Data Service Center

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September 12, 2016

RE: BID Number: **4-17-21**

BID Title: **McCullough Planetarium Renovations – Colonial School District**

Date/Time of BID Opening: **October 5, 2016 at 2:00 PM**

The Central Bidding Department of the Colonial and Red Clay Consolidated School Districts will receive sealed proposals for the above referenced bid until the time and date stated above when they will be publicly opened in the Office of the Manager of the Central Bidding Department, 168 S. Dupont Highway, New Castle, DE 19720.

Enclosed are General Instructions to Bidders and Specifications, which I strongly encourage you to be fully aware of when submitting a proposal. **The enclosed Proposal Form & Bid Forms must be used in submitting a proposal.** The General Instructions to Bidders, Special and/or Specifications are to be returned only if you wish to take exception to anything contained therein. You should retain these documents (or copies) for information in the event you are a successful bidder.

If you have any questions concerning the enclosed information, please contact me.

Sincerely,

Emily Ryan

Emily L. Ryan
User Support Analyst
Central Bidding Department

DATA SERVICE CENTER

CENTRAL BIDDING DEPARTMENT

COLONIAL SCHOOL DISTRICT
RED CLAY CONSOLIDATED SCHOOL DISTRICT

GENERAL INSTRUCTIONS TO BIDDERS

THE GENERAL RULES AND CONDITIONS WHICH FOLLOW APPLY TO ALL PURCHASES AND BECOME A PART OF EACH CONTRACT OR PURCHASE ORDER. BEFORE SUBMITTING ITS BID, THE BIDDER MUST REVIEW ALL INSTRUCTIONS AND SPECIFICATIONS. A BIDDER'S MISINTERPRETATION OR IGNORANCE OF SUCH INSTRUCTIONS OR SPECIFICATIONS WILL NOT EXCUSE THE BIDDER FROM COMPLYING WITH THE INSTRUCTIONS AND SPECIFICATIONS. THE BIDDER MUST ALSO REVIEW APPLICABLE STATE LAWS. IF THESE INSTRUCTIONS OR THE BID SPECIFICATIONS ARE INCONSISTENT WITH STATE LAW, STATE LAW SHALL CONTROL.

NOTE: "District(s)" refers to the Colonial and Red Clay Consolidated School Districts, individually or collectively as indicated in the Special Instructions or Specifications.

1. BID PROPOSALS

Use the enclosed Proposal Form in submitting a Bid Proposal. The Bid Proposal must be dated and signed by an authorized representative of the bidder. A Request for Bids for Red Clay Consolidated, and/or Colonial School Districts received from any source other than the Central Bidding Department may not be complete or current. When you are made aware of an existing Request for Bid, you should contact this office for the bid documents.

All Bids must, prior to the time set for the public opening, be returned to the Data Service Center, Central Bidding Department, 168 S. Dupont Highway, New Castle, DE 19720, in the enclosed pre-addressed envelope with the bidder's name, bid number, and time and date of the bid opening appearing on the envelope. All bids must be in sealed envelopes.

2. "RFP" - REQUESTS FOR PROPOSALS

When the use of competitive sealed bidding is either not practicable or not advantageous to the District, a procurement may be effected after receipt of a response to a "Request For Proposal" ("RFP"). The "RFP" differs from a "Bid" in that offerors submitting proposals may be afforded an opportunity to discuss and revise proposals. Revisions may be permitted after submissions of proposals and prior to award for the purpose of obtaining best and final offers. Negotiations may be conducted with responsible offerors who submit proposals reasonably likely to be selected for award.

The contents of any proposal shall not be disclosed so as to be available to competing offerors during the negotiation process. The award shall be made to the offeror(s) whose proposal is most advantageous to the District(s), taking into consideration the evaluation factors set forth in the RFP. The award may be made upon criteria which do not include price.

3. PRE-BID MEETINGS

In the case of any public works contract for the construction, re-construction, alteration or repair of any public building or other public improvement of any District, there shall be a meeting of all prospective bidders and of the District called by the District upon reasonable notice and at a place and time stated in such notice which meeting shall be at least 15 days before the date for the submission of bids (29 § 6962(d)(10)a Delaware Code).

Pre-bid meetings for non-public works contracts and for public works contracts that do not exceed $50,000 in value, and attendance requirements for such meetings, shall be at the discretion of the District(s).

4. DELIVERY OF BID PROPOSALS

Sealed Bid Proposal must be received in the Central Bidding Department, 168 S. Dupont Highway, New Castle, DE 19720, prior to the time set for the Bid Opening. It is the responsibility of the Bidder to make certain that the Bid Proposal is in the Central Bidding Department prior to the time set for the Bid Opening. The District(s) accepts no responsibility for any bid entrusted to the United States Postal Service, or any other delivery service or company. Bid Proposals not received in the Central Bidding Department by the time set for the Bid Opening will not be considered.

5. BID OPENING

Bids will be publicly opened in the Office of Central Bidding, Data Service Center, 168 S. Dupont Highway, New Castle, DE 19720 or other designated location at the time designated on the Proposal Form, and in the Advertisement for Bids. The purpose of the opening is to reveal the names of those bidders submitting proposals. The opening is not to serve as a forum for determining the responsiveness of each bid, or the apparent low bidder. Additional information shall be disclosed at the discretion of the Districts.

The contents of any "Request For Proposal" will not be disclosed at an opening so as not to interfere with the negotiation process. Only the names of those submitting proposals shall be revealed.

6. POLICY AND PROCEDURE FOR THE EXAMINATION AND COPYING OF PUBLIC RECORDS

Title 29 § 10003 Delaware Code Freedom of Information Act

(a) All public records shall be open to inspection and copying by any citizen of the State during regular business hours by the custodian of the records for the appropriate public body. Reasonable access to and reasonable facilities for copying of these records shall not be denied to any citizen. If the record is in active use or in storage and, therefore, not available at the time a citizen requests access, the custodian shall so inform the citizen and make an appointment for said citizen to examine such records as expediently as they may be made available. Any reasonable expense involved in the copying of such records shall be levied as a charge on the citizen requesting such copy.

(b) It shall be the responsibility of the public body to establish rules and regulations regarding access to public records as well as fees charged for copying of such records. (60 Del. Laws, c. 641 § 1.)

A. Examination of Contract File

Any citizen of the State or bidder may review the contract file only after making an appointment to do so with the Central Bidding Office. Requests to review the records during an unannounced office visit may be denied if department personnel are busy, or if the file is in active use. Trade secrets and commercial or financial information of a privileged or confidential nature shall not be deemed public.

B. Requests for Bid Tabulations

Copies of a bid tabulation may be obtained from the Data Service Center either by mail after receipt of a written request and a self-addressed and stamped envelope, or by making an appointment to pick up copies that will be left at the Receptionist's desk. Bid tabulation and/or contract information other than the name of the successful bidder will not be given out over the telephone. Requests for bid tabulations during an unannounced office visit may be denied if work flow of department personnel will be disrupted.

C. Copying Fees

The Data Service Center reserves the right to charge a reasonable fee for the copying of any public record. Such charges must be paid to the Data Service Center prior to receiving the copies.

7. STATUS OF PROPOSALS

A. Unless otherwise stated in the Special Instructions or on the Proposal Form, the Proposal submitted by bidders shall be binding for a period of 60 days from the date the bids are opened. Requests for Proposals shall be binding for a period of 90 days.

B. Bids may be withdrawn up to the time of the bid opening upon request of the bidder. Such a request must be in writing and received by the Manager of Central Bidding prior to the time stated for the bid opening. Timely requests submitted by facsimile or telegram will be honored.

C. Waiver - The District(s) reserves the right to waive any failure to conform to the instructions or specifications if the waiver: (1) does not involve a mandatory statutory requirement; (2) does not provide a competitive advantage to one or more bidders; and (3) is in the best interest of the District(s).

D. Bidders may take exception to the terms and conditions of the instructions and/or specifications. Exceptions must be submitted prior to the opening of bids. Exceptions that do not conform to State bid law and/or create inequality in the treatment of bidders will be rejected. The bid of a bidder taking exception may be rejected if the District(s) rejects the exception.

8. AWARDING OF BIDS

A. The District(s) reserves the right to award the bid to the lowest qualified bidder meeting specifications by item, in total, or any other method, whichever is deemed by the District(s) to be in its best interest.

B. The District(s) reserves the right to award the bid to 2 or more firms if the advertisement for bids notifies bidders of the right of the District(s) to make such an award and the criteria for such an award.

C. The District(s) reserves the right to reject any and all bids, in whole or in part, to make partial awards, to waive any irregularity, to reasonably increase or decrease quantities where estimated quantities are shown or where definite quantities are shown, and may reject any bid which indicates any omission, contains alteration of form or additions not requested or imposes conditions, or where the individual bidder should receive a total award of less than $500.00, or offers alternate items, and make any award which is deemed to be in the best interest of the District(s).

D. In the event of tie bids, the District(s) will decide which bidder is to be awarded the contract by any criteria of its choice.

E. The contract shall be awarded by the District(s) and it's Board(s) within 60 days after the opening of bids. Failure to do so shall be cause for rejection of all bids. Responses to Requests for Proposals shall be awarded within 90 days after the opening of Proposals. Failure to do so shall be cause for rejection of all proposals.

9. BID DEPOSIT

All bid deposits are waived for contracts valued at less than $25,000.00. Deposits are required for contracts for materials or services in excess of $25,000.00 unless the bid specifications state that bid deposits are waived. All public works contracts in excess of $50,000.00 require a deposit. All bids shall be accompanied with a deposit of either a good and sufficient bond to the State of Delaware for the benefit of the District involved, with corporate surety authorized to do business in this State, for a sum equal to 10% of the bid, or in lieu of the bid bond a security of the bidder assigned to and approved by the District. Bidders are advised that they may obtain written confirmation from the Data Service Center for the acceptance of a security deposit other than a bond, prior to the submission of the bid. The bid bond need not be for a specific sum but may be stated to be for a sum equal to 10% of the bid to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. All bidders shall submit a separate bid deposit for each proposal. Where all four (4) Districts are named in a proposal, a single bid deposit drawn to the order of the Brandywine School District, will be acceptable. Upon the execution of a formal contract and necessary bonds, the bid deposit will be returned to the successful bidder. The deposit of the unsuccessful bidders will be returned to them immediately upon the awarding of the contract, or the rejection of all bids.

10. FORMAL CONTRACT AND/OR PURCHASE ORDER

A. The successful bidder shall execute the formal contract, and also the required bonds, within twenty (20) days after the award of the contract. In the event any successful bidder refuses or neglects to execute a formal contract or required bond within (20) days of the awarding of the contract, the bid deposit of the successful bidder may be taken and become the absolute property of the State for the benefit of the named District(s), as liquidated damages, and not as a forfeiture or as a penalty, and shall be deposited with the State Treasurer, and the District(s) will award Contract to the next lowest bidder or re-advertise for new bids. The District(s) will proceed to collect on the bid deposit. The District(s) waives all formal contracts on contract awards of less than $5,000.00; the obligations of the bidder shall be set forth in the bid specifications, these General Instructions, and any special instructions. No bidder or Vendor is to begin any work until it receives a State of Delaware Purchase Order signed by two authorized representatives of the District(s), properly processed through the State of Delaware Accounting Office. The Purchase Order shall serve as the authorization to proceed with work in accordance with the bid specifications and the special instructions.

B. The formal contract or purchase order shall incorporate by reference these General Instructions, as well as the Special Instructions and Specifications and the bidder's Proposal.

C. If a bid is submitted to more than one District, each such District awarding the bid shall enter into a separate contract with the low, qualified bidder.

11. PERFORMANCE AND PAYMENT BONDS

A. Performance and payment bonds are required for materials or non-professional service contracts, unless reduced or waived as stated in the bid specifications. Contracts for less than $25,000 may contain a waiver of the bond requirement provided the successful vendor posts with the State an irrevocable letter of credit or other suitable or readily collectible financial security for the project. Such letter of credit or other security shall be issued for a term commencing simultaneously with the execution of the formal contract and terminating no later than 3 years, subsequent to the date of delivery of such material or non-professional service or to the extent of the warranty period, whichever is greater. In no event shall such security expire without the express written approval of the State. When required, the successful bidder shall simultaneously with the execution of the formal contract, execute a good and sufficient Performance and Labor and Materials bond to the State of Delaware for the benefit of the District(s), with corporate surety authorized to do business in this State, in a sum equal to 100 percent of the contract price.

B. Performance and payment bonds are required for public works contracts. The successful bidder shall simultaneously with the execution the formal contract, execute a good and sufficient Performance and Labor and Materials Bond to the State of Delaware for the benefit of the District(s) with corporate surety authorized to do business in this State, in a sum equal to 100 percent of the contract price. Contracts may contain a waiver of the bond requirement, provided, however, that the successful bidder post with the contracting Agency an irrevocable letter of credit or other suitable or readily collectible financial security for the project. Such security shall be subject to the terms and conditions of the contracting District.

C. The bond when required shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal and specifications at the time, and in the manner prescribed by the contract and specifications including the payment in full to every person furnishing materials or performing labor in the performance of the contract, of all sums of money due him for such labor or materials. The bond shall also contain the successful bidder's guarantee to indemnify and save harmless the State and the District(s) from all cost, damages, and expenses, including attorneys fees, growing out of or by reason of the successful bidder's failure to comply and perform the work and complete the contract in accordance with the contract.

D. The District(s) will, when it considers that the interest of the State so require, cause judgment to be confessed upon the bond. All sums received through confession of judgment shall be paid to the State Treasurer for the credit of the District(s).

E. Every person furnishing materials or performing labor under the contract for which the successful bidder is liable may maintain an action on the bond for the subcontractor's or supplier's own use in the name of the State, in any court of competent jurisdiction, for the recovery of such sum or sums as may be due such person from the successful bidder, but if the bond so provides, no suit shall be commenced after the expiration of one (1) year following the date on which the successful bidder ceased work on the contract. Otherwise, suits may be commenced at any time within three (3) years following the date the last work is done on the contract.

F. The performance and payment bond shall include a provision that the Surety shall have the right to participate in any arbitration proceeding which may involve liability under the bond, and that the arbitration award in any such arbitration proceeding shall be binding on the Surety.

G. No person or surety, in any action brought under this section, or on the bond required by this section, shall assert as a defense to such action, the claim that the bond given pursuant to this section contained a limitation or restriction not provided for by this section.

12. FAILURE TO COMPLY WITH CONTRACT: NEW AWARD: SUPERVISION

If any person entering into a contract under the authority of this chapter neglects or refuses to perform it or fails to comply with the terms thereof, the District(s) will terminate the contract and proceed to award a new contract in accordance with the provisions of Chapter 69, Title 29 of the Delaware Code, or may require the surety on the performance bond to complete the contract in accordance with the terms of the performance bond.

Should a contractor/supplier fail to perform under the conditions of this contract, the District(s) reserves the right to purchase the item or items on the open market and charge to the contractor/supplier or deduct from any monies owed the contractor/supplier, the difference between the bid price and the purchase price. However, no such action will be taken without first notifying the contractor/supplier by certified letter and giving him reasonable time to reply, but in no event longer than 10 days from the mailing of the certified letter. Failure to supply items as bid may be cause for removal of a bidder from our vendor bid list.

13. CONTRACT FOR PUBLIC BUILDINGS: LISTING SUBCONTRACTORS: BIDDER AS SUBCONTRACTOR: SUBSTITUTION OF SUBCONTRACTORS: PENALTIES: SUBCONTRACTING LIMITATION

Any public works contract, the probable cost of which exceeds $100,000, for the construction, reconstruction, alteration, or repair of any public building of the State or any agency or governmental unit within the State, shall, in addition to the other requirements of this chapter by subject to the following provisions.

A. Such contract shall be awarded only to a bidder whose bid is accompanied by a statement containing for each subcontractor category set forth in the "listing" as provided in §6962(d)(10) of this Chapter, the name and address (City or Town and State only - Street Number and P.O. Box addresses not required) of the subcontractor whose services he intends to use in performing the work or in performing the work and providing the material, for such subcontractor category. No bidder for such a contract shall list himself in any accompanying statement as the subcontractor of any part of the public building unless the bidder, in addition to being licensed as a contractor of the State, shall also be recognized in the industry not only as a prime contractor but also as a subcontractor or contractor in and for any such part of parts of such work so listed in such accompanying statement.

B. Neither the State nor agency nor governmental unit shall accept any bid for such a contract or award any such contract to any bidder, as the prime contractor, if the bidder has listed himself as the subcontractor for any subcontractor category set forth on the "listing" as provided in §6962(d)(10) of this Chapter, unless it has been established to the satisfaction of the awarding agency that the bidder has customarily performed the specialty work of such subcontractor category by artisans regularly employed by the bidder in his organization, that the bidder is duly licensed by the State to engage in such specialty work, if the State required such licenses and that the bidder is recognized in the industry as a bona fide subcontractor or contractor in such specialty work and subcontractor category. Illustrative only (and not intended to be exhaustive) of typical subcontractor categories involving their own respective types of specialty work, are plumbing, electrical wiring, heating, roofing, insulating, weather-stripping, masonry, bricklaying, and plastering. The decision of the awarding agency as to whether a bidder who lists himself as the subcontractor for a subcontractor category set forth in the "listing" as provided in §6962(d)(10) for such subcontractor category, shall be final and binding upon all bidders, and no action of any nature shall lie against any awarding agency because of its decision

in this regard.

C. After such a contract has been awarded, the successful bidder shall not substitute another subcontractor for any subcontractor whose name was set forth in the statement which accompanied his bid without the written consent of the agency awarding the contract. No agency shall consent to such substitution unless the agency is satisfied that the subcontractor in question whose name is listed in the successful bidder's accompanying statement (1) is unqualified to perform the work required, or (2) has failed to execute a timely reasonable subcontract, or (3) has defaulted in the performance of the part of the work covered by the subcontract, or (4) is no longer engaged in such business.

D. Such a contract shall contain a provision for withholding from or requiring the payment by, the successful bidder of a penalty, the amount to be determined by the agency, for the failure to utilize any or all the subcontractors set forth in the successful bidder's accompanying statement in the performance of the work on the public building contemplated by the contract. Any sum so withheld from or paid by the contractor for any such failure may be remitted or refunded, in whole or in part, by the agency awarding the contract, but only in the event it is established to the satisfaction of the agency, that the subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted under this section unless application therefore is filed within one year after the liability of the successful bidder accrues. If any such application for refund of any sum paid as a penalty is denied, or if no application for refund is filed within the period provided herein for filing an application, such sum shall revert to the State.

E. Any contract for a public works project may include a provision that the successful bidder on a specialty contract perform, at a minimum, a fixed percentage of the work up to 50% of the total contract bid. Factors to be considered by the awarding agency in setting the required percentage of amount of work the successful bidder must perform may include the degree of difficulty involved in the agency's administration of the work covered under the terms of the contract; the degree of specialty work contemplated in the contract and the time period required in which to complete the public works project. The terms of the contract shall so specify reasons for the stated percentage in its general terms and conditions.

14. WAGE PROVISIONS IN PUBLIC CONSTRUCTION CONTRACTS FAILURE TO PAY PREVAILING WAGE RATES: PENALTY

A. The specifications for every contract or aggregate of contracts relating to a public works project in excess of $100,000 for new construction (including painting and decorating) or $15,000 for alteration, repair, renovation, rehabilitation, demolition or reconstruction (including painting and decorating of buildings or works) to which this State or any subdivision thereof is a party and for which the State appropriated any part of the funds and which requires or involves the employment of mechanics and/or laborers shall contain a provision stating the minimum wages to be paid various classes of laborers and mechanics which shall be based upon the wages that will be determined by the Delaware Department of Labor, Division of Industrial Affairs, to be prevailing in the county in which the work is to be performed. The prevailing wage shall be the wage paid to a majority of employees performing similar work as reported in the Department's annual prevailing wage survey or in the absence of a majority, the average wage paid to all employees reported.

B. Every contract based upon these specifications shall contain a stipulation that the employer shall pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics. The specifications shall further stipulate that the scale of wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work, and that there may be withheld from the employer so much of accrued payments as may be considered necessary by the Department of Labor to pay to laborers and mechanics employed by the employer the difference between the rates of wages required by the contract to be paid laborers and mechanics on the work and rates of wages received by such laborers and mechanics to be remitted to the Department of Labor for distribution upon resolution of any claims.

C. Every contract based upon these specifications shall contain a stipulation that sworn payroll information, be maintained and produced at the request of the Department of Labor.

D. The Department of Labor shall investigate all claims that the prevailing wage rates as provided for under this section are not being or have not been paid. Upon finding that an employer has not paid or is not paying the prevailing wage rates, the Department of Labor shall notify the employer of the violations by certified mail and make an effort to obtain compliance. Upon failure to obtain compliance within 15 days of receipt of said certified mail, the Secretary may terminate all rights of the employer to proceed with the work under the public construction contract, and the employer shall be responsible for all damages resulting therefrom.

E. Any employer who knowingly fails or refuses to pay the prevailing wage rates provided for under this Section, or who fails to submit payroll reports or post notice of the wage rates which apply to the project shall, for each such violation, be subject to a Civil Penalty of not less than $1,000 nor more than $5,000 for each violation. No public construction contract in this State shall be bid on, awarded to, or received by any contractor or subcontractor, or to any person, firm, partnership, or corporation in which such employer has an interest who, within two years after entry of a judgment pursuant to this chapter, is adjudicated in violation of this chapter in subsequent proceeding, until three years have elapsed from the date of the subsequent penalty judgment. A Civil Penalty claim may be filed in any court of competent jurisdiction.

F. Any laborer or mechanic employed by any employer, or the Department of Labor on behalf of any laborer or mechanic employed by any employer, who is paid in a sum less than the prevailing wage rates provided for under this section shall have a right of action against the employer in any court of competent jurisdiction to recover up to treble the difference between the amount so paid and the prevailing wage rate. Such action may be brought by the Department of Labor in the name and for the benefit of the laborer or mechanic with or without an assignment of the claim from the employee, the Department of Labor shall have the power to settle and adjust any such claim to the same extent as would the aggrieved employee. It shall not be a defense to such action that the underpayment was received by the laborer or mechanic without protest. Upon the filing of an action under this section, the employer shall post suitable bond approved by the court for the damages which may be recoverable thereunder. Any judgment entered for plaintiff shall include an award for reasonable attorney's fees and costs of prosecution.

G. Any wages collected under this chapter, but not claimed by the employee within 1 year from the date of collection, shall be retained by the Department of Labor for enforcement purposes.

H. No action to recover wages and damages under this section shall be brought after the expiration of 2 years from the accruing of the cause of action.

I. Whenever any person shall contract with another for the performance of any work which the contracting person has undertaken to perform, he or she shall become civilly liable to employees engaged in the performance of work under such contract for the payment of wages, exclusive of treble damages, as required under this section, whenever and to the extent that the employer of such employees fails to pay such wages, and the employer of such employees shall be liable to such person for any wages paid by him under this Section. If pursuant to this Subsection (I) a person becomes civilly liable to employees of another, such liability shall not constitute a violation of this Section for purposes of the termination, civil penalty and debarment provisions of Subsections (D) and (E) of this Section.

J. A contract manager shall be responsible for monitoring compliance with this Section, but shall not become civilly liable to the same extent as the contracting person. For purposes of this Section, "contract manager" means any person who performs the function of the contracting person without becoming a party to the contract of performance, but rather contracts with the recipient of the goods or services to act as his/her agent. A contract manager who knowingly fails or refuses to monitor compliance with this Section shall, for each such failure or refusal, be subject to a Civil Penalty of not less than $100 nor more than $500. A Civil Penalty claim under this subsection may be filed in any court of competent jurisdiction. A contract manager's liability for a Civil Penalty pursuant to this Subsection (j) shall not constitute a violation of this section for purposes of the termination, civil penalty and debarment provisions of Subsection (D) and (E) of this Section.

15. PREFERENCE FOR DELAWARE LABOR: STIPULATION IN CONTRACT

In the construction of all public works for the State or any political subdivision thereof, or by persons contracting with the State or any political subdivision thereof, preference in employment of laborers, workmen or mechanics, shall be given to bona fide legal citizens of the State, who have established citizenship by residence of at least ninety days in the State. Any person, company or corporation who violates the provisions of this section shall pay a penalty to the Secretary of Finance equal to the amount of compensation paid to any person in violation of this section.

16. NON-DISCRIMINATION

In performing this work the successful bidder agrees to the following:

A. The successful bidder will not discriminate against any employee or application for employment because of race, creed, color, sex, national origin, age or disability. The vendor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex, national origin, age or disability. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

B. The successful bidder will, in all solicitations or advertisements for employees place by or on behalf of himself, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, national origin, age or disability.

17. EQUAL OPPORTUNITY EMPLOYER

The named School District(s) is an equal opportunity employer and does not discriminate or deny services on the basis of race, color, creed, national origin, sex, disability, or age.

18. INSURANCE - LIABILITY

The successful bidder shall maintain, at its expense, the following insurance:

A. Public Liability and Automobile Liability Insurance

1. The policy is to be provided for both the owner and the contractor.

2. Minimum coverage for bodily injury shall be $500,000 for any one individual and $1,000,000 for any one accident.

3. Minimum coverage for property damage shall be $500,000 for any one accident.

4. Policies shall include completed operations, owners and contractors Protective Liability and Contractual Liability coverage, including protection against claims arising out of the activities of subcontractors in the same minimum amounts stated above.

5. If the project involves excavations, deep trenching, or blasting, endorsements to the policy should be obtained to cover these hazards.

6. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days notice prior to cancellation.

B. Builders Risk Policy

1. The builders risk policy shall be an all risk coverage policy.

2. The policy shall be in the name of the owner and prime contractor, jointly, "as their interests may appear."

3. On new construction or complete additions, the policy will be carried on a completed value basis.

4. On renovation projects, the policy will be covered by either an installation floater or a separate policy of sufficient dollar amount to fully cover the cost of the materials stored.

5. If it is your policy to pay for material not stored on the site, either a separate certificate of insurance must be issued or a rider must be added to the existing builders risk policy. The amount of coverage must be sufficient to cover all materials stored off the site.

6. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days notice prior to cancellation.

C. Worker's Compensation Including Employee's Liability

1. Minimum limit on Employee's Liability to be $100,000 minimum limit for all employees working at one site.

2. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days notice prior to cancellation.

D. Boiler Insurance

1. If a new boiler is started prior to acceptance of the installation by the owner, the contractor must carry boiler insurance until acceptance by the owner.

2. Minimum coverage for boiler insurance of bodily injury will be $1,000,000. For property damage the minimum coverage will also be $1,000,000.

3. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days notice prior to cancellation.

Contractor recognizes that it is operating as an independent Contractor and that it is liable for any and all losses, penalties, damages, expenses, attorney's fees, judgments, and/or settlements incurred by reason of injury to or death of any and all persons, or injury to any and all property, of any nature, arising out of the Contractor's negligent performance under this Contract, and particularly without limiting the foregoing, caused by, resulting from, or arising out of any act of omission on the part of the Contractor in their negligent performance under this Contract.

The Contractor shall maintain such insurance as will protect against claims under Worker's Compensation Act and from any other claims for damages for personal injury, including death, which may arise from operations under this Contract. The Contractor is an independent contractor and is not an employee of the State.

During the term of this Contract, the Contractor shall, at its own expense, carry insurance with minimum coverage limits as follows:

	a) Comprehensive General Liability	$1,000,000
and		
	b) Medical/Professional Liability	$1,000,000/ $3,000,000
or	c) Misc. Errors and Omissions	$1,000,000/$3,000,000
or	d) Product Liability	$1,000,000/$3,000,000

All contractors must carry (a) and at least one of (b), (c), or (d), depending on the type of service or product being delivered.

If the contractual service requires the transportation of Departmental clients or staff, the contractor shall, in addition to the above coverage, secure at its own expense the following coverage:

e) Automotive Liability (Bodily Injury) $100,000/$300,000
f) Automotive Property Damage (to others) $ 25,000

Not withstanding the information contained above, the Contractor shall indemnify and hold harmless the State of Delaware, the Department and the Division from contingent liability to others for damages because of bodily injury, including death, that may result from the Contractor's negligent performance under this Contract, and any other liability for damages for which the Contractor is required to indemnify the State, the Department and the Division under any provision of this Contract.

The policies required under Paragraph B3 must be written to include Comprehensive General Liability coverage, including Bodily Injury and Property damage insurance to protect against claims arising from the performance of the Contractor and the contractor's subcontractors under this Contract and Medical/Professional Liability coverage when applicable.

The Contractor shall provide a Certificate of Insurance as proof that the Contractor has the required insurance. The certificate shall identify the Department and the Division as the "Certificate Holder" and shall be valid for the contract's period of performance as detailed in the scope of work to be performed.

The Contractor acknowledges and accepts full responsibility for securing and maintaining all licenses and permits, including the Delaware business license, as applicable and required by law, to engage in business and provide the goods and/or services to be acquired under the terms of this Contract. The Contractor acknowledges and is aware that Delaware law provides for significant penalties associated with the conduct of business without the appropriate license.

19. LICENSES, FEES, PERMITS, TAXES, AND STATE LAWS

In the performance of this Contract the successful Bidder is required to comply with all applicable Federal, State, and Local laws, ordinances, codes, and regulations. The cost of permits, insurance, taxes, and other relevant costs required in the performance of the Contract shall be borne by the successful Bidder. All Delaware Laws in reference to construction shall be as binding as though quoted in full herein and their application shall be fully adhered to by all parties affected hereby. The vendor shall furnish upon request any or all of the referenced items.

All bidders shall be properly licensed and authorized to transact business in the State of Delaware as provided for in Delaware Code Title 30, §2502 and in any and all Delaware Municipalities having jurisdiction to require such licensing within the geographic boundaries of the site(s) where the work is to be performed prior to the execution of any contract resulting from this bid. In the case of contracts in excess of $50,000.00 which are competitively bid, such person shall have initiated the license application procedure required by this subsection with the Division of Revenue prior to, or in conjunction with, the submission of a bid on a contract, or in the case of a subcontractor, prior to the submission of a bid by the general contractor. Proof of such license compliance shall be as determined by the School District(s) or their designee.

All bidders for public works projects shall insure that they have met all general contractor and/or subcontractor licensing requirements in accord with the requirement of Title 29 §6962 prior to submitting a bid.

NOTE: Contractors and subcontractors bonding and licensing requirements were amended by HB585 and as of January 1, 1987, require the following:

A. Bidders shall obtain and comply with the Delaware Department of Revenue's Technical Information Memorandum 88-10 dated December 29, 1986. This Technical Information Memorandum constitutes the Division of Revenue's Regulations with regard to contractor licensing and bonding requirements under the amended statutes. These Regulations are promulgated pursuant to 30 Del. C. §2103(b).

B. 30 Del. C. §375 Requirements:

1. Surety bonds in the amount of 6% of the contract or subcontract price are required for all non-resident contractors for contracts within the State of Delaware in which either:

   (a) The single contract or subcontract totals $20,000 or more; or

   (b) The contract or subcontract is a "cost-plus" contract whose estimated cost-and-profit totals $20,000 or more; or

   (c) The aggregate of two or more contracts or subcontracts in a calendar year totals $20,000 or more.

2. The Division of Revenue will accept cash bonds, which may be paid by check, on contracts not exceeding $100,000.

3. The contractor's bond shall be filed before construction commences on any contract upon which a bond is required pursuant to 30 Del. C. §375, as outlined in Paragraph (a-c) above.

C. For licensing requirements, penalties, definitions, information filing, and other requirements, bidders shall refer to Technical Information memorandum 86-10 and to the referenced sections of the Delaware Code. For additional information call 1-800-292-7826.

20. WAGE SCALE - PREVAILING

When the schedule of prevailing wages is not attached, it is the responsibility of vendors to obtain it from the Delaware Department of Labor, 820 North French Street, Wilmington, DE 19801.

21. PATENTS, TRADEMARKS, AND COPYRIGHTS

The supplier shall hold free of any liability, the School District(s) and the officers and employees, of any costs or expenses arising from patent, trademark or copyright infringement incurred by use of any item supplied or process used in performance of this Contract.

22. COVENANT AGAINST CONTINGENT FEES

The bidder warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon an agreement of understanding for a commission or percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the bidder for the purpose of securing business. For breach or violation of this warrantee the School District(s) shall have the right to annul the Contract without liability or at its discretion to deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage or contingent fees.

23. TAXES - EXEMPT

Since the School District(s) is exempt, prices quoted shall not include Federal taxes or State of Local taxes. Tax Exemption number is 51-6000279.

24. TRADE DISCOUNTS

All prices offered must be lowest net price after trade discounts have been considered. Bids offering a percentage off list prices will not be accepted unless; (1) Specifically requested in that manner; (2) A copy of the referenced price list accompanies the bid.

25. COMMERCIAL WARRANTEE AND GUARANTEE CERTIFICATE

The supplier agrees that the supplies or services furnished under the Contract shall be covered by the most favorable commercial warranties the supplier gives to any customer for such supplies or services and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the District(s) by any other clauses of the Contract. A final payment for performance shall not relieve the successful bidder of responsibility for faulty materials or workmanship.

26. INTERPRETATION OF SPECIFICATIONS

Should any bidder be in doubt as to the intention and meaning of the specifications, he may make inquiry to the Office of the Supervisor of Central Bidding of the District(s). Questions received less than three working days before the opening of bids may not be considered. All questions in order to be considered must be submitted in writing.

27. EXAMINATION OF SITE AND OTHER CONDITIONS BEARING ON THIS WORK

Before submitting proposal, bidders shall fully inform themselves of the nature of the work by personal examination of the site, and by such means as they consider necessary, as to matters, conditions, or considerations bearing on or in any way affecting the preparation of their proposal. A bidder shall not at any time after the submission of his proposal claim that there is any misunderstanding in regard to the location, extent, or nature of the work to be performed. No claims for any extra will be allowed because of alleged impossibilities in the production of the results specified, or because of inadequate or improper plans or specifications, and whenever a result is required, the successful bidder shall furnish any and all extras and make any changes needed to produce, to the satisfaction of the District(s), the required results at no expense to the District(s).

Failure of the bidder to thoroughly understand all aspects of the solicitation before submitting their bid shall not be sufficient cause to permit withdrawal of its bid nor secure relief on pleas of error after the contract is awarded.

28. BRAND NAMES AND APPROVED EQUAL

A. Where a particular manufacturer or several manufacturers, brands or models are referenced, it is to be interpreted as indicating the type or quality of material, and shall be interpreted to include an "approved equal". Bids may be considered on models or brands or products of manufacturers other than those specified if the items being substituted were approved by the designee of the District(s).

B. Where a manufacturer, brand, or model is referenced in the bid specifications, the absence of a reference to a different manufacturer, brand, or model in the bidder's proposal shall be interpreted as a bid on the manufacturer, brand, or model specified. Where several manufacturers or models are referenced as being equally acceptable and the bidder does not indicate what particular model or brand they are offering, the Designee of the District(s) shall have the right to select any brand or model referenced.

Only one bid per item will be considered. If a vendor submits more than one bid on an item, none of the vendor's bids on that item will be considered.

C. The Board of Education of the District(s) shall be the sole judge as to whether or not items submitted meet specifications or whether or not items being bid are equal. Any attempt to "resell" or disqualify other supplies while the proposals are being analyzed may be reason for your bid to be disqualified. If additional information is required, contact the Central Bidding Department.

D. All items furnished under the Contract must be new and unused, latest models (unless otherwise specified) and free from all defects. The foregoing excepts exchange, normal "rebuilt" items, where specified.

29. SAMPLES AND DESCRIPTIVE LITERATURE

A. When requesting approval to bid models, brands or products of manufacturers other than those specified, such a request must be accompanied by catalog cuts and/or detailed specifications. The District(s) may also request bidders to submit samples for examination and appraisal.

B. Requested samples shall be submitted at no cost to the District(s) and may be required by the District(s) either prior to, at the time of the bid opening, or within ten calendar days following the request. Time of submission of samples shall be specified in the specifications. Samples shall be specified in the specifications. Samples not provided as requested, will be reason to reject the bid for that item. All such samples shall be identified as to the supplier, model number, bid item number and

other information that may be required; these samples will be returned after evaluation. Suppliers shall have the responsibility of picking up their samples within two weeks after notification. Samples not removed after two weeks will automatically become the property of the District(s) at no charge.

30. RESPONSIBILITY FOR DAMAGE AND CARE OF SCHOOL PROPERTY

The Supplier in the performance of this Contract will be held financially responsible for any damage to the grounds, buildings, or equipment caused by him, his subcontractors or employees, or other persons engaged in the performance of the Contract.

Every reasonable effort shall be made by workmen to proceed with the work as described in these specifications in a manner accepted in trade circles as the highest level of workmanship. The successful bidder for this work shall be responsible for all damage to other work caused by his workmen or through the neglect of his workmen on the site.

Workmanlike care shall be expected at all times in performing the work. It shall be the responsibility of the successful bidder to repair or replace all damaged property, the damage for which he, or anyone working under his direction is responsible.

31. SUPPLIER CLEAN-UP

All debris resulting from the supplier's delivery and installation shall be disposed of entirely by the supplier in an efficient and expeditious manner as required and directed by the District(s) Designee. The successful bidder shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees or work. District(s)-owned trash receptacles are not to be used by the vendor without prior approval.

32. STORAGE OF MATERIALS

Every effort shall be made by the successful bidder to schedule delivery of materials so that a minimum of storage space is required. The successful bidder shall not encumber the premises with his materials and shall store all materials in a place designated by the Board of Education or its representative. The District(s) will not be responsible for any damage to or theft of tools or materials used in this work.

33. UNPACKING AND ASSEMBLING

All work described in the specifications regarding unpacking, assembling, and placement of all movable furniture and/or equipment must be completed within five (5) days after furniture and/or equipment is received on the site unless prior approval is received.

Any bidder failing to unpack and assemble knockdown equipment and furniture will be charged (deduction will be made from billing) a fee to cover the District's cost of unpacking and assembling.

34. SERVICE

Each bidder may be required to submit a signed statement to the effect he can furnish service by factory trained personnel Monday to Friday during the hours of 8:00 a.m. - 4:00 p.m.

35. SCHEDULE FOR PERFORMANCE OF WORK

All work described in these specifications must be completed with reasonable promptness. The District(s) shall be the sole judge of what is "reasonably prompt" under the circumstances. If the successful bidder does not begin the work in a reasonable amount of time, it will be notified that if it fails to initiate the work promptly, the contract may be terminated and the District(s) will forthwith proceed to collect for nonperformance of the work.

36. ORDERING

All items or services to be furnished under the Contract will be ordered by the issuance of a Purchase Order signed by two authorized representatives of the District(s). This document must be in the hands of the successful bidder prior to any work commencing on the Contract.

37. DELIVERY, INSPECTION, ACCEPTANCE, AND PACKAGING

A. All supplies, materials, equipment, goods, and services are to be delivered postpaid to the location or locations indicated on the Proposal Form, Specifications, or Purchase Order. No labor will be provided to help unload any product under Contract.

B. The delivery of goods or items furnished under the terms of the Contract shall not be considered as acceptance thereof until the goods are inspected. The District(s) shall have a reasonable opportunity to inspect. If, for example, goods are delivered on August 1, the District(s) may not have a reasonable opportunity to inspect such goods until September or October. In all events, shipping invoices or other documents sent with goods shall not be controlling with respect to the timing of inspection. The inspection and test by the District(s) of any supplies or lots thereof does not relieve the supplier from any responsibility regarding defects or other failure to meet the Contract requirements which may be discovered subsequent to delivery. Except as otherwise provided in the Contract, acceptance shall be conclusive except as regards to Patent defects, fraud, or such gross mistakes as amount to fraud.

C. Any item to be supplied as a result of this Contract shall be subject to inspection and test by the Ordering Office, to the extent practicable, at all times and places including the period of manufacture and in any event prior to acceptance.

D. In case any item or lots of items are found to be defective in material or workmanship or otherwise not in conformity with the requirements of the Contract, the Ordering Office shall have the right to either reject them (with or without instructions as to their disposition) or to require their correction. Items or lots of items which have been rejected or required to be corrected shall be removed or, if required by the Ordering Office as they may deem appropriate, corrected in place by and at the expense of the supplier promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If the supplier fails to promptly remove such items or lots of items which are required to be removed, or promptly to replace or correct such items or lots of items, the District(s) either (1) may re-contract or otherwise, replace or correct such items and charge the supplier the cost occasioned the District(s) thereby, or (2) may terminate the Contract for default as provided in the clause of the Contract entitled "Failure to comply with Contract".

E. Acceptance or rejection of any items shall be made as promptly as practicable after delivery, except as otherwise provided in the Contract; but failure to inspect and accept or reject items shall neither relieve the supplier from responsibility for such items as are not in accordance with the Contract requirements nor impose liability on the District(s) therefore.

F. Neither the School District(s) nor other Ordering Office will assume responsibility for damage to any rejected delivery caused by weather, improper warehousing, or mishandling.

G. All outer packs of items delivered under the Contract (except subsistence items delivered to cafeterias) must be marked with the Purchase Order/Contract number and item identification.

Failure to provide adequate identifying markings may result in refusal of the delivery.

H. Unless otherwise stated, all prices include delivery and placement within the ship-to-address in that area specified in the Contract or Purchase Order.

I. Collect shipments will not be accepted.

J. All shipments shall be F.O.B. point of destination as indicated in the Proposal or on the Purchase Order.

38. INVOICES

Invoices must be completely identifiable, supported by delivery receipts where specified, and contain the following minimum information:

1. Purchase Order/Contract number.

2. Delivery destination as it appears on the Purchase Order.

3. Contract item number, quantity and description of item billed.

4. Unit price and extended price of each item.

5. Total amount of invoice.

6. Any prompt payment discount offered.

39. INDEMNIFICATION

By submitting a bid, all bidders agree that in the event they are awarded a contract, they will indemnify and otherwise hold harmless the District(s), its agents and employees from any and all liability, suits, actions or claims, together with all costs, expenses or attorneys' fees, arising out of their performance of work or supplying materials and services in connection with the contract. This agreement to indemnify and hold harmless shall cover all suits, actions, claims or liabilities asserted against the District(s), its agents and employees, regardless of whether such suits, actions, claims or liabilities are based upon acts or failures to act attributable to the District(s) or its employees or agents, to the extent that it shall be also determined that the acts, or failure to act are attributable, in whole or in part, to such bidders or its employees or agents.

40. ASSIGNMENT OF ANTITRUST CLAIMS

As consideration for the award and execution by the Board(s) of this contract, the successful bidder hereby grants, conveys, sells, assigns, and transfers to the State of Delaware all of its right, title and interest in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Board(s) pursuant to this contract.

41. HAZARDOUS MATERIALS

As required in the Hazardous Chemical Information Act of June, 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to each School along with the shipping slips that includes those products.

42. CONTRACT DOCUMENTS

These General Instructions and any Special Instructions, Bid Specifications, Requests for Bid, Bid Proposal Form, Purchase Order, and Contract shall be a part of and constitute the contract entered into by the District(s) and any successful bidder. In the event there is any discrepancy between any of the foregoing contract documents, the following order of documents governs so that the former prevails over the latter: Contract, Purchase Order, Bid Specifications, Special Instructions, General Instructions, Requests for Bid and Bid Proposal Form.

43. THE CONTRACT

This Contract shall be governed by Delaware law, and any dispute concerning the interpretation or application of this Contract, and any documents incorporated by reference into this Contract, or any materials supplied or work performed under this Contract must be heard in Delaware.

44. TRANSFER OF BIDS

The District named in this bid and the successful bidder may reach an agreement to make available to any agency or school district in the State the bid prices submitted for this contract. Where such an agreement exists, the District(s) named shall have access to purchase under the contract.

45. SUPPLIER DIVERSITY

In accordance with Executive Order 44 – the State of Delaware is committed to supporting its diverse

business industry and population. The successful Vendor will be required to accurately report on the participation by Diversity Suppliers which includes: minority (MBE), woman (WBE), veteran owned business (VOBE), or service disabled veteran owned business (SDVOBE) under this awarded contract. The reported data elements shall include but not be limited to; name of state contract/project, the name of the Diversity Supplier, Diversity Supplier contact information (phone, email), type of product or service provided by the Diversity Supplier and any minority, women, veteran, or service disabled veteran certifications for the subcontractor (State OSD certification, Minority Supplier Development Council, Women's Business Enterprise Council, VetBiz.gov). The format used for Subcontracting 2nd Tier reporting is shown as Attachment 9.

Accurate 2nd Tier reports shall be submitted to the contracting Agency's Office of Supplier Diversity at vendorusage@state.de.us on the 15th (or next business day) of the month following each quarterly period. For consistency quarters shall be considered to end the last day of March, June, September and December of each calendar year. Contract spend during the covered periods shall result in a report even if the contract has expired by the report due date.

SPECIAL INSTRUCTIONS

Planetarium Renovations – McCullough Middle School Observatory
COLONIAL SCHOOL DISTRICT
BID # 4-17-21

Scope Of Work

The Colonial School District is seeking bids for the purchase and installation of a replacement digital planetarium system at McCullough Middle School.

Bid Bond

Each bid must be accompanied by a bid security equal to 10% of the bid amount.

Performance Bond

The successful bidder must post a performance bond & payment bond in the sum equal to 100% of the contract price upon execution of the contract.

Award of Contract

This contract may be awarded by line item to the lowest qualified bidder(s), by group to the overall lowest qualified bidder for all of the equipment, or by other methods deemed to be in the District's best interest.

Delivery

All equipment shall be delivered f. o. b. destination to:

McCullough Middle School
20 Chase Avenue
New Castle, DE 19720

Product Substitutions

Alternative manufacturers must submit all necessary evaluation documentation with your bid response. Submittal must include product literature and specification along with notations on how the proposed alternatives performance specification compares to the above specified product. Bidders who furnish bids for alternative products without proper documentation for evaluation will be subject to disqualification.

Cleaning and Clean-up

After the installation of the work is completed, the contractor is responsible for cleanup and restoration of site to return it to condition as it was prior to the commencement of the work

Pre Bid Meeting

There will be a pre-bid meeting on Wednesday, September 21, 2016 at 10:00 AM (EST) at the Data Service Center, 168 S Dupont Highway, New Castle, DE 19720. Attendance is not mandatory but recommended for all prospective bidders.

Prevailing Wage Rates

The submitted bid prices must be utilizing the State of Delaware Prevailing Wage Rates. The current rates are included in the bid package.

Submissions

Vendors are asked to submit three (3) copies of their proposal (one original and two copies). A failure to do so may cause for rejection of your bid.

Questions

All questions may be addressed to Ms. Emily L. Ryan via e-mail at eryan@dataservice.org. All questions and answers will be posted in the State of Delaware's website www.bids.delaware.gov. It will be the vendor's responsibility to check for any updates, Q & A's and/or addendums.

Non-Performance

In the event the contractor does not fulfill its obligations under the terms and conditions of this contract, the Colonial School District may purchase equivalent product on the open market. Any difference in cost between the contract prices herein and the price of open market product shall be the responsibility of the contractor. Under no circumstances shall monies be due the contractor in the event open market products can be obtained below contract cost. Any monies charged to the contractor may be deducted from an open invoice.

Early Termination

The District may terminate this contract at any time. There will be no early termination charges and the District must provide a thirty (30) day written notice to implement early termination.

Contract Period

This contract shall be in effect until October 1, 2017.

Quantities

The quoted quantities are estimates and the District deserves the right to increase or decrease their quantities throughout the term of the contract without any penalties.

Specifications – BID #1

- 30-foot diameter hemispheric projection dome with compoundly curved, powder coated panels and NanoSeam™ panel system (or approved equal), and new cove trough with fascia. Price assumes old dome, trough and cove lighting are demolished/removed by others.

- **Digital Planetarium SciDome IQ 2400 Laser (or approved equal)** Single/center projector (2400x2400 resolution) fulldome system delivering 5000+ ANSI lumens. Newest, phosphor laser projector technology which never needs lamps.
    - Includes:
        - Custom lens,
        - New control desk,
        - Projector stand/cover,
        - Starry Night Dome real-time astronomy software suite,
        - ATM-4 automation software,
        - "Oasis in Space", "From Earth to the Universe", "NASA's Journey to Mars" and "Two Small Pieces of Glass" fulldome shows,
        - Spare lamp and
        - 3 days on-site basic training
        - System also includes *The Layered Earth* Dome interactive software suite for earth science, geologyand geography, the SciTouch hand-held controller, remote diagnostics software, and built-in captioning capability.
        - Package includes six binders of curriculum for live shows and lessons

- **Cove Lighting -** Three-color (RGB) ChromaCove LED 360-degree lighting surrounds 30-foot dome with thousands of colors (additive color mixing). Features:
    - custom dimming curve,
    - low profile,
    - low energy consumption
    - 30,000 – hour life
    - Lighting is controlled via the ATM-4 automation system.

- **Sound System -** Stereo sound system with new mixer and amplifier in SciDome control desk.
    - Four (4) speaker clusters mounted behind dome.
    - Package includes assistive listening system and wired microphone.

Specifications – BID #2

- 30-foot diameter hemispheric projection dome with compoundly curved, powder coated panels and NanoSeam™ panel system (or approved equal), and new cove trough with fascia. Price assumes old dome, trough and cove lighting are demolished/removed by others.

- **Digital Planetarium SciDome IQ 2560 (or approved equal)** Dual projector (2560 x 2560 resolution) digital projection system delivering 5200 ANSI lumens to the dome. Leaves the center of the room open for more seating, or presentation.
    - Includes:
        - Custom lens
        - New control desk
        - Projector mounts
        - Starry Night Dome real-time astronomy software suite
        - ATM-4 automation software
        - "Oasis in Space", "From Earth to the Universe", "NASA's Journey to Mars" and "Two Small Pieces of Glass" fulldome shows
        - Spare lamp and
        - 3 days on-site basic training
        - System also includes *The Layered Earth* Dome interactive software suite for earth science, geology and geography, the SciTouch hand-held controller, remote diagnostics software, and built-in captioning capability.
        - Package includes six binders of curriculum for live shows and lessons

- **Cove Lighting -** Three-color (RGB) ChromaCove LED 360-degree lighting surrounds 30-foot dome with thousands of colors (additive color mixing). Features:
    - custom dimming curve
    - low profile
    - low energy consumption
    - 30,000 – hour life
    - Lighting is controlled via the ATM-4 automation system.

- **Sound System -** Stereo sound system with new mixer and amplifier in SciDome control desk.
    - Four (4) speaker clusters mounted behind dome.
    - Package includes assistive listening system and wired microphone.

Specifications for Digital Planetarium Turn-key Package

Successful bidder shall provide a complete package, with dome and equipment manufactured, installed, integrated and supported by the same company.

1. Projection Dome

   Applies to the manufacture, delivery, and installation of a 30.00-foot inside diameter, 180.00-degree projection dome.

1.0 Work by Dome Contractor

In addition to the engineering design, all labor and materials required for, or reasonably incident to, the manufacture, on-site supervision, and installation of an accurately shaped projection dome shall be included. Upon completion, the dome shall require no further treatment and shall be ready for immediate use.

In-house services shall include as a minimum:

Design and 3D modeling of the dome in conjunction with customer's facility.

Preparation of manufacturing, shop, and installation drawings, including bills of material, shipping documentation, owner's product book, and maintenance manual (documentation available in both paper and electronic formats).

Support from a Project Engineer in coordinating all technical issues with the owner, architect, and general contractor.

Out-of-house services shall include as a minimum:

Supply frame and panel joint samples as required.

Supply powder-coated finish samples including gain curves (zero-degree and multi-degree incident/reflectance measurements).

Installation supervision by dome manufacturing company.

Site visits by Project Engineer in accordance with contract requirements.

Supply a minimum of two (2) full-size, powder coated, spare panels per zone for replacement purposes. Panels shall be factory pre-finished with all other dome panels for exact finish and gain characteristics. All spare panels not used during dome installation shall become the property of the *owner*.

Work by Others – Building Requirements

It is the responsibility of the *owner* to provide the following conditions in order to achieve the completed installation as contracted and in accordance with the contract timetable.

Before installation of the projection dome, the entire room in which the installation is to be made must be clean, free of dust and dust-producing surfaces, and free of debris or other obstacles. Additional completed work shall include, but not be limited to:

Completion of load-bearing supports and/or suspension and lateral tie eyebolts.

Customer to locate dome center point, and 0° forward benchmark.

Catwalks and stairs, if any, completed.

HVAC and filtration systems purged and operational.

Exposed concrete surfaces sealed.

Sound insulation installed.

Speakers hung and positioned (unless speakers are attached to dome or supplied by *dome contractor*). Final positioning not required if catwalks allow access with dome installed.

Electrical work completed.

All surfaces and equipment behind the dome painted flat, matte black per FED STD 595B #37030 or RAL 000 15 00 matte finish (not required if dome has insulation installed to back of panels).

Theater doors installed and kept closed to avoid dirt from entering the chamber.

Once the dome has been installed, carpeting, seating, and other interior finishes, not including drywall and the finishing of drywall, will be completed by others.

No dust-producing activities shall take place in the theater after installation of the projection surface.

Work by Others – Owner Services

Owner shall supply (including installation and removal) all scaffolding necessary to erect the dome. The *dome contractor* will provide drawings to the *owner* showing the layout and makeup of the scaffolding. Scaffold deck, if any, must have a smooth floor to permit rolling of scaffold towers.

Owner shall supply all equipment necessary to unload and transport dome materials to the theater chamber.

Owner shall supply sufficient temporary electrical power and lighting for dome erection.

No other company or work force shall intervene in the room during the time necessary for dome erection except by express agreement with the *dome contractor*.

Dome Design

Frame

The support frame of the dome shall consist of primary longitudinal members that divide the dome into 25 gores, and primary latitudinal members that divide the dome into four (4) zones. Primary members shall be 6061-T6 aluminum tubing measuring 1.75x1.25x0.125in rolled to an inner radius of 180.00±0.50in. Secondary 0.93in tubular, Grade 1008 steel chord members shall be employed to maintain the desired geometry of the frame. 5/16-18 Grade 5 hardware shall be used in conjunction with 9.00in diameter, 0.125in thick, 5052-H32 aluminum hubs, having 1.75x0.125in flanges, to secure member junctures.

The frame's structural integrity shall allow the dome to maintain its desired geometry and be self-supported when mounted at its base to a load-bearing structure, or when suspended.

The dome shall be reinforced to allow for chain suspension. If the dome is chain suspended, the *dome contractor* shall provide chains and all suspension hardware *except for eyebolts*. The *owner* shall provide suspension and lateral tie eyebolts. The *dome contractor* shall provide drawings defining eyebolt locations to the owner, architect, and general contractor.

Frame members shall be degreased and finished matte, flat black prior to installation. Hardware shall be painted matte, flat black during installation.

The depth of the frame shall be no more than 8.00in from the projection surface, resulting in a clearance envelope of 188.00±0.50in.

The frame shall be capable of supporting at least one person without causing plastic deformation to the frame or panels, or visible projection surface distortion.

The frame shall be capable of supporting a reasonable amount of theater equipment as determined by the *owner* and the *dome contractor*. Equipment may include, but not be limited to, speakers, projectors, catwalks, ladders (both fixed and rolling), lights, and insulation.

Panels

The inner skin shall consist of 81 stretched-formed, perforated, 0.040in thick, 5052 aluminum panels. Panels shall be stretched-formed over a compoundly curved die. An array of 0.063in diameter holes on 0.125in staggered centers shall render the panels 23% void. A powder-coated finish shall supply the desired optical characteristics as described below. Panel edges shall be coincident with primary frame members, permitting attachment with 0.125in countersunk rivet on 3.00in centers.

Panels shall butt on the center of primary frame members and shall be backed with a black material of negligible thickness. The black material shall have a zero-degree incident gain of no more than 0.01 before and after installation. Seams between panels shall be no more than 0.02in.

Panels shall be degreased and powder coated prior to installation. Panel fasteners shall be pre-finished to match the panel gain, and touched up with computer-matched paint during installation.

Cove trough

The cove trough shall be 360° in plan and consist of a base plate and fascia. The fascia shall be spaced no more than 8.00in from the inner surface of the dome. The trough shall be finished flat black.

The base plate of each segment shall be made from 0.090in thick 6061-T6 aluminum sheet, with an outer radius of 181.75in. The fascia shall be no more than 2.25in tall and shall be made from 0.063in thick 6061-T6 aluminum sheet. The fascia shall be attached to the base plate via rolled 1.00x0.50x0.125in aluminum channel and 3/32in round head rivets on ±6.00in centers.

The outer radius of the trough shall be coincident with the outer radius of the dome base ring, permitting attachment to the bottom side of the dome base ring using 3/16in round head rivets on ±12.00in centers. Each trough segment shall be machined at both ends so as to permit attachment to each other via a lap joint and 3/32in round head rivets on ±3.00in centers. The lap joint shall render the base plate and fascia joints light tight.

Miscellaneous

The *dome contractor* shall coordinate dome installation with the general contractor so as not to delay the general building schedule.

The dome shall weigh approximately 1600lb, and the trough shall weigh approximately 200lb.

Dome parts shall be manufactured and packaged so that they may be carried through standard double door openings.

The dome contractor can perform a structural analysis of the dome (including seismic considerations as applicable) at additional cost to the owner.

Projection Surface Characteristics – Optical

The projection surface shall be suitable for viewing bright projected scenes with high resolution, true color, and high contrast. The surface shall maintain specified reflectance values and exhibit no gloss characteristics when subjected to a projected image and viewed under typical viewing angles.

The projection surface shall be pre-finished with a powder-coated, achromatic finish, and shall have an overall reflectance of 0.45, or a mutually agreed upon finish.

Should the factory-applied projection surface finish be soiled, marred, scratched, burnished, or otherwise disfigured by the *dome contractor* during or prior to completion of all work under these specifications, the *dome contractor* shall correct such disfigurement.

Projection Surface Characteristics – Flame Spread

ASTM E84-11a flame spread tests were conducted on a powder coated screen sample. The test returned a Flame Spread Index of 0, and a Smoke Developed Index of 170, resulting in NFPA Class A or UBC Class I ratings. Building codes cited: National Fire Protection Association (NFPA) and Uniform Building Code (UBC).

Table 1 – Flame Spread Classification

NFPA Class	UBC Class	Flame Spread
A	I	0 through 25
B	II	26 through 75
C	III	76 through 200

Acceptance Test Procedure

The *owner* will conduct the examination and testing of the completed dome.

The dome shall be examined with a bright light (supplied by *dome contractor*) to evaluate installation workmanship prior to the removal of the scaffolding. The *dome contractor* shall correct workmanship issues. When the dome appears satisfactory to the *owner,* the *owner* will accept and sign off on the dome.

Final payment for the dome will be made per the sales contract to the *dome contractor* after acceptance is given.

Warranty

Vendor shall warrant that its equipment shall comply with this specification and shall be free of defects in materials and workmanship for a period of one (1) year from the date of final acceptance. Screen surfaces are warranted to maintain initial reflectivity characteristics, be colorfast, and to demonstrate uniform finish characteristics when properly cleaned and maintained during this period. If defects occur during the warranty period dome vendor will correct the problem and will assume costs of parts and labor in fulfilling this warranty. If during normal maintenance or unauthorized service *owner's* personnel abuse or damage the equipment, *owner* will be responsible for labor and materials charges to repair such damage. The obligation of the vendor under this paragraph is limited to the repair or replacement of defective parts. This warranty is in lieu of all other expressed or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose. Dome vendor neither assumes, nor authorizes any person to assume on its behalf, any other obligation or liability.

Maintenance Recommendations

Room Conditions

Temperature: The dome and its powder-coated projection surface are tolerant of varying temperature conditions, therefore no restrictions are noted. See projection equipment for temperature range requirements.

Humidity: The dome requires a non-condensing environment. See projection equipment for humidity range requirements.

Dome and Projection Surface Cleaning

Panels may be cleaned of dust using a vacuum cleaner with a soft brush attachment from both sides of the panels. Dirt and grease stains can be cleaned from the panels using a soft cloth and a cleaning solution such as Windex or Fantastic. In lieu of these cleaners, a mild soap solution in warm water can be used. Stronger agents may be used once spare panel tests reveal no detrimental effects to the projection surface. Extra care should be taken when cleaning stains that are directly over the black material at panel laps. This material can hold moisture and lint resulting from the cleaning process. Excessive water or fluid should be avoided to prevent dirt from the back of the panel streaking its front.

The original projection quality of new panels will be maintained as long as the panels are cleaned on a regular basis. The length of time between cleanings is dependent on individual theater conditions such as customer traffic, atmospheric conditions, building conditions, and general theater cleaning and maintenance.

2. DIGITAL PLANETARIUM SYSTEM

District shall select either a cove-mounted, dual projector 2560 by 2560-resolution system (lamped), or a center-mounted, single projector 2400 by 2400-projector system with laser-illuminated phosphor projector. Mounts or stand for the projector/s shall be bolted into place.

2.0 TECHNICAL SPECIFICATIONS

There should be two primary components to the system - described below: the operator's workstation and the projection system.

2.0.1 OPERATOR'S WORKSTATION

The operator's workstation shall be comprised of an equipment rack/s housing all the system's computing hardware and a console top with the user interface. The height shall be either 30" or 42", specified at time of order.

2.0.2 USER INTERFACES

The User interfaces shall include a 24" 1920 X 1200 flat panel LCD monitor, mouse and keyboard, as well as a hand-held remote controller.

2.0.3 COMPUTING RACK

The realtime software shall run on a platform of two high-end PC computers. The first computer shall run the realtime user-interface applications and the system automation software. This machine shall serve as the "Controlling PC" through which the operator programs shows and manually operates the system. The second "Render PC" shall run the realtime rendering applications exclusively, which, taking commands from the controlling computer, shall generate the high-resolution real time sky, and earth layers to be displayed on the dome.

2.1 CONTROLLING PC

A. Processor: Intel 3.3GHz Core i7-5820K (Six-Core)

B. Memory: 32GB RAM

C. Graphics subsystem: NVIDIA Quadro K620 2GB

D. Disk Storage: 2TB

E. Operation System WIN7-64bit

2.2 RENDER PC

A. Processor: Intel 3.5GHz Core i7-5930K (Six Core)

B. Memory: 32GB DDR RAM

C. Graphics subsystem: NVIDIA Quadro K5200 8GB

D. Disk Storage: 512GB SSD System / 3TB Media

E. Operating System WIN7-64bit

F. Raid 1 / 3TB

2.3 FIREWALL

For proper operation, the system must access Internet-based data repositories. The District will be responsible for Internet security, relying on an existing, firewall and other appropriate security measures.

2.4 AUDIO OUTPUT

The fulldome digital planetarium computer rack shall provide a 5.1 channel or stereo analog balanced/unbalanced line level output to the sound system.

2.5 PROJECTION SYSTEM

2.5.1 AUTO-ALIGNMENT SYSTEM

If the dual projector system is selected, it shall employ a digital SLR camera fitted with a fisheye lens as part of an automatic geometry calibration system. This camera shall only be required when calibrating the system and may at other times be detached and used as a resource for show production. The camera shall be securely mounted to a stand that can easily be moved to the center of the theater for periodic calibration. The temporary calibration stand shall include a registration system so that it can be accurately placed each time it is moved to the center of the theater. The camera specifications shall be as follows:

A. Type: Digital AF/AE SLR with built in flash

B. Aspect ratio: 3:2 (horizontal to vertical)

C. Resolution: >12 megapixel

D. Lens: 4.5mm F2.8 180 degree FOV fisheye

2.5.2 WIRELESS HAND-HELD CONTROLLER

The system shall include a wireless hand-held control system for manipulating visuals projected by the digital planetarium for all included real-time software.

It shall consist of a hand-held pointer, which generates an invisible (infrared) laser spot, captured by a digital camera fitted with a fisheye lens. The camera shall image the position of the laser spot, and software shall be used to image the spot position as a moving cursor which can be accurately placed anywhere on the dome screen, regardless of the operator's location in the theater.

Using a projected cursor from the hand-held device and simple button commands, the user shall be able to manipulate objects' positions, the observer's distance from bodies, object motions (rotation around a point, orbit motion around a body), select locations on a body's surface to view in more detail, and generate a cursor on the dome for locating and labeling objects in the night sky. Graphic control capability shall allow operators to display software commands and menus on the dome.

The included earth science software shall display key commands as graphical buttons along the lower edge of the dome, which appear and disappear automatically depending upon where the operator rests the cursor. Menus and

selections shall be controllable, so the operator can choose between various menu button-commands, enable/disable commands, change values in the data being displayed, and step through pre-existing scene files.

2.5.3 DOCUMENTATION

The digital planetarium shall include user's guides for the realtime software and automation software packages.

2.5.4 CURRICULUM

The digital planetarium shall include five binders of teaching curriculum for astronomy (with software/discs), and one binder (with desktop software) for earth science.

2.5.5 INFRASTRUCTURE AND INSTALLATION REQUIREMENTS

Documentation shall be provided defining power, conduit and physical placement requirements for the fulldome digital planetarium system. The District shall be responsible for providing this infrastructure, and for an electrician to make final power terminations at the time of installation (if applicable).

2.6 FUNCTIONAL SPECIFICATIONS

This section will describe the functional capabilities of the fulldome digital planetarium system including realtime 3D simulation software.

2.6.1 SPACE SCIENCE SIMULATION

Software Architecture: The digital planetarium system shall be a true science simulator where the audience, guided by an operator, moves through space and time in a universe comprised of a 3D database.

A. Objects within this virtual universe shall have a variety of attributes that determine how they will appear. At a distance an object should be point of light. Up close, it shall typically be a sphere with a texture mapped to that sphere to provide a photo-realistic appearance. 3D textured objects (3ds files) shall also be displayed in realtime.

B. The fulldome digital planetarium shall come complete with over a half billion objects in its database and electronic updates, available for download every few weeks. In addition, the user shall be able to add elements to the database for custom objects within the simulated universe.

C. Texture maps: Objects in the virtual earth simulator, as well as planets, moons and asteroids in the astronomy simulator, shall come complete with 3D texture maps in the system.
Texture maps are defined as wrap around imagery that maps onto the surface of an object to provide a photo realistic view of an object when the viewer is close enough or zoomed in.

D. Highly detailed, near earth imagery will be shown on the surface of the virtual earth. As the operator moves nearer to the surface, increasingly detailed texture maps will be automatically displayed.

2.6.2 Educational Capabilities – The fulldome digital planetarium shall be configured to display astronomy and earth science lesson materials, and provide compatibility with educational desktop software. The system shall include teachers' guides, computer exercises, lesson plans and assessments for Elementary School, Middle School and High School curricula.

2.6.3 Planetarium presenters must be able to display, on their dome, exercises and complete lesson units from compatible classroom software via the system's primary realtime software. Realtime demonstrations and lessons created on classroom versions of the software must be imported to the fulldome digital planetarium system, and realtime simulations created on the fulldome digital planetarium system shall be shown using classroom work stations.

2.6.4 Astronomy textures: Users will be able to replace any of the texture graphics in the system or add new texture graphics themselves. Note that the actual phasing and proper illumination of 3D textured objects shall always be properly displayed based on the observer's position relative to the viewed object and the light source. Simple 2D photographic elements should also be inserted into the sky, tied either to existing objects or as completely new independent objects.

2.6.5 Viewing the Universe: The fulldome digital planetarium shall include an intuitive, powerful user interface. The system should not require extensive and complex scripting to change the audience's view or modify the sky. The realtime astronomy software shall enable the fulldome digital planetarium users to manipulate the sky and their view of the universe through clicking and dragging. Rotating the sky to view something behind the audience should be as simple as clicking on the sky and dragging it round until the view is facing the other direction. Traveling to a distant object shall be as simple as right-clicking that object in the sky and selecting the "go there" option. Accessing all of the capabilities of the realtime astronomy software must be designed to be this simple. No programming experience shall be required to use the system.

2.6.6 Compatibility – The fulldome digital planetarium shall enable operators to easily share astronomical scenes, simulations and other data with non-planetarium users via a standard data file.

A. The operator can save parameters defining an astronomical scene's position, field of view, movement through time/space, etc. into a file, and share these files with any person worldwide, regardless of location, who owns a compatible version of the software.

B. Owners of this compatible version of the software shall be able to create astronomy simulations and animations on their computer, save them to disc and transfer the files via email or standard data storage devices for view on the fulldome digital planetarium.

Likewise, the planetarium operator shall be able to create views and simulations and give them to non-planetarium software users to view on their computers, so long as they own a compatible version of the software.

2.6.7 STAR FIELD

A. Star Data: The complete star field for the fulldome digital planetarium shall be made up of multiple databases all of which can be shown concurrently for a total of over 500,000,000 stars. Specific star databases shall include Tycho 2 and Hipparcus 3D databases.

B. Proper Motion: Proper motion vectors shall be displayed in the star field along with 200,000 years of actual 3D proper motion.

C. Galaxies and Deep Sky Objects: In addition to stars, the fulldome digital planetarium database shall include the PGC database of over 70,000 galaxies.

D. Star System Details: Stars that are known to have planetary bodies orbiting them or exist as binary pairs shall be represented with this detail. If the user zooms in on or travels to one of these stars, the orbiting planets or stars shall be visible.

E. Constellation Figures: The fulldome digital planetarium shall project constellation stick figures, classical illustrations, labels and IAU boundaries for all 88 recognized

2.6.8 SOLAR SYSTEM

A. Planets: All planets in the local solar system shall be accurately represented in 3D space by the fulldome digital planetarium system. Detailed texture maps for each planet must allow the user to zoom in on or travel to each planet for a realistic view of the surface

B. Planets: All planets in the local solar system shall be accurately represented in 3D space by the fulldome digital planetarium system. Detailed texture maps for each planet must allow the user to zoom in on or travel to each planet for a realistic view of the surface

C. Satellites: Manmade satellites shall be displayed in 3D space with orbital data and new satellite updates available regularly for download.

D. Asteroids: The fulldome digital planetarium shall include orbital data to display over 100 asteroids properly in 3D space.

E. Comets: The fulldome digital planetarium shall contain the orbital data to display over 100 comets properly in 3D Space.

F. Orbital Trails: The fulldome digital planetarium shall display the orbital paths as lines in the sky for each planet, moon, satellite, asteroid and comet.

2.6.9 COORDINATE GRIDS

A. Local coordinate guides: Several guides shall be toggled for the Local coordinate system. The local Equator guide (horizon line) shall display the true line of zero elevation, which appears slightly above the apparent horizon due to the refraction of light by the atmosphere. The local Grid shall display an alt-az grid. The Meridian guide shall display the meridian line which runs overhead from north to south. The Poles guide shall display indicators for the Zenith (the point directly above you) and Nadir (the point directly below you). Altitude Azimuth guides shall be displayed in the sky to illustrate the observer's local horizon based coordinate system.

B. Equatorial Coordinate guides: Several guides shall be displayed based on the equatorial coordinate system. The Axes guide shall display the equatorial reference plane, with the Sun at its center. The Equator guide shall display the celestial equator, the projection of the Earth's equator onto the celestial sphere. The Grid guide shall turn on the equatorial grid and, by default, the RA and Dec of each gridline. The Meridian guide shall display the celestial meridian, the projection of the line of 0° right ascension in the sky. The Poles guide shall display the projection of the Earth's poles onto the celestial sphere.

C. Ecliptic Coordinate guides: Several guides shall be displayed for the Ecliptic co-ordinate system. The Axes guide shall display the ecliptic reference plane, with the Sun at its center. The Ecliptic guide shall display the Ecliptic, a projection of the plane of the earth's orbit onto the celestial sphere. The Grid guide shall display the gridlines of ecliptic longitude and latitude.
The Meridian shall display the line of 0° ecliptic longitude. The Poles guide shall toggle the display of the Ecliptic poles.

D. Galactic Coordinate guides: Several guides shall be toggled for the Galactic co-ordinate system. The Axes guide shall display the galactic reference plane, with the Sun at its center. The Equator guide shall display the Galactic equator, the baseline of the plane of the Milky Way. The Grid guide shall display the galactic plane's gridlines of longitude and latitude.
The Meridian guide shall display the line of 0° galactic longitude. The Poles guide shall toggle the display of the galactic poles.

2.6.10 TEXT DATA

A. Labels: The fulldome digital planetarium shall allow the operator to display a text label on the dome next to any object in the sky.
The object names or catalog numbers shall be stored for each of the over 500 million objects in the fulldome digital planetarium database.

B. Descriptions: The fulldome digital planetarium shall allow the user to access a description for each of the over 500 million objects in the database.
This information shall be easily accessed by either entering the object name or simply pointing to a desired object on the screen and clicking. This information shall be displayed on the operators control screen only and not on the dome.

C. Text Display on the Dome: The realtime software shall display information onto the dome for any object in the database. A movable cursor shall be displayed on the dome that can be used to point out objects in the sky. When this cursor rests on an object, text shall be displayed showing the object's name, type, position, magnitude, constellation location, apparent size and magnitude, catalog number, etc.

2.6.11 LOCAL VIEWING PHENOMENON

A. Horizon Panorama: The fulldome digital planetarium shall display a horizon panorama showing the foreground objects on the horizon. This panorama shall be a standard digital photographic format and users must be able to substitute the provided artwork for photographs or illustrations of their own choice. The fulldome digital planetarium shall automatically display the panorama whenever the user is on the surface of the body to which that panorama has been associated (different panoramas may be associated with each planet). The fulldome digital planetarium shall also adjust the Gamma of the panorama automatically to give the effect of transitioning from day into night. The user shall also have the option of turning off this panorama when desired.

B. Light Pollution: The fulldome digital planetarium shall allow the user to represent the night sky with an accurate representation of the effects of urban light pollution. The user must be able to select a general overall light pollution effect or define a specific scenario by placing light sources at specific angles around the horizon. The light pollution effect must also be capable of being turned off for a full rich sky.

C. Daylight: When the observer is viewing the sky from the surface of Earth, they shall have the option of viewing the daylight hours with the natural atmospheric effects of sunrise, sunset and blue sky. Alternately the daylight feature must be able to turn off to permit demonstrations of celestial motions that occur during the day but are normally not visible from Earth.

2.6.12 EARTH SCIENCE SIMULATION

A. Viewing the Earth: Operators will have the ability to view and manipulate a 3-dimensional earth, capable of showing a diverse variety of earth-science visualizations. When seen from a distance, the whole earth is visible, and shows user-selectable surface textures with hundreds of different layers, markers, text, and descriptive graphs to choose from. Nearby, the earth surface is seen in photorealistic detail, and displays proper 3-dimensional topography with correct elevation for surface features. As the viewer moves closer to the surface, higher resolution surface imagery appears, maintaining photorealism regardless of the location on earth,

B. Layers: User selectable surface layers will be included with the software, and are organized by subject areas commonly taught in earth/geo science courses. Simple on-screen commands allow the operator to display different unique for different topics. At a minimum, the following layers will be included with the software:

C. Guide Lines, Names: Place names will be displayed, and names will be updated to reflect the size of the region shows (smaller towns and feature names are shown as the area seen becomes smaller). Guide lines will include latitude/longitude, equator, Tropic of Cancer/Capricorn, Arctic/Antarctic circle, prime meridian, and International Date Line. Guides will also be included for measuring distances from location to location.

D. Biologic Information: Biologic details such as the Earth's biosphere, and fossil sites will be included.

E. Climate: Climate information will be shown, including imagery representing the ice coverage for every year from the present date to 20,000 years ago. Sea level will be visualized, with interactive controls to view higher/lower sea levels.

F. Earthquakes: Markers will be shown representing all current, recent, and historic earthquakes from 200 years past, to the present. The number of earthquakes displayed is user-selectable by date, magnitude and depth. The software will display current earthquake data and will update to show, in real time, the most recent earthquakes that occurred on earth.

G. The operator can also show, on the dome, an earthquake's location, magnitude, date/time of occurrence. Earthquake markets will display in their proper 3-dimensional depth relative to the Earth's surface.

H. Visuals will be included to show location of seismic stations (all stations, and the Global Seismic Network), liquefaction susceptibility, significant/deadliest know earthquakes, and seismic hazards.

I. Geophysics: Layers are included to display magnetic field data, magnetic inclination, declination and total magnetic intensity worldwide. Other layers include earth's geoid, soil region map, and gravitational anomaly (gravity field D360).

J. Human: Man made features including night lighting, population density and political map.

K. Plate Tectonics: Surface layers and markers will be included to visualize the continental drift effects on fossils, coal deposits, glaciations, rock age, and mountain ranges. Markers show plate boundary convergence, divergence and transformation. Multiple tectonic plate maps will show tectonic plate positions, velocity, global strain rate, fault types, plate boundary motions, plate outlines and spreading rate. Ocean floor layers will include ocean ridges, rift valley, and Rodinia continental masses.

L. Rocks and Minerals: Surface layers will be included to demonstrate crustal thickness (including high resolution shaded maps, and contours to indicate thickness levels) geologic age, miner al production regions (showing aluminum, copper, gold, steel, coal, natural gas, and oil), rock types (showing metamorphic, plutonic, sedimentary, and volcanic rock areas), seafloor age, sediment thickness, soil regions, and wind erosion.

M. Topography and bathymetry: Layer will show coastline area outlines, continental shelf (shaded map and outline), and continental silhouette. Ocean and seafloor features will be shown, including unique maps for: oceans, major seas, major gulfs and bays, minor gulfs and bays, straights and channels, basins, minor basins, abyssal plains, trenches, troughs, canyons, ridges, raises, banks and plateaus, minor banks, seamount ridges, minor ranges and guyots, single seamounts, reefs, minor reefs, fracture zones, fans. A shaded relief map will also be included for seafloor topography.

N. Tsunamis: Maps and markers will show dart buoy locations. Layers will also show locations of major tsunami events, including a time-scale indicating when tsunamis reach different parts of the earth. Color gradient indicators will also show the degree of tsunami for all locations on earth.

O. Volcanoes: Markers will show the locations of all volcanoes and all supervolcanoes (VEI-9, VEI-8, VEI-7). Maps will indicate the ring of fire region in shaded relief and as an outline.

2.6.13 ANATOMY SIMULATION

A. Viewing the Human Body: Operators will have the ability to view and manipulate a detailed 3-dimensional human body which shows all the systems and individual structures in realistic detail. Each system of the body (skeletal, circulatory, nervous, digestive, etc.) can be shown individually or in combination with other systems, with different transparency levels shown for each. Operators can view the full body at a distance or move close by to see structures in greater detail. Rendered objects will show realistic detail when seen from outside or inside structures.

B. Anatomy Catalog: Users will have the ability to display body structures individually, and to show each as a 3-dimenensionally modeled object with photorealistic surface texture. Structures can be selected by typing the object name into a search field, or through selections on a layer tree list. Using search or list selection, each object can be labeled.

C. Graphic Effects: Body visualization will include "X Ray View" where the internal details of a system or object are displayed as if visualized by x-ray imaging. Operators will be able to "explode" regions of the body, where individual systems are moved apart relative to a central point defined by the user.

D. Motion and Animation: The operator, using simple, intuitive mouse movements, will have the ability to move the body and view structures from any angle or distance. Manipulating a body render on the user-interface control screen will result in the dome-rendering of the body to smoothly animate from one position to another. When the operator selects and individual structure, the view will animate automatically to that object.

E. Saving Scenes: Operators will be able to establish a view of the body in a specific orientation – with specific structures or systems visible and/or partially visible using transparency settings – then recall this view for later display as a "saved file".

F. Automation: The operator will be able to create an automated program script, using a graphical timeline-based software which reproduces the live aspects of the body rendering including animations, system/object display, labeling, graphic effects etc.

2.6.14 AUTOMATION

In addition to permitting live operations, the fulldome digital planetarium shall include a complete automation package allowing for fully automated show production and playback. This automation system may also control a wide range of other devices, such as cove lighting and video players. Additionally, the

automation system must serve as its own stereo sound source by inserting standard WAV files into the automation time line.

2.6.15 MULTIMEDIA FUNCTIONS

The fulldome digital planetarium shall include special features enabling planetarium producers to program shows using tools that are analogous to multi-media production. Virtual special effects, digital slides and video are defined and manipulated using automation tools native to traditional planetarium production. Pre-produced linear shows shall also be displayed through a virtual film projection utility.

A. Virtual Slides/Effects - The virtual slide and special effects utility of the fulldome digital planetarium shall allow the producer to utilize scanned images from the traditional show artwork or download original artwork or digitized video clips and manipulate them on the dome.

B. Supported file formats: .jpg, .bmp, .tiff, .pct, .tga, .png, .mov, .mpg, mp4.

C. Slew controls: image shall be placed and moved in either dome or celestial coordinates.

D. Special Controls: the image size, rotation, color and transparency must be capable of manipulation in real-time.

E. Mixing media: Multiple images and videos shall be displayed simultaneously on the dome with automatic masking for objects passing in front of another object.

2.6.16 FULLDOME VIDEO PLAYBACK UTILITY

The system's fulldome video player shall allow the user to play back fulldome video productions as easily as one would operate a DVD player.

Fulldome video player functions shall be supported by the automation system allowing producers to mix real-time sequences with pre-rendered video clips in the same production.

A. Format: MPEG.

B. Frame rate: 30fps.

2.6.17 AUTO CALIBRATION – The use of multiple projectors (in the case of the dual-projector system) requires a software manipulation of the image feeding to each projector. This geometry correction ensures that the projected images represent a single spherical mapping on the dome with no blurring or double imaging in the blend region. The system shall include an automated method for quickly and accurately adjusting the geometry correction any time the projectors are bumped or handled. This automated system shall employ a camera fitted with a fisheye lens to take pictures of a series of reference patterns from which the system will automatically derive a revised pixel-accurate geometry mapping. The entire calibration process shall take no longer than 5 minutes.

3.0 LED COVE LIGHTING SYSTEM

3.1 SYSTEM DESIGN

A. Physically, the LED/RGB cove lighting system shall be designed to meet requirements of the UL / ETL standard.

B. The lighting system shall be installed in an architectural cove structure which is integral to the dome. This cove structure is not supplied under this specification.

C. The system shall provide 360° special-effect colored cove lighting for the domed theater.

3.2 SYSTEM CONFIGURATION

A. The cove lighting system shall consist of a series of 12" modular LED segment housings.

B. Each segment shall consist of a series of red, green and blue monolithic variable intensity light emitting diodes (LEDs).

C. Each of the colors (red, green, blue) shall be capable of being independently gang dimmed from zero to full brightness.

D. Additive color mixing shall provide the ability to create a full spectrum of colors.

E. The cove lighting system shall include the required number of 16 bit DMX dimmers. The supplied dimming system utilizes a unique dimming curve with optimized dimming resolution at the critical lower intensity levels required for planetarium use.

F. The cove lighting system shall be powered from 120/240 volt 20 amp outlet(s) NEMA 5-20 120V / NEMA 6-20R 240V or other international standard local power outlet.

G. The LED cove segments shall have a lamp life expectancy of 30,000 hours.

H. Power outlets and required conduit shall be supplied by others.

3.3 SYSTEM OPERATION

A. Manual/Automated cove lighting control shall be possible through the theater automation system/keyboard.

4.0 STEREO SOUND SYSTEM

4.1 GENERAL DESCRIPTION

A. The stereo sound system shall provide two channel support driving (4) four - (2) two way speaker systems. The system shall support inputs from various audio sources.

B. Rack-mount components shall be housed as part of the planetarium control desk/rack.

4.1 SUPPLIED HARDWARE

A. One (1) multiple input mixer shall be supplied, and will consist of twelve (12) balanced /line inputs and four (4) balanced line output buses. It shall also incorporate panning and equalizer controls.

B. Once (1) handheld dynamic microphone shall be supplied.

C. Four (4) two-way speaker enclosures with woofer and titanium compression tweeter shall be installed behind the projection dome; all speakers shall be of professional quality.

D. One (1) 24-input/output configurable patch bay with balanced inputs and outputs, including all necessary patch cables, shall be supplied with the system.

E. The system components shall be rack mounted.

4.2 Power Amplifiers

A. G. One (1) main channel power amplifiers shall be supplied.

B. H. Main channel power amplifier shall be rated at 300 watts per channel RMS (600 total watts RMS).

4.3 POWER REQUIREMENTS

A. The system shall be powered by a single dedicated 120 Volt/20 Amp NEMA 5-20R local power outlet.

5.0 WARRANTY & INSTALLATION

A. All equipment shall be warranted for one (1) year.

B. Cove lighting and equipment shall be installed by the planetarium contractor.

PROPOSAL PAGE

Planetarium Renovations – McCullough Middle School
COLONIAL SCHOOL DISTRICT
BID # 4-17-21

The above costs are submitted in accordance with the General Instructions to Bidders, and the Specifications. Any exceptions to these are to be listed below; otherwise, I agree to complete the contract as per the General Instructions and Specifications:

NAME OF COMPANY SUBMITTING PROPOSAL

ADDRESS

THE UNDERSIGNED BIDDER CERTIFIES THAT NEITHER HE NOR ANY REPRESENTATIVE OF HIS COMPANY HAS, EITHER DIRECTLY OR INDIRECTLY ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THIS PROPOSAL.

SIGNATURE OF AUTHORIZED REPRESENTATIVE | **DATE**

NAME OF LOCAL REPRESENTATIVE (PRINT) | **FAX NUMBER**

TELEPHONE NUMBER | **E.I. NUMBER**

BID OPENING: October 5, 2016 at 2:00 PM

BIDS NOT RECEIVED BY THIS TIME SHALL NOT BE CONSIDERED. NO EXCEPTIONS WILL BE MADE.

Planetarium Renovations – McCullough Middle School
Colonial School District
BID #4-17-21

BID FORM

For Bids Due: October 5, 2016 at 2:00PM **To:** Colonial School District

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: ( ) _____ - _____ **Fax No.:** ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

BID #1

$_____
($)

BID #2

$_____
($)

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

ALTERNATE No. 1: _____ (BRIEF DESCRIPTION) _____

Add/Deduct: _____
($)

ALTERNATE No. 2: _____ (BRIEF DESCRIPTION) _____

Add/Deduct: _____
($)

Planetarium Renovations – McCullough Middle School
Colonial School District
BID #4-17-21

BID FORM

ALTERNATE No. 3: _____ (BRIEF DESCRIPTION) _____

Add/Deduct: _____
($)

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

		ADD	DEDUCT
UNIT PRICE No. 1:	(BRIEF DESCRIPTION)	$	$
UNIT PRICE No. 2:	(BRIEF DESCRIPTION)	$	$
UNIT PRICE No. 3:	(BRIEF DESCRIPTION)	$	$

Planetarium Renovations – McCullough Middle School
Colonial School District
BID #4-17-21

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ **By:** _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Affidavit(s) of Employee Drug Testing Program
Bid Security
(Others as Required by Project Manuals)

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.** This form must be filled out completely with no additions or deletions. **Note that all subcontractors listed below must have a signed Affidavit of Employee Drug Testing Program included with this bid.**

Subcontractor Category	Subcontractor	Address (City & State)	Subcontractors tax payer ID # or Delaware Business license #
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date *(to the Office of Management and Budget, Division of Facilities Management)*.

All the terms and conditions of *(Project or Contract Number)* have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.