coordinated by the Contractor in an orderly manner so as not to unnecessarily impede the Work or reasonable use of the project site.
- B. Fertilizers:
  - a. Deliver in original, unopened containers with original labels intact and legible which state the guaranteed chemical analysis.
- C. Bulk Material:
  - a. Coordinate delivery and storage of bulk material with Landscape Architect.
  - b. Confine materials to neat piles in areas acceptable to Landscape Architect.

## 1.9 GUARANTEE

- A. All Work executed and all materials provided under or used under this section shall be guaranteed to be free of defects and poor workmanship for a period of one (1) year after final acceptance.
- B. Repair all defective materials and Work as acceptable to the Landscape Architect during guaranty period.



**PART 2-PRODUCTS**

**2.1 MATERIALS**

A. Topsoil: Existing soil can be reused for all turf areas if it meets the following criteria. The following performance criteria is to be used for imported topsoil and topsoil as part of specified planting soil mix:

- a. A loamy, friable mineral soil essentially free from heavy or stiff clay lumps, stones, cinders, concrete, brick, roots, sticks brush, litter, plastics, metals, refuse or other deleterious materials in accordance with ASTM D 5286-92. The soil shall be free of herbicides, petroleum-based materials, or other substances of a hazardous or toxic nature which may inhibit plant growth. The soil shall be free of noxious weeds, seeds or vegetative parts of weedy plants that cannot be selectively controlled in the planting. Location of source(s) of the material and past use of each of the source(s) shall be provided with the submittal for review.
- b. The soil shall be taken from the A horizon of a well-drained site and have a USDA soil texture classification of clay loam to loam within the allowable limits in the chart below. The organic content and particle size distribution shall be the result of natural soil formation. The topsoil shall have the following particle size distribution:

<b>USDA Particle Name</b>	<b>Size (MM)</b>	<b>Allowable limit</b>
Gravel	2.00 - 4.75	less than 5%
Sand	0.05 - 2.00	25 - 45 %
Silt	0.002 - 0.05	25 - 40 %
Clay	minus 0.002	15 - 30 %

- i. The topsoil shall meet the following Specifications. Perform the following tests and submit test reports showing the following criteria are met:
  - 1. The USDA soil texture as defined above.
  - 2. pH range: 5.5 – 7.8
  - 3. Organic Matter (OM): 3 - 6%
  - 4. Soluble Salts: < 1.5 mmhos/cm
  - 5. Available Nitrogen (N): OM levels: 3 – 8%
  - 6. Available Phosphorus (P): (using Bray test): 20 – 70 ppm (using Olsen test): 10 - 40 ppm
  - 7. Available Potassium (K): 150 – 300 ppm
  - 8. Available Calcium (Ca): pH levels: 5.5 – 7.5
  - 9. Available Magnesium (Mg): 60 – 300 ppm
  - 10. Available Sulfur (S): 5 – 20 ppm
  - 11. CEC: pH levels: 5.5 – 7.5
  - 12. C:N: 10:1 to 20:1
- ii. Provide certification from the supplier that the topsoil does not contain any toxic substances harmful to plant growth.

- iii. Off-site (borrowed) topsoil meeting the criteria shown above must be used for the planting mix and their source or location communicated to the Landscape Architect.
  - iv. Soil nutrient/pH analysis to be performed by an agronomic soil testing agency; apply & incorporate any recommended fertilizers or soil amendments to achieve proper growing conditions. Testing for topsoil suitability to meet these Specifications is the responsibility of the Contractor. Results to be supplied to Landscape Architect and Owner.
- c. Topsoil from the site may be used if it meets the above requirements. Additional topsoil shall be provided as required by Drawings and Specifications. Topsoil stockpiled from the site shall be tested and amended per the recommendations of the testing agency to meet the above requirements.
- d. Topsoil for lawn areas shall have a depth of 4" minimum.
- B. Soil for Planting Beds and Trees
- a. Evans Supersoil or approved equal.
    - i. Evans Landscaping
    - ii. 513-271-1119
    - iii. 4229 Round Bottom Rd.
    - iv. Cincinnati, OH 45244-1629
    - v. <https://www.evanslandscaping.com/product/supersoil/>
  - b. Depth: 18" for planting beds, 36" for trees; unless otherwise indicated
- C. Topsoil Supply & Sources
- a. Adequate quantities of topsoil materials shall be provided to attain, after compaction and natural settlement, all design finish grades. Verify quantities for placement as specified to suit site conditions.
  - b. Stockpiles should be no more than six (6) feet in height to prevent anaerobic conditions within the pile.

## 2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows: Any application of lime recommended by Contractor must be substantiated by lab tests results approved by Landscape Architect.
- a. Class: Class T, with a minimum 99 percent passing through No. 8 (2.36-mm) sieve and a minimum 75 percent passing through No. 60 (0.25-mm) sieve.
  - b. Class: Class O, with a minimum 95 percent passing through No. 8 (2.36-mm) sieve and a minimum 55 percent passing through No. 60 (0.25-mm) sieve.
  - c. Provide lime in form of dolomitic limestone.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 (3.35-mm) sieve and a maximum 10 percent passing through No. 40 (0.425-mm) sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 30-35 percent iron and 30-50 percent sulfur and supplied by a commercial fertilizer supplier.
- D. Aluminum Sulfate: Commercial grade, unadulterated.

- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- G. Sand: Clean, washed, natural or manufactured, free of toxic materials.
- H. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.
- J. Hydrogel: "Soil Moist"<sup>(™)</sup> Hydro by JRM Chemical Inc. (1-800-962-4010) or approved equal. Applied and mixed according to manufacturer's recommendations.

### **2.3 ORGANIC SOIL AMENDMENTS**

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch (19-mm) sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
  - a. Organic Matter Content: 50 percent of dry weight.
  - b. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Peat: Sphagnum peat moss, partially decomposed, finely divided or granular texture, with a pH range of 3.1 to 5.0.
- C. Peat: Finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat, or reed-sedge peat and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
  - a. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with at least 0.15 lb. (2.4 kg) of ammonium nitrate or 0.25 lb (4 kg) of ammonium sulfate per cubic foot (cubic meter) of loose sawdust or ground bark.
- E. Manure: Well-rotted, unbleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

### **2.4 FERTILIZER**

- A. Do not apply any fertilizer other than compost to any area to be installed with plant plugs.
- B. Containing fifty percent of the elements derived from organic source; of proportion necessary to eliminate and deficiencies of topsoil, as indicated in analysis.

- C. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- D. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- E. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
  - a. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- F. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
  - a. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- G. Calcium nitrate: Agricultural grade containing 15-½ percent nitrogen.

## **2.5 HERBICIDE**

- A. Pre-Emergent Herbicide: Granular type, Treflan or equal, to be applied at a rate per manufacturer's recommendation.

## **2.6 MULCHES**

- A. Organic Mulch: Free from deleterious materials, locally harvested and produced, and suitable as a top dressing of trees and shrubs, all planting beds and tree plantings not in pavement shall be top dressed with 2" of approved hardwood mulch.

## **2.7 MISCELLANEOUS PRODUCTS**

- A. Anti-desiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
- B. Tree Root Barrier:

## **PART 3-EXECUTION**

### **3.1 SITE EXAMINATION**

- A. Prior to installation of soils, examine site to confirm that existing conditions are satisfactory for the Work of this section to proceed.
  - a. Confirm that the subgrade is at the proper elevation and compacted as required.
  - b. Confirm that the surface of all areas to be filled with planting soils are free of construction debris, refuse, compressible or biodegradable materials, stones greater than two (2) inches in diameter, soil crusting films of silt or clay, and/or standing water. Remove unsuitable material from the site.

- c. Confirm no adverse drainage conditions are present.
  - d. Confirm that no conditions are present which are detrimental to plant growth.
  - e. Confirm that utility Work has been completed per the Drawings.
  - f. Confirm that irrigation Work, which is shown to be installed below prepared soil levels, has been completed.
- B. If unsatisfactory conditions are encountered, notify the Landscape Architect immediately to determine corrective action before proceeding.

### 3.2 COORDINATION WITH PROJECT WORK

- A. The Contractor shall coordinate with all other Work that may impact the completion of the Work.
- B. Prior to the start of Work, prepare a detailed schedule of the Work for coordination with other trades.

### 3.3 INSTALLATION

- A. Sequencing of Work to Prevent Compaction
  - a. All equipment utilized to install or grade planting soils shall be wide track or balloon tire machines rated with a ground pressure of 4 psi or less. All grading and soil delivery equipment shall have buckets equipped with 6" long teeth to scarify any soil that becomes compacted.
  - b. Phase Work such that equipment to deliver or grade soil does not have to operate over previously installed soils. Work in rows of lifts the width of the extension of the bucket on the loader. Install all lifts in one row before proceeding to the next. Work out from the furthest part of each bed from the soil delivery point to the edge of each bed area.
  - c. Where possible, place large trees first and fill planting soil around the root ball.
  - d. Where travel over installed soil is unavoidable, limit paths of traffic to reduce the impact of compaction in planting soil. Where possible, use plywood, steel or other approved sheeting as directed by Landscape Architect to protect soils beneath from compaction. Comply with the paragraph "Compaction Reduction" (section 3.03 B) in the event that soil becomes over compacted.
  - e. The depths and grades shown on the Drawings are the final grades after settlement and shrinkage of the installed soils. The Contractor shall install all soils at a higher level to anticipate this reduction in soil volume. A minimum settlement of approximately 10-15% of the soil depth is expected.
  - f. Maintain moisture conditions within the planting soils during installation or modification to allow for satisfactory compaction. Suspend operations if the soil becomes wet. Apply water if the soil is overly dry.
  - g. Provide adequate equipment to achieve consistent and uniform compaction of the planting soils. Use the smallest equipment that can reasonably perform the task of spreading and compaction.
  - h. DO NOT pass motorized equipment over previously installed and compacted soil except as authorized below.
    - i. Light weight equipment such as trenching machines or motorized wheelbarrows is permitted to pass over finished soil Work.

- ii. If Work after the installation and compaction of soil compacts the soil to levels greater than desired, follow the requirements of the paragraph “Over-Compaction Reduction” below.
- B. In performing this Work, Contactor shall avoid damage to any existing structures or features of the park or features under construction, such as drainage and irrigation systems. The Contractor at their own expense shall repair any such damage.
- C. Over-Compaction Reduction
  - a. Any soil that becomes compacted to a greater density than specified herein shall be dug up and reinstalled. See paragraph 1.6D “Soil-Compaction Testing” for acceptable compaction levels. This requirement includes compaction caused by other Sub-Contractors after the soil is installed and approved.
  - b. Surface roto-tilling shall not be considered adequate to reduce over compaction at levels 6” or greater below finished grade.
- D. Topsoil & Planting Soil Mix Installation
  - a. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
  - b. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas. Roll and rake, remove ridges, and fill depressions to meet finish grades.
  - c. Protect structures, utilities, sidewalks, pavements, other facilities, and lawns and existing exterior plants from damage caused by soil installation operations.
- E. Planting soil mixes throughout the planting areas on-site shall then be carefully smoothed and compacted to the finished grade by alternately raking, watering, and rolling. The planting areas shall then be checked for irregularities and adjusted to a uniform grade. Compaction of the planting mixes shall be within the range of 85% to 90% and shall be tested via nuclear methods by the Geo-technical Engineer on the site during construction.
- F. Prevent contamination or mixing of planting soil mixes and subgrade soil material. Remove contaminated materials as directed by the Landscape Architect. Materials trucked into the site must be done in such a manner as not to alter the subgrade and/or damage drainage and irrigation ditches and systems. Materials shall be handled in a fashion to prevent the mixing of other soil and materials with the planting soil mixes.
  - a. Place topsoil during dry weather and on dry unfrozen subgrade.
  - b. Spread topsoil and rake until smooth.
  - c. Manually spread topsoil around trees, plants, and hardscapes to prevent damage.
  - d. While spreading topsoil, remove foreign materials, weeds and undesirable plants and their roots. Remove stones larger than 1” in any dimension. Legally dispose of all removed items off site property.
  - e. Grade topsoil to eliminate rough, low, or soft areas and to ensure positive drainage. Finished grade shall be within plus or minus 0.1 feet of the elevation shown on the Drawings.
  - f. Leave stockpile area and site clean and raked, ready to receive landscaping.

- g. Soil type shall be placed to thicknesses, elevations, and locations as shown on the construction Drawings and details or as otherwise called out in the Specifications.

**END OF SECTION**

**SECTION 32 92 23**  
**SODDING AND SEEDING**

**PART 1-GENERAL**

**1.1 SECTION INCLUDES**

- A. Preparation of subsoil
- B. Placing topsoil
- C. Fertilizing
- D. Sod, seed and hydromulch installation

**1.2 RELATED REQUIREMENTS**

- A. Section 02 41 01 - Tree Preservation
- B. Section 31 00 00 - Earthwork
- C. Section 32 91 00 - Planting Preparation
- D. Section 32 93 00 - Exterior Plants

**1.3 DEFINITIONS**

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

**1.4 REFERENCE STANDARDS**

- A. TPI (SPEC) - Guideline Specifications to Turfgrass Sodding; Turfgrass Producers International; 2006.

**1.5 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Certification: Submit certification of grass species and location(s) of sod source(s).
- C. Sod type(s): Provide data sheet(s) on Contractor recommended sod for all turf types indicated on drawings to Landscape Architect.
- D. Submit manufacturers recommended installation process for all turf types.



**1.6 QUALITY ASSURANCE**

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five (5) years' experience on projects of similar size and scope and certified by the State of Ohio.
  - a. Sod Producer to provide guarantee the provided sod will grow roots into soil mix on site upon inspection and approval of site preparation.
- B. Installer Qualifications: Company approved by the sod producer.

**1.7 REGULATORY REQUIREMENTS**

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

**1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver sod on pallets in good condition to be approved by Landscape Architect. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be laid within 24 hours.

**PART 2-PRODUCTS****2.1 SOD**

- A. Provide sod uniform pad sizes with maximum 5% deviation in either length or width. Broken pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10% of pad will be rejected. Large rolls of sod can be used as an option.
- B. Certified turfgrass sod conforming to TPI specifications (or as identified here) for machine cut thickness, size, strength, moisture content, mowed height, and free of weeds, stones, burned or bare spots, and undesirable native grasses. Provide viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.
- C. Soil thickness: Nominal 1/2 inch, soil the sod is grown in at grower location must match the lawn soil mix in 32 91 00 Planting Preparation specification.
- D. Sod to be well-rooted blend of turf type tall fescues (fine leaf fescues) comprised of three (3) varieties. The turf shall be of sufficient density so that no surface soil is visible when mowed to a height of 1.5". Maximum mowing height is 2.0".
- E. Sod Mixture:
  - a. Kentucky Blue Grass: 10 percent.
  - b. Turf Type Tall Fescue Grass: 90 percent.

- F. Harvesting Sod:
  - a. Machine-cut sod and load on pallets in accordance with TPI Guidelines.
  - b. Cut sod in area not exceeding 1 sq yd (1 sq m), with minimum 1/2 inch (13 mm) and maximum 1 inch (25 mm) topsoil base.
- G. Topsoil: See topsoil requirements in the drawings and specifications.
- H. Fertilizer: Recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.
- I. Water: Clean, fresh, and free of substances or matter that could inhibit vigorous growth of grass.

**2.2 SEED MIXTURE**

A. Seed Mixture shall be furnished in new bags or bags that are sound and not mended; no "below standard" seed accepted. Packages should show weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored on site.

B. Seed mixture:

Seed Type	Rate (lbs. per 1,000 SF)	Maximum by Weight Purity	Germination
Turf type tall fescue (blend of three varieties)	4.8	98%	80%
Blue Grass	1.2	98%	90%

C. All seed mix adjustments should be preapproved by the Owner prior to ordering of installing.

**2.3 SOURCE QUALITY CONTROL**

- A. Provide analysis of topsoil fill under provisions of Section 01 4000.
- B. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.
- C. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.

**2.4 SEEDING MULCH**

- A. Hydromulch: Wood fiber type Applegate Wood-Lok BFM or approved equal.
  - a. Hydromulch shall consist of long strands of virgin wood fibers made from fresh cut, clean whole wood chips, with extra holding power of a high strength, non-toxic, hydrocolloid-based binder. Hydromulch shall not dissolve or disperse when rewetted.
  - b. The hydromulch system shall spray on like mulch and form a blanket that adheres to the soil and shall be 100% biodegradable. The hydromulch shall be green in color to allow visual of even application.
  - c. Hydromulch shall have the following components:
    - 1. Moisture content: 12% (+/- 3%)
    - 2. Organic matter (oven dried basis): 99.3% (+/- 0.2%)

3. Ash content (oven dried basis): 0.7% (+/- 0.2%)
  4. pH @ 3% concentration: 4.8% (+/- 0.5%)
  5. Water holding capacity (per 100 grams oven dry fiber): min 1,250 grams
  6. Color: Green
  7. Tackifier content (based on total weight): 10%
- d. Pre-approved supplier:
1. Applegate Mulch
  2. Model: Wood-Lok BFM
  3. Webberville, MI 48892
  4. (800) 627-7536
  5. [www.applegatemulch.com](http://www.applegatemulch.com)
  6. Equals will be considered on a pre-approved basis only.

## **PART 3–EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that prepared soil base is ready to receive the work of this section.

### **3.2 PREPARATION**

- A. Prepare subgrade in accordance with Section 31 00 00 Earthwork.
- B. Place planting soil in accordance with Section 31 91 00 Planting Preparation.

### **3.3 FERTILIZING**

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Mix thoroughly into upper 2 inches (50 mm) of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

### **3.4 INSTALLATION OF SEED**

- A. All areas shown as seeding to be seeded with the mix as specified.
- B. Apply in accordance with Seed Supplier's Instructions.
- C. Perform all seeding and related work as a continuous operation. Sow seed as soon as the seed bed has been prepared and perform subsequent work in a continuous manner.
- D. Before beginning seeding operations in any area, complete the placing of topsoil and final grading, and have the work approved by Owner. Grading and drainage should be per grading plans, with crowns and breaks in drainage patterns to be well rounded and transitioned.

- E. Do not seed areas in excess of that which can be mulched or matted on same day.
- F. There shall be no ponding or puddling of water on the bare soil after such a rain event. Contractor to address any inconsistencies or ponding of water prior to seeding.
- G. Moisten prepared lawn areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy or eroded soil. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.
- H. Perform no seeding during windy weather or when the ground surface is frozen, wet, or otherwise untillable. It is the Contractor's responsibility to secure seed so as not to blow in other seeded areas. For example, lawn seed should not mix with native seed after installation.
- I. Seeding installation can be completed by one of the following methods:
  - a. Seed Drill (preferred)
  - b. Broadcast Spreader
- J. If using seed drill, ensure the drill is properly calibrated to sow the specified amount of seed over the specified area. Ensure complete coverage of the specified area. Calibrate drill at 1/3 seeding rate and make three passes at 40 degrees from the previous to lessen row effect.
  - a. Seed should be placed 1/4 to 1/2-inch-deep to maintain good moisture during germination.
  - b. Do not mix fine easily flowing seed with fluffy seeds in drill.
- K. In tight areas where use of drill is not appropriate, broadcasting seed by hand may be substituted.
  - a. Mix the seed with a carrier of similar weight (i.e. sand or clay-based kitty litter). The carrier will ensure a more uniform delivery of the mix of fine to fluffy seed to the area being planted. Use two- to four-parts carrier to one-part seed.
  - b. Divide the seeding area and seed mixture into several small equal sections, and hand cast the seed in two (2) directions to ensure proper coverage. Ensure that the proper rate of seeding is being applied evenly across the site.
  - c. Follow hand seeding with a light raking or rolling to give good seed to soil contact. Do not roll or track the seed if soil is wet.
- L. All seeded areas are to be immediately hydromulched following the seeding operation. Hydromulch rates should be applied as follows:
  - a. Hydro Mulch Rate: utilize 3,000 lbs per acre.
  - b. Hydro mulch application shall attain Complete Soil Coverage, with an additional thin layer once complete cover is achieved.
- M. Blend all seed mixes into undisturbed areas 4 to 5 feet.
- N. No equipment, material storage, construction traffic, etc., will be permitted on newly seeded ground.
- O. Identify seeded areas with stakes and string around area periphery and add appropriate signage to protect newly seeded areas.
- P. Protect areas adjacent to those being seeded as necessary to keep native seed only in designated area(s). Do not allow native seed to blow into sod areas or planting beds. If native plants appear in sod or planted areas, Contractor shall be responsible for remediating at no cost

to Owner. If turf plants appear in native seed or planted areas, Contractor shall be responsible for remediating at no cost to Owner.

### 3.5 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.
- D. Where new sod adjoins existing grass areas, align top surfaces.
- E. Where sod is placed adjacent to hard surfaces, such as curbs, pavements, etc., place top elevation of sod 1/2 inch (13 mm) below top of hard surface.
- F. Water sodded areas immediately after installation. Saturate sod to 4" (100 mm) of soil.
- G. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

### 3.6 MAINTENANCE

- A. Maintain sodded areas immediately after placement until grass is well-established and exhibits a vigorous growing condition and well rooted, is free of weeds, and does not have any signs of insect infestation or disease that may have been transported from the growing source.
- B. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches – 3 inches. Do not cut more than 1/3 of grass blade at anyone mowing.
- C. Water to prevent grass and soil from drying out.
- D. Roll surface to remove irregularities.
- E. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- F. Immediately replace sod to areas that show deterioration or bare spots.
- G. If any sod shrinks due to drying, all gaps should be filled with same material as base mix.
- H. Maintenance period shall end after acceptance by Landscape Architect. Sod shall have an extended 90-day warranty after acceptance in first growing season against infection of disease and insects.

**END OF SECTION**

**SECTION 32 93 00****EXTERIOR PLANTS****PART 1-GENERAL****1.1 SECTION INCLUDES**

- A. Preparation of plant beds and holes for plants
- B. Exterior Plants: Trees, shrubs, groundcover, bulbs, and perennials
- C. Boulders and Landscape Stone
- D. Backfill Soils and Soil Amendments
- E. Mulches

**1.2 RELATED REQUIREMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.
- B. Section 02 41 01 - Tree Preservation
- C. Section 31 00 00 – Earthwork
- D. Section 32 91 00 - Planting Preparation
- E. Section 32 92 23 – Seeding and Sodding
- F. This Work shall be performed in all areas required by the Drawings or directed by the Landscape Architect, applying to exterior plants as outlined in Part 2 of this Section.

**1.3 DEFINITIONS**

- A. Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size is subject to meeting ANSI Z60.1 limitations for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum laced as recommended by ANSI Z60.1.
- B. Balled and Potted Stock: Exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is subject to meeting ANSI Z60.1 limitations for type and size of tree or shrub required.
- C. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape

and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required.

- D. Finish Grade: Surface or elevation of soil remaining after topsoil/planting mix has been spread to the specified depth on Drawings. See Drawings for soil types.
- E. Topsoil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- F. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
- G. Landscape Stone: Stone-gravel to be used in bed of drainage ways.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Certificates: For each type of manufactured product, signed by product manufacturer, and complying with the following:
  - a. Manufacturer's certified analysis for standard products.
  - b. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Qualification Data: Statement of Landscape Installer qualifications in performing urban park landscape installations of similar size/scope with a minimum of ten (10) years' experience and provide proof of five (5) or more successful examples of similar projects within the Louisville Metropolitan region.
- D. Material List: Provide list of each landscape material (trees, shrubs, perennials, groundcover, bulb, seed) and identify intended type and nursery source.
- E. Soil Test Reports: Reports of on-site and imported soil and list of proposed amendments, including application rates, for each type of planting.
- F. Planting Schedule: Indicate expected delivery and installation dates for each type of landscape Work, during seasons identified for such Work.
- G. Maintenance Instructions: Typewritten recommended seasonal procedures to be established by Owner for maintenance of exterior plants during a calendar year. Include recommendations for care of trees, shrubs, perennials, and turfgrass to promote healthy, vigorous growth and avoid susceptibility to disease. Submit before expiration of required maintenance periods.
- H. Soil Amendment and Fertilizer Certification: Manufacturers' statements for soil amendments and fertilizer materials certifying that products conform to specified requirements.
- I. Topsoil Certification: If topsoil is needed from an off-site source, before delivery of topsoil, submit written statement giving location of properties from which topsoil is to be obtained,

names and addresses of Owners, depth to be stripped, and crops grown during the past two (2) years.

- J. Tree Certification: Signed statement by nursery certifying that plants conform to specified requirements.
- K. Sod Certification: Signed statement by sod producer certifying that sod conforms to specified requirements. Include name, address, and telephone number of sod producer.
- L. Photographs of Trees: Submit images within fourteen (14) days of proposed field inspections of each plant species of each size and each quality grade clearly showing the full range of variations between the grades. Trees may be tagged by the Landscape Architect and Owner at nursery.
  - a. Scale: Include a yardstick in each photograph to provide scale.
  - b. Background: Ensure form and condition of plant is clear from background. Photographs of tree canopies that are bound with twine are not acceptable.
  - c. Identification: Provide the following information:
    - i. Name of Project and Owner
    - ii. Name and address of grower
    - iii. Date photograph was taken
    - iv. Species name and quality grade
    - v. Date tree was dug or will be dug
- M. Photographs of Landscape Stone Material
  - a. Contractor shall submit photos to the landscape architect of sample color, size, and character of landscape stone. Landscape stone shall be free of mud and gravel at time of photo.
- N. Topsoil Analysis: Contractor shall furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil. A minimum of two (2) samples from each different soil area and from each imported soil source is required.
  - a. Report suitability of topsoil for plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory topsoil.
  - b. Submit soil analyses to Landscape Architect for review prior to soil preparation.
  - c. Soil analysis requirement applies to all soils and conditions within this project, including import soils and on-grade soils.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer with ten (10) years' experience (minimum) who have completed urban park Work similar in material, design, and extent to that indicated for this project and with a record of successful landscape establishment. Qualified landscape installer must provide five (5) or more successful installations of similar size and scope.
  - a. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when exterior planting is in progress.



- B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Provide consistent quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock." Trees and shrubs that are proposed to be in groupings shall be selected for consistent form and character.
- D. Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6-inches (150 mm) above ground for trees up to 4-inch (100-mm) caliper size, and 12-inches (300 mm) above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.
- E. Observation: Landscape Architect may observe trees and shrubs either at place of growth or at site before planting for compliance with requirements for genus, species, variety, size, and quality. Landscape Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, insects, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of Work. Remove rejected trees or shrubs immediately from project site.
  - a. Notify Landscape Architect of sources of planting materials ten (10) days in advance of delivery to site.
- F. Allowance for losses: Grow or locate additional plants to ensure that the contract quantities shall be achieved after normal production losses from natural causes, breakage, natural random non-conformities, transplant shock and/or delivery damage. Replace any plants that are damaged, fail, or are rejected.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver exterior plants freshly dug. Keep plants moist.
- B. Do not prune trees and shrubs before delivery, except as approved by Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.
- C. Handle planting stock by root ball while supporting the stem.
- D. Deliver trees and shrubs after preparations for planting have been completed and install immediately. If planting is delayed more than six (6) hours after delivery, set exterior plants and trees in shade, protect from weather and mechanical damage, and keep roots moist.
  - a. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
  - b. Do not remove container-grown stock from containers before time of planting.

- c. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.
- E. Package Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

## 1.7 COORDINATION

- A. Planting Installation Schedule: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
- a. Deciduous and Evergreen Material: March 1st to May 30th or September 15 to December 15th
  - b. Herbaceous Material: March 1st to May 30th or September 15- October 31
  - c. Bulbs: September 15- December 15
  - d. Other planting times may be considered with prior approval; if the plant material is dormant, or if plant material has been dug during dormancy and has been maintained in a holding area for at least 2 weeks and not more than six (6) weeks without signs of wilting, scorching or other signs of stress.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit. Planting will not be permitted if sufficient soil moisture is absent, if soil is too wet/muddy, or if ground is frozen.
- C. Coordination with Lawns: Plant trees and shrubs after finish grades are established and before planting lawns, unless otherwise acceptable to Landscape Architect.
- D. When planting trees and shrubs after lawns, protect lawn areas and promptly repair damage caused by planting operations.
- E. Coordinate planting operations with the locations of underground utilities, Contractor is to contact the utility location service. Contractor is to coordinate Work with other trades and with the general Contractor to protect private underground utilities in the area. Contractor is responsible for the repair or replacement of any utilities.
- F. Landscape Contractor is responsible for verifying all required topsoil is in place before the planting operation commences. Plant material may have to be removed due to insufficient topsoil for no additional cost.
- G. Coordination with Landscape Architect: Unless noted, tree locations, shrub, groundcover, and bulb/perennial/annual bed locations are approximate. Contractor shall stake as indicated below:
- a. Trees: Stake out all tree locations in field using colored flags for each different tree species for review by the Landscape Architect prior to excavation. Landscape Architect reserves the right to adjust plants to exact location in the field.
  - b. Shrubs, groundcover, and perennial/annual beds: Bed layouts shall be staked for review by Landscape Architect prior to installation. Landscape Architect reserves the right to adjust plants to exact location in the field. Do not disturb root zones or existing trees for planting bed preparation.

- c. Boulders: Contractor shall stake boulders according to design intent on Drawings. Landscape Architect to review boulder placement and orientation of individual boulders.

## 1.8 WARRANTY

- A. Special Warranty: Warrant the following exterior plants, for the warranty period indicated, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, or incidents that are beyond Contractor's control.
  - a. Warranty Period for Trees and Shrubs: Two (2) years from date of Substantial Completion.
  - b. Warranty Period for Ground Cover, and Perennials: One (1) year from date of Substantial Completion.
- B. Remove dead exterior plants immediately. Replace immediately unless required to plant in the succeeding planting season.
- C. Replace exterior plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period as directed by Landscape Architect.
- D. A limit of one (1) replacement of each exterior plant will be required, except for losses or replacements due to failure to comply with requirements.
- E. There will be no exceptions to the warranty. Contractor accepts responsibility for all materials specified unless objections to a source or species is raised by the Contractor to the Landscape Architect before commencement of the Work. This includes all project planting conditions.

## 1.9 MAINTENANCE

- A. Trees and Shrubs: Maintain for the following maintenance period by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.
  - a. Maintenance Period for General Landscape Planting: One (1) year - At that time, the Owner will accept responsibility for maintenance.
- B. All plant material shall be maintained in a healthy and growing condition and must be replaced with plant material of similar variety and size if damaged, destroyed, or removed.

## 1.10 PROJECT CONDITIONS

- A. Coordinate excavation and plant installation with location of above grade and underground utilities and ODOT tunnel, which will avoid damage.
  - a. Hand-excavate as required.
  - b. Maintain grade stakes until removal is mutually agreed upon by parties concerned. Contractor is liable for the repair of any utility damaged by their Work at no additional costs to the Owner.

- B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.
- C. Erosion Control: All erosion control matting to be installed before seeding begins. See construction manager for all sediment and erosion control.
- D. Utilities: Determine location of aboveground and underground utilities and perform Work in a manner which will avoid damage. Hand-excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned. Contractor is liable for the repair of any utility damage by their Work at no additional cost.
- E. Landscaped areas shall be kept free of trash, litter, and weeds at all times during construction.
- F. Existing Trees: Install new plants under or adjacent to existing trees without causing damage to the existing trees (trunk, canopy, roots). Do not till to prepare beds under trees and refer to special planting details in the Drawings for planting methods to limit disturbance. Adjust layout as necessary to avoid roots as approved by the Landscape Architect.

#### **1.11 ENVIRONMENTAL CONDITIONS**

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.
- B. Do not install plants when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

### **PART 2--PRODUCTS**

#### **2.1 TREE MATERIAL**

- A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement. Plant material should be selected from material grown in like hardiness zone to the project.
  - a. Trees should have one main straight leader limbed to the height specified in the planting schedule, a well-balanced crown, and height and caliper as indicated in planting schedule.
  - b. Branching Height: As noted in the Plant Schedule.
- B. Grade: Provide trees of sizes and grades complying with ANSI Z60.1 for type of trees required. Trees of a larger size may be used if acceptable to Landscape Architect, with a proportionate increase in size of roots or balls.

- C. Label at least one (1) tree of each variety and caliper with a securely attached waterproof tag bearing legible designation of botanical and common name.
- D. If formal arrangements or consecutive order of trees is shown, select stock for uniform character, height and spread, and number label to assure symmetry in planting.
- E. Tree Root Union: Trees will not be accepted if the Tree Root Union has been buried. Trees must be harvested that have had the tree root union uncovered prior to digging. Root ball size must meet standards, shaving off excess soil from root ball after digging of tree will not be accepted. Failure to comply with this requirement is cause for rejection of affected plant material.

## 2.2 SHADE AND FLOWERING TREES

- A. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with ANSI Z60.1 for type of trees required.
  - a. Provide balled and burlapped trees.
  - b. Branching Height: One-third to one-half of tree height.
- B. Small Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:
  - a. Stem Form: as noted on the Drawings.
  - b. Provide balled and burlapped trees.
- C. Multistem Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:
  - a. Stem Form: Clump.
  - b. Provide balled and burlapped trees.

## 2.3 DECIDUOUS SHRUBS

- A. Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.
- B. Label at least one (1) shrub of each variety with a securely attached, waterproof tag bearing legible designation of botanical and common name.

## 2.4 GROUND COVER PLANTS

- A. Groundcover: Provide groundcover of species indicated, established and well-rooted in pots or similar containers, and complying with ANSI Z60.1.

## 2.5 PLANTS

- A. Perennials and Grasses: See pot sizes specified in plant schedule; Provide healthy, field-grown plants from a commercial nursery, of species and variety shown on plan.

**PART 3-EXECUTION****3.1 EXAMINATION**

- A. Examine areas to receive exterior plants for compliance with requirements and conditions affecting installation and performance. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 SITE PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, and lawns and existing exterior plants from damage caused by planting operations.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple exterior planting. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before planting. Make minor adjustments as required.
  - a. Unless noted, tree locations on Drawings are approximate. Contractor shall stake out all tree locations in the field using colored flags for each different tree species for review by Landscape Architect prior to excavation. Landscape Architect reserves the right to adjust plants to exact location in field.
- D. Apply anti-desiccant to trees and shrubs using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
  - a. If deciduous trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.

**3.3 PREPARATION OF TREE, SHRUB, & GROUNDcover AREAS**

- A. In areas where new plantings are within existing tree dripline, no site preparation that will damage or expose roots should be done. See landscape Drawings for these locations. Remove undesirable materials and excavate area only enough to install shrub and use native topsoil to backfill.
- B. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Remove foreign materials, weeds, and undesirable plants and their roots. Remove contaminated subsoil. Remove stones larger than 1" in any dimension. Remove sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- D. Scarify subsoil to a depth of 8" where plants are to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

- E. Finish grades of all landscape areas shall be 1" below adjacent curb or pavement. In areas where 2" mulch is to be applied finish soil grades shall be 2" below adjacent curb or pavement, mulch surface shall be flush with adjacent curb or pavement.
- F. Spread topsoil to the depth indicated on plans and not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
  - a. Spread approximately one-half the thickness of topsoil over loosened subgrade. Mix thoroughly into top 4" of subgrade. Spread remainder of topsoil.
- G. After topsoil is spread, apply soil amendments and fertilizer on surface and thoroughly blend topsoil.
  - a. Delay mixing fertilizer with topsoil if planting will not proceed within a few days.
  - b. Mix lime (if needed) with dry soil before mixing fertilizer.
- H. Apply pre-emergent herbicide to all planting beds prior to plant installation. Follow manufacturer's recommendations on application. Do not apply pre-emergent herbicide to areas where plugs will be installed.
- I. Dig pits and beds 6" larger than plant root system.
- J. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

### 3.4 TREE AND SHRUB INSTALLATION

- A. Excavation
  - a. In areas where new plantings are within existing tree dripline excavate area only enough to install shrub and use native topsoil to backfill.
  - b. Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.
    - i. Excavate approximately two (2) times as wide as ball diameter for balled and burlapped/container-grown stock.
    - ii. Excavate at least 12" wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
    - iii. If drain tile is shown or required under planted areas, excavate to top of porous backfill over tile.
  - c. Subsoil removed from excavations may be used as backfill.
  - d. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
    - i. Hardpan Layer: Drill 6" diameter holes into free-draining strata or to a depth of ten (10) feet, whichever is less, and backfill with free-draining material.
  - e. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub pits.
- B. Planting

- a. Plant Placement: Plant spacing is as indicated on 'Plant Schedule' unless otherwise noted. It is the Contractor's responsibility to provide full coverage in all planting areas as specified in the plant schedule remarks.
    - i. Align and equally space in all directions all trees, shrubs, groundcover, bulbs, and plugs as noted in the Drawings.
  - b. Set balled and burlapped stock plumb and in center of pit or trench with top of root crown 2" (50 mm) above adjacent finish grades.
    - i. Remove burlap, rope, container and/or wire baskets from top 1/3rd of root balls and partially from sides, but do not remove from burlap from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
    - ii. Place topsoil around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of topsoil.
  - c. Dish and tamp top of backfill to form a 3" high saucer around the rim of the pit. Do not cover top of root ball with backfill.
  - d. Wrap trees of 2" caliper and larger with trunk-wrap tape. Start at base of trunk and spiral cover trunk to height of first branches. Overlap wrap, exposing half the width, and securely attach without causing girdling. Inspect tree trunks for injury, improper pruning, and insect infestation; take corrective measures required before wrapping.
- C. Pruning
- a. Prune, thin, and shape trees and shrubs as directed by Landscape Architect according to standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured or dead branches from flowering trees. Prune shrubs to retain natural character. Shrub sizes indicated are sizes after pruning.

### 3.5 GROUNDcover INSTALLATION

- A. Set out and space ground cover and plants as indicated on planting plans.
- B. Dig holes large enough to allow spreading of roots and backfill with planting soil.
- C. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- D. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- E. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

### 3.6 CLEANUP AND PROTECTION

- A. During exterior planting, keep adjacent pavement and construction clean and Work area in an orderly condition. In particular, protect porous hardscape areas from dirt, silt, and mulch.



- B. Protect exterior plants from damage due to landscape operations, operations by other Contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged exterior planting.

### **3.7 OBSERVATION AND ACCEPTANCE**

- A. Observation: A field verification must be completed by the Landscape Architect of performance of landscape Work defined by Contract Documents. Observation visits may be made by the Landscape Architect at any time throughout the landscape installation.
- B. Substantial Acceptance: The acknowledgement by the Landscape Architect that the landscape Work defined by the plans and Specifications is substantially complete. The Landscape Architect shall provide the Contractor with a written punch list indicating items to be corrected or completed by the Contractor within two (2) weeks of notification.
  - a. Substantial Acceptance site review is requested by the Contractor when they believe that the landscape installation meets all the requirements of the plans and Specifications.
  - b. If the project is found to be substantially complete by the Landscape Architect, then Substantial Acceptance will be acknowledged by the Landscape Architect in the punch list.
- C. Final Acceptance: Following substantial acceptance, the date of the Final Acceptance shall be when the Owner and the Landscape Architect verify on site that all the items on the punch list have been completed and/or corrected by the Contractor.

### **3.8 DISPOSAL**

- A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

**END OF SECTION**