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**EXHIBIT B.2**  
**TRADE CATEGORY SPECIFIC SCOPE**  
**SCOPE CLARIFICATIONS, ALTERNATES, UNIT PRICES, ALLOWANCES, AND**  
**CONTRACT BREAKDOWN**

**Trade Category 31D.9 Thermal Utility Tunnel**  
**SEE ALSO EXHIBIT B.1 FOR BID SET SCOPE ITEMS**

Provide labor, material, equipment, and all else necessary labor to design, furnish and install complete the Thermal Utility Tunnel as required by the contract documents and as outlined below.

**1. SPECIFICATION SECTIONS:**

The following specification sections are listed as the responsibility of the Subcontractor in defining its area of work on this project:

Walsh Construction Bid Manual  
Division 01 General Requirements  
Division 03 Concrete  
033000 Cast-in-Place Concrete  
Division 05 Metals  
Division 31 Earthwork  
316320 Drilled Piers

Unless specifically indicated otherwise or excluded below, Subcontractor is responsible for the complete specification sections indicated above.

Division 01 of the Specifications are general in nature and apply to all Subcontracts. These sections are included "complete" as part of this Subcontract Agreement.

The Subcontractor is also responsible for trade specifications not specifically listed above but required by reference in the listed specifications or as required to perform the scope of work described herein, as well as the Bidding Requirements, Contracting Requirements, and the use of the Construction Documents as a whole.

**2. ADDENDUMS, BULLETINS, OR INFORMATION LETTERS:**

See Exhibit B.1 for Complete List of Addendums, Bulletins, or Information Letters.

**3. REQUESTS FOR INFORMATION (RFI):**

The following RFIs were issued prior to award of this Subcontract and the scope specifically referred to in the RFI or any scope that is reasonable inferable from these RFIs are included in this Subcontract Agreement:

See 00 91 13 Bid Question Log for complete list of Bid RFI.

**4. SMALL BUSINESS AND DBE SUBCONTRACTOR REQUIREMENTS:**

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1. No additional requirements other than shown in Exhibit B.1 and in all other parts of the Contract.

## **5. LABOR AND MANPOWER:**

1. No additional requirements other than shown in Exhibit B.1 and in all other parts of the Contract.

## **6. UK HEALTHCARE SUSTAINABILITY and LEED REQUIREMENTS:**

1. No additional requirements other than shown in Exhibit B.1 and in all other parts of the Contract.

## **7. SCOPE CLARIFICATIONS-SCOPE SPECIFIC:**

1. Subcontractor is responsible for the complete Design and Construction of the Thermal Utility Tunnel. Subcontractor is to comply with all requisite laws, codes, and regulations for the design and construction of tunnels.
2. Subcontractor's design will be fully engineered and stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. Subcontractor to provide full design liability insurance per the Design Build exhibit of the contract. This Subcontractor will provide design assistance and coordination with the project's Design Team in order to complete the contract documents and account for the proposed tunneling system. Schedule and duration of Design Assist will be coordinated and dictated by the Construction Manager.
3. Subcontractor shall be responsible for all permitting activities and permitting costs for the tunnel scope of work.
4. Subcontractor acknowledges that S. Limestone is US Highway 27 and will comply with all necessary regulations related to working alongside and under the street. Tunneling operations shall limit impact and closure of roadway above to greatest extent possible. Subcontractor shall include cost for permits and management of any required road closures.
5. Tunnel is to be designed and built to allow for thermal utility and other utility routing through the tunnel. Required minimum size and capacity for utilities is defined by the Cancer Center Thermal utility Documents.
6. This Subcontractor will provide a design that accounts for the following considerations:
  - a. Dead load of overburden and pavement above
  - b. HS20 highway loading or 250 PSF live load, whichever produces the higher stresses
  - c. Piping loads (see attached piping weights and dimension charts provide by AEI)
  - d. Minimum 60 PSF floor live load in addition to the piping loads
7. Subcontractor is prohibited from providing two smaller tunnels in lieu of one single tunnel sized for the full required pipe capacity.
8. Subcontractor shall provide a continuous walking 'flat' walking surface in event that they determine a circular tunnel is preferred installation method. Additionally, if a round tunnel is provided, a pipe support system must be supported by the tunnel contractor to allow for a round or rectilinear tunnel to be 'cost neutral' on pipe supports
9. Subcontractor to design and build tunnel inclusive of all code requirements for safe and functional use for the Owner, including but not limited to ventilation and illumination. Utilities passing through, but not serving the tunnel, are to be by others. Utilities serving the tunnel are to be by this Subcontractor. Electrical connections of the tunnel to campus electrical grid to be by others.
10. Subcontractor shall design and build tunnel to provide OSHA minimum lighting levels during

construction and as permanent installation.

11. Subcontractor shall define and call out any requirements for mechanical, plumbing, or electrical connections that must pass through or be supported by the adjacent vaults.
12. Subcontractor to design and build the tunnel structure to account for installation of steel supports and must be designed for the full loading of the tunnel.
13. Subcontractor shall provide their own survey and layout.
14. Subcontractor is responsible for coordinating and working with adjacent subcontractors while Cancer Center construction is ongoing. Subcontractor to be provided a defined work area as much as is feasible. Refer to Site Logistics Plan.
15. Subcontractor shall be wholly responsible for establishing and maintaining the work area on the east side of S. Limestone during the duration of their activities. This will include but is not limited to: fencing, SWPPP, regulatory signage, dumpsters, jobsite toilets, and street cleaning.
16. Subcontractor, at their exclusive discretion, may lay stone haul roads or other means of establishing a solid working surface. Subcontractor shall remove material placed for haul roads.
17. Subcontractor will haul manage their own spoils. Subcontractor shall maintain spoil removal and stockpile on a continuous basis At no time will there be more than 40 yards of spoils stockpiled.. If sufficient area is provided for subcontractor to establish a stockpile, Subcontractor shall be responsible for SWPPP implications of the stockpile, including stabilization and dust control.
18. Subcontractor shall provide protection and barriers safeguarding any excavations or hazards created by this Subcontractor. Subcontractor shall provide the labor, material and equipment to protect each excavation where a fall hazard is created.
19. Subcontractor has read and understands the subsurface investigation reports and their addenda and has included all provisions required to complete the work of this subcontractor.
20. Subcontractor is responsible to verify all site conditions, your work and staging areas, and notify Contractor of any discrepancies, prior to commencing any work on the site.
21. Subcontractor shall locate all existing underground utilities before disturbing any earth. Any locations within approximately 5' of existing utilities shall be exposed by hand digging or hydro-vac, in order to accurately locate the utility, prior to the main excavation beginning.
22. Subcontractor is responsible for developing a logistics plan clearly identifying required staging, laydown, equipment and storage, fuel tanks, conex boxes and delivery requirements.
23. Subcontractor is to coordinate with the Contractor additional space on site required for complete installation. All equipment, tanks, storage boxes, stockpiles and truck deliveries will be coordinated and approved by the Construction Manager
24. Subcontractor is responsible for all pumping of all water and dewatering of their own excavations in accordance with SWPPP plan and as required to perform the work of this subcontractor.
25. Subcontractor's contract is established on a lump sum basis. Geotechnical information has been provided to assist bidders in determining the requirements and likely depth of the tunnel. Subcontractor shall be responsible for collecting their own supplemental geotechnical information as needed for their design and construction activities. Subcontractor shall be responsible for all excavation for the tunnel and pits on either side of Limestone Ave. Excavation shall be, at minimum, sized to also allow for construction of the vaults on each end of the tunnel. If pits exceed the size required for the vaults, the pits shall be backfilled with suitable materials. This shall be coordinated with the Construction Manager.

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26. Subcontractor shall furnish and install all concrete and reinforcing required to complete the tunnel. The Cast In Place tunnels and vault on either side of the tunnel are to be designed and built by others. However, Subcontractor shall coordinate with Construction Manager and provide any rebar required to allow the Cast in Place tunnels and vaults to connect to, with the required lap length.
  27. Subcontractor shall coordinate design requirements of the tunnel with the design of the vaults on each end of the tunnel
  28. Subcontractor shall coordinate construction activities with subcontractors responsible for completion of the end vaults.
  29. Subcontractor shall furnish and install all waterproofing for the tunnel. Waterproofing system shall be coordinated with the waterproofing requirements for the vaults. Subcontractor to assist in design of the vaults' waterproofing and structure to connect with the tunnel for a complete and continuous system.
  30. Subcontractor shall, following completion of the vaults, be responsible for backfill of the excavation. Backfill material shall be compliant with requirements of the Geotech report. Backfill against the tunnel or vaults shall be drainable media.
  31. Subcontractor shall be responsible for restoration of planting/landscaping, road, sidewalk, or other surface disturbed for work east of S Limestone. West of S Limestone Subcontractor is responsible for restoring all surfaces outside of the construction fence line that are disturbed. Inside of the construction fence subcontractor shall backfill up to adjacent surfaces.
  32. Subcontractor shall provide temporary support for any underground utilities exposed or undermined during the tunnel or excavation work. This support shall be an engineered system and include project specific drawings and calculations.
  33. Subcontractor is responsible for their own noise, equipment exhaust, and dust control. Subcontractor is to understand the fresh air-intakes of the adjacent hospitals, residential housing, university laboratories, and medical office buildings. This Subcontractor will provide the labor, material, and equipment for additional measures to mitigate noise, dust, and diesel exhaust. These measures include but are not limited to water trucks, charcoal filters on fresh air intakes, scrubbers on all diesel exhaust, etc..."
    - a. Equipment shall be Tier IV or have air scrubbers installed on equipment exhaust.
    - b. Dust control shall be per OSHA standards for silica control.
    - c. Noise restrictions to be per local requirements and project general conditions.
  34. Subcontractor shall be cognizant of, and comply with all federal, state, and local air pollution and noise regulations, FAA lighting and height limit requirements on cranes throughout the life of the Project. Subcontractor is to include the requirement of providing current inspection and maintenance records for all cranes/lifts to be used on the site prior to mobilization on site. Weekly reports on crane/lift maintenance will be required. Subcontractor shall provide proof of training for all qualified signal and qualified rigging personnel.
  35. Subcontractor shall be responsible for storing, filtering, and removing any slurry water or water generated during tunnel operations and concrete installation process. Any water storage tanks or pits shall be coordinated with and approved by the Construction Manager.
  36. Subcontractor shall protect their excavations from weather impacts prior to placement of concrete and fill material.
  37. Subcontractor shall provide all requirements for cold or hot weather concrete operations and all

necessary temporary protections for their excavations and installations.

38. Subcontractor shall maintain safe access and egress to the UK Agriculture Building.
39. Subcontractor shall maintain a means of fire department access to FDC connection for the UK Agriculture Building. This is located on the South East Corner of hexagonal section of the building. Approximate location is called out on the Logistics plan.

#### Earth Retention Systems

40. Subcontractor shall be responsible for the design, installation, and maintenance of temporary earth retention systems as required to complete the scope of work.
  - a. Subcontractor is to remove from site ERS spoils.
  - b. Subcontractor is to check the settlement of the backfill material behind ERS and make corrections as necessary.
  - c. Subcontractor shall demolish the top 4' of earth retention systems based on final design elevations for the site.
41. Subcontractor acknowledges vehicles and other trades will have operations in areas surrounding the excavations. Construction vehicles will be driving on the retained earth and subcontractor will design their system accordingly.

### **8. SPECIFIC EXCLUSIONS:**

The following work is specifically excluded from this Subcontract Agreement and is not a part of this Agreement and/or will be performed by others as noted:

1. Design and Construction of Cast in Place concrete vaults on either end of tunnel.
2. Utilities passing through tunnel servicing other structures.
3. Steel utility supports within the tunnel.
4. Relocation of existing Utilities

### **9. SAFETY:**

1. All personnel are to have an OSHA 10 or higher certification, supervisor to have OSHA 30.
2. The existing adjacent buildings are operational. All equipment used at the site shall be equipped with exhaust scrubbers to reduce carbon and CO2 emissions. All equipment, including trucks, (regardless of use) shall be shut off if it appears that more than 5 minutes of idle time will be encountered.
3. Subcontractor's personnel shall be fully trained in confined space work. The Underground workers safety training per subpart S
4. Subcontractor shall provide protection of all adjacent surfaces as required and provide all necessary precautions to eliminate endangerment related to their scope of work.
5. Subcontractor shall provide for, at minimum, twice a week visits by a non-working safety supervisor for the duration of the subcontractor's work on site. Safety Supervisor to provide reports to CM of observances of the subcontractors safe work practices. Each visit shall be for 8

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hours per day and safety supervisor is to Check in and coordination with Contractors on-site safety manager.

6. Subcontractor to provide air monitoring of tunnel at all times. ~~It~~ If natural gases reach a hazardous level, subcontractor shall stop work and notify contractor immediately.
7. Subcontractor shall design and implement a rigorous confined space safety program.
8. Subcontractor shall design, and be continuously ready to implement, a rescue plan in case of collapse of the excavation.
9. Subcontractor will share the building pad with other trades for portions of their scope of work and shall coordinate safe access and workspace with other contractors on site.
10. Subcontractor shall setup, maintain, and remove appropriate controlled access zones during operations of this subcontractor. CAZ shall be utilized where operations pose hazards to people adjacent to operations of this Subcontractor.
11. Subcontractor shall provide, at the top of their excavation's, full fall protection systems.
12. Subcontractor acknowledges blasting is prohibited.
13. Subcontractor shall provide all required means of egress from the tunnel and excavations.

## **10. QUALITY:**

1. Subcontractor shall provide all quality control for their scope of work per the contract documents.
2. Subcontractor shall protect subgrade during intervals of wet work. Additional stone or timber mats as required to protect subgrade is the responsibility of this subcontractor.
3. This Subcontractor shall employ a full-time, on-site quality control representative to verify and report all quality control installation procedures per the Contract Documents. This full-time quality control representative can be a working supervisor.
4. Subcontractor to provide labor, material, and equipment to install all reinforcing steel for tunnel as required. Subcontractor to provide concrete placement plans to the Contractor five (5) days prior to any concrete placement. Subcontractor is to provide concrete washouts for own work. Pump placement to be included in logistics plan provided by Subcontractor.
5. This Subcontractor shall coordinate with the Owner's testing agency as required per the Specifications; this includes but is not limited to: providing proper cylinders and test boxes per applicable ASTM sections. In the event that a test should fail, this Subcontractor shall either remove and replace the represented work, or repair the represented area as directed by the Structural Engineer and Architect. All cost associated with additional testing and rework shall be the responsibility of this Subcontractor.

## **11. SCHEDULE:**

1. Subcontractor shall be responsible for design, permitting and construction of the tunnel in a manner to support the overall project schedule and specifically completion of the thermal utilities to activate the Cancer Center MEP systems.
2. Subcontractor shall provide for 10-hour days as typical through the length of operations.
3. Subcontractor to provide labor, equipment, mobilizations, and Saturday workdays as possible to

maintain the project schedule as specified within this document. Weather days are to be factored into provided schedule.

- a. Subcontractor is to include a minimum of 4 Saturdays with a full working crew.
  - b. Subcontractor is to provide a detailed manpower loaded schedule
2. Subcontractor shall assume a separate mobilization for backfill and partial demolition of any earth retention systems.

**12. COORDINATION:**

- 1. Subcontractor shall coordinate with sitework/excavation, concrete, earth retention, and underground MEP subcontractors for sequence and available work areas.
- 2. This subcontractor shall comply with wheel wash protocol and all SWPPP / erosion control procedures. Failure to follow wheel wash protocol will be the responsible of this subcontractor for cleaning of truck tires leaving the site, and street cleaning if applicable for dirt / mud tracked to streets by this Subcontractor. Subcontractor shall have readily available, mud / dirt removal equipment such as skid steers, power brooms, front loaders, dump trucks, and other satisfactory (to the Contractor) means to control mud / dirt.

**13. ALTERNATES, ALLOWANCES, and UNIT PRICES:**

The following items are considered to be fully loaded including but not, but are not limited to, labor, burden, insurance, transportation costs, small tools, incidentals, escalation, overhead, profit, etc.:

This section will be populated, as applicable, with information as submitted on Bid Form.

**14. HOURLY RATES:**

The following hourly rates are fully loaded rates that include, but are not limited to, labor, burden, insurance, transportation costs, small tools, incidentals, escalation, overhead, profit, etc.:

| Worker Category | Straight Time | Premium Time | Double Time |
|-----------------|---------------|--------------|-------------|
|-----------------|---------------|--------------|-------------|

This section will be populated with information as submitted on Bid Form.

**15. PAY APPLICATION PROCESS AND COST ITEMS:**

- 1. No additional requirements other than shown in Exhibit B.1 and in all other parts of the Contract.

**16. CLOSEOUT AND WARRANTIES:**

1. No additional requirements other than shown in Exhibit B.1 and in all other parts of the Contract.

### **18. ACCOUNTING BREAKDOWN OF CONTRACT AMOUNT:**

The Contract Sum shall be the addition of a base bid amount plus Allowances and Funds. It is expressly understood and agreed that all Allowance work and Fund work will be completed within the original schedule. Progress Payments will be made against Allowance and Fund expenditures, based on approved monthly invoices & written Allowance and Fund Authorizations from Walsh. Any unused Allowance amounts and Fund amounts remaining in these Allowances and Funds will be credited back to the Project.

The Subcontractor shall manage all Allowances and Funds and include an Allowance and Fund status report (based on progress of the work up to the current pay application) with each monthly pay application showing at a minimum;

1. the total amount of the Allowance, Allowance consumed, Allowance remaining, anticipated change in total Allowance.
2. total amount of the Fund, Fund consumed, Fund remaining, anticipated change in total Fund.

Lump Sum Allowances: Only direct Labor, Material, and Equipment costs authorized in writing by Walsh after approval by the Owner are to be charged to the Allowance. The Subcontractor's cost for all overhead and profit on the allowance Amount shall be included in the base bid amount and not in the Allowance amount.

Unit Price Allowances or Funds: Only unit quantities, authorized in writing by Walsh after approval by the Owner are to be charged to the Allowance or to the Fund. The Subcontractor's cost for all overhead and profit on the Allowance amount or Fund amount shall be included in the base bid amount and not in the unit price.

Lump Sum Funds: Only direct Labor, Material, and Equipment costs authorized in writing by Walsh are to be charged to the Fund. The Subcontractor's cost for all overhead and profit on the Fund amount shall be included in the base bid amount and not in the Fund amount.

Unit Price Funds: Only unit quantities, authorized in writing by Walsh are to be charged to the Fund. The Subcontractor's cost for all overhead and profit on the Fund amount shall be included in the base bid amount and not in the unit price.

| Number | Description: | Amount/Quantity |
|--------|--------------|-----------------|
| 1      |              |                 |

**This section will be populated with information from the "Bid Breakdown Form"**