



ADVERTISEMENT DATE: **March 17, 2023**

**HAMILTON COUNTY DEPARTMENT OF EDUCATION
3074 Hickory Valley Road
Chattanooga, Tennessee 37421
(423) 498-7030
INVITATION TO BID (ITB)**

BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE

Sealed envelopes containing bids must be sent to the Purchasing Department and addressed to the Hamilton County Department of Education, 3074 Hickory Valley Road, Chattanooga, Tennessee 37421. Proposers must submit and mark an “original” bid, one “copy”, and one “USB Flash Drive” in one (1) sealed envelope. Bid documents may be secured from the Procurement Department at the above address and on our website at www.hcde.org via vendor registry. Bids received shall be opened by the Purchasing Department at the time and place designated in the Solicitation and/or associated addenda. The opening for the ITB shall be open to the public.

Bids must be received in the Purchasing Department prior to the designated time for opening. Bids received after the designated time of opening will be considered late and shall be considered Non-Responsive.

SOLICITATION NUMBER & TITLE	BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE
OPENING/DUE DATE & TIME	April 10, 2023 & 2:00 PM
LOCATION	3074 Hickory Valley Road, Chattanooga, Tennessee 37421
PROCUREMENT CONTACT	Debbie Jackson
PHONE	423-498-7030
EMAIL	DOE_Purchasing@HCDE.Org
PRE-SOLICITATION MEETING	Yes
TYPE	MANDATORY
DATE & TIME	March 23, 2023 & 10 AM
LOCATION	2015 Ooltewah Ringgold Road Ooltewah TN 37363

BIDDER NAME _____

HAMILTON COUNTY DEPARTMENT OF EDUCATION
3074 Hickory Valley Road
Chattanooga, Tennessee 37421
(423) 498-7030

INVITATION TO BID (ITB)

BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE

Sealed bids will be received addressed to the **Attention of: Denise Ellison, Hamilton County Department of Education**, 3074 Hickory Valley Road, Chattanooga, Tennessee 37421, **until 2:00PM, on April 10, 2023**. Any bid received after the scheduled closing time for receipt of such bid will be considered late and shall be considered Non-Responsive.

TERMS AND CONDITIONS

These terms and conditions shall be part of the Contract. HCS reserves the right to negotiate other terms and conditions it deems appropriate and necessary under the circumstances to protect the public's trust.

Note: Throughout this document the terms Proposer, Contractor, Company, Vendor, Firm or Bidder are used interchangeably and refer to any organization submitting a response to any solicitation. Additionally, the words terms, quote, bid, proposal are used interchangeably and refer to the submission in response to any solicitation. Hamilton County Schools, will be referenced as "HCS".

1. **Quality and Guarantee** - All material on which bids are submitted shall be of the quality and grade specified. Each bid must be accompanied with complete descriptions, catalog cuts, or other illustrations of each item upon which a bid is made. The names of manufacturers and stock numbers shall be clearly indicated. Approximate delivery dates are to be given for each item. Any item bid which does not completely meet stated specifications must be listed as an alternate.
2. **Requirements for Submitting Bids** – Bids made on forms other than the Bid Form will not be considered. No modifications or alterations to the bid documents may be made either by interlineation, supplements or deletions. Documents submitted with modifications of any kind will be ruled non-responsive and the vendor possibly removed or suspended from the bid vendor listing for a period of up to two (2) years. The signature of the person submitting the bid shall be in longhand without erasure.
3. **Exceptions:** Bidders taking exceptions to any part or section of this invitation shall indicate such exceptions on the bid form. Failure to indicate any exception will be interpreted as the bidder's intent to comply with and/or supply the requirements as written in the bid document.
4. **Bid amendment:** If it becomes evident that an invitation must be amended, a formal written amendment will be issued to all known Bidders. If necessary, a new due date will be established.
5. **Bid delivery:** HCS requires that all bids be submitted and time/date-stamped by the date and before the time specified in the bid documents to be considered, regardless of method of delivery. The time clock in the Procurement Department shall be the official record of the time. HCS is not responsible for any technical difficulties of any vendor in the delivery of its bid. No late bids will be accepted, opened or returned.
6. **Bid forms:** Vendors must complete bid forms contained in the bid package. Failure to fully complete the bid forms may result in rejection of the bid.

- a. All information shall be entered in ink or typed/computer generated. Mistakes may be crossed out and corrections inserted before submission of your bid. Corrections shall be initialed in ink by the person signing the bid. Corrections and/or modifications received after the closing time specified will not be accepted.
7. **Bid preparation:** Prospective bidders are solely responsible for their own expenses in Bid preparation and subsequent negotiations with HCS, if any.
8. **Bid pricing:** Any bid, and its associated pricing, shall remain valid for at least ninety (90) days after the bid due date, unless otherwise indicated in the bid specifications. Unit price must be shown for all products or services. In case of error in extension, unit price will govern.
9. **Bid submission and transmission:** Bid must be submitted in a sealed envelope with the Bid Number/Name, the closing date and time, as well as your company name provided on the envelope. If your response envelope is enclosed in another envelope/package for delivery, the latter should also be clearly labeled with the same identifying information.
 - a. All bids are to be F.O.B. Hamilton County, TN. All responses to this invitation become the property of HCS. Bids/Bids submitted via e-mail or facsimile machine are unacceptable.
10. **Cooperation with Other Service Providers:** If HCS undertakes or awards other contracts for additional related work, the Service Provider shall fully cooperate with such other Service Providers and HCS employees, and carefully fit its own work to such additional work as may be directed by HCS. The Service Provider shall not commit or permit any act which will interfere with the performance of work by any other Service Provider or County employees.
11. **Withdrawal** - Withdrawal of an inadvertent or erroneous bid or proposal by the vendor (before or after opening) may be permitted, when the Purchasing Department determines it to be appropriate. For an unopened manually submitted bid or proposal in exclusive possession of HCS to be withdrawn, a written request for withdrawal must be submitted to the office of the HCS Purchasing Department by a duly authorized representative of the vendor. To take effect, such requests must be received prior to the time set for the opening. A successfully withdrawn submission may be replaced with another sealed bid / proposal if it is received prior to the time set for the opening. In all cases, determination of bid / proposal receipt will be solely governed by the clock-in time as determined by a clock or timepiece designated by the Purchasing Department. No other clock or timepiece will have any bearing on determining whether or not the bid / proposal has been received prior to the time set for the opening. Electronic bids / proposals are available to be withdrawn by the vendor until the specified opening. An apparent successful bidder alleging a material mistake may be allowed to withdraw their Bid at the option of HCS.
12. **Rights of Owner** - The Hamilton County Board of Education reserves the right to reject any or all bids or any part thereof, to waive technicalities and informalities, and to award a contract to other than the low bidder. The right is reserved to reduce or increase the quantity of any item; and to award contract by item number, or group of items. Price, quality, and suitability will be considered in awarding bids. Samples to be submitted by the bidder upon request.
13. **Negotiation** – Hamilton County Department of Education may select a successful Proposer on the basis of initial offers received without discussions. Therefore, each Bid shall contain the Proposer's best terms from a cost or price, experience and technical and service standpoint. Hamilton County Department of Education reserves the right to enter into negotiations with Proposers. If Hamilton County Department of Education and the selected Proposer cannot negotiate a successful agreement, Hamilton County Department of Education may terminate said negotiations and begin negotiations with the other Proposers. Hamilton County Department of Education retains the right to negotiate with multiple Proposers simultaneously. This process will continue until a Contract has been executed or all Proposers have been rejected. No Proposer shall have any rights against Hamilton County Department of Education arising from such negotiations.

14. **Clarification of Bid Document** - Should a bidder find discrepancies in or omissions from the bid document or should he be in doubt as to its meaning, he shall at once request clarification of the Owner.
15. **Awarding of Contracts** - Award will be made to the most responsive, responsible bidder(s) meeting specifications, who presents the product of service that is in the best interest of HCS. HCS reserves the right: (1) to award bids received on the basis of individual items, or groups of items, or on the entire list of items; (2) to reject any or all bids, or any part thereof; (3) to waive any informality in the bids; and (4) to accept the bid that is considered lowest and best.
16. **Tax Exemption** - Hamilton County Board of Education is a tax exempt entity/organization and will only pay those taxes for which it is obligated. Hamilton County Board of Education can provide a Government Certificate of Exemption for purchases where the entity's tax exemption may apply. All bidders should include in their bids, all sales and use tax which they are obligated to pay when making purchases for material or sub-contractor services. Sales and Use Tax shall be omitted when requesting pricing related to only equipment, supplies, product or equivalent purchases where the Certificate of Exemption for would exempt Hamilton County Board of Education from paying such taxes.
17. **Meeting Specifications** - By my written signature on this bid, I (we) agree and certify that all items included in the bid meet or exceed any and all specifications covering such items. I (we) further agree, if awarded a contract, to deliver merchandise which meets or exceeds the specifications. Failure to comply with this section will result in removal of your firm from our list of bidders for at least six (6) months. This penalty does not preclude action to enforce specific performance.
18. **Declaration/Statement by Bidder** - The respondent hereby states that he, his company, or any of its employees, agents, officers or proposed sub-contractors have not violated or participated in a violation of, been convicted, or pled "nolo contendere" to any act involving an unlawful restraint of trade such as, but not limited to violations of the Sherman Act (15 U.S.C. § 1-2), the Racketeer Influenced and Corrupt Organizations Act (18 U.S.C. 1961-1968), the Hobbs Act (18 U.S.C. §1961), the mail or wire fraud statutes (18 U.S.C. §1341,1343), the false statements statute (18 U.S.C. §1001), the Tennessee Anti-Trust Act (T.C.A. § 47-25-101) or similar state or federal law. Respondent further states that he, his company or any of its officers, agents, or employees have not been debarred by any governmental agency (Federal, state, or local).
 - a. In submitting this bid, you are certifying that you are aware of the requirements imposed by T.C.A. §49-5-413(d) to conduct criminal background checks through the Tennessee Bureau of Investigation and the Federal Bureau of Investigation on yourself and any of your employees who may come in direct contact with students or who may come on or about school property anytime students are present. You are further certifying that at no time will you ever permit any individual who has committed a sexual offense or who is a registered sex offender to come in direct contact with children or to come on or about school property while students are present.
19. **Drug-Free Workplace Program**- Note: Required for construction services, encouraged for others. Law prohibits state or local governments from contracting for construction services with any private entity having five or more employees who has not furnished a written affidavit by its principal officer at the time of the bid or contract stating that the contractor is in compliance with the provisions of this act. Other organizations are encouraged to ensure that their workplace is Drug-Free
20. **Title VI of the Civil Rights Act of 1964** - No person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

21. **Title IX of the Education Amendments of 1972** - Prohibits discrimination based on gender in all programs or activities that receive Federal financial assistance. Title IX also includes same gender harassment as well as student-to-student harassment.
22. **Bid Acceptance**- Bidders shall hold their price and/or discount firm and subject to acceptance by HCS for a period of ninety (90) days from the date of the bid opening, unless otherwise indicated in their bid.
23. **Qualifications of Bidders**- A bidder may be required, before the award, to show to the complete satisfaction of HCS that it has the necessary facilities, ability, insurance, and financial resources to provide the service or goods specified.
24. **Restrictive or Ambiguous Specifications**- It is the responsibility of the prospective bidder to review the entire invitation to bid (ITB) or Invitation to Bid (Bid) packet and to notify the Procurement Department if the specifications are formulated in a manner that would unnecessarily restrict competition. Any such protest or question regarding the specifications of bidding procedures must be received in the Procurement Department *not less than seventy-two hours* prior to the time set for bid opening. These requirements also apply to specifications that are perceived to be ambiguous.
25. **Samples**: Samples of articles, when required, shall be furnished free of cost of any sort to HCS and may be retained for future comparison. Samples which are not destroyed by testing or which are not retained for future comparison will be returned upon request *at bidder expense*.
26. **TN Department Of Revenue Requirements**: Any awarded Vendor must be registered with the Department of Revenue for the collection of Tennessee sales and use tax.
27. **No Contact Policy**- After the date and time established for receipt of bids by the HCS Procurement Department, any contact initiated by any bidder with any HCS representative, other than the Procurement Division representative listed herein, concerning this solicitation is prohibited. Any such unauthorized contact may cause the disqualification of the bidder from this procurement transaction.
28. **Pricing**: Vendors are to quote a firm fixed price or discount for the term of the contract; inclusive of any renewals. Upon notice of request for renewal, or in the event of significant industry wide market changes, the Vendor may request a price increase. Proof of price increase must be supplied to the HCS Procurement Department. HCS reserves the right to accept or reject the requested price increase. If the price increase is rejected, the vendor may:
- Continue with existing prices;
 - Submit a revised request for price increase;
- Or
- not accept the renewal offer.
- a. If a price increase is approved by HCS, the approval notification will be done in writing and the vendor will be notified of the new price schedule. This documentation will become part of the bid file. No approvals will be authorized verbally.
 - b. All orders are to be quoted F.O.B. destination.
29. **Quantities**- HCS does not guarantee any quantities of items to be purchased. We will buy these items on an as-needed basis.
30. **TN Cooperative Purchasing**: also known as piggybacking, HCDE reserves the right to extend the terms, conditions and prices of this contract to other institutions (such as State, Local and/or Public Agencies) who express an interest in participating in any contract that results from bids and/or bids. Each of the piggyback institutions will issue their own purchasing documents for purchasing of the goods. Bidder agrees that HCDE shall bear no responsibility or liability for any agreements between Bidder and the other Institution(s) who desire to exercise this option

31. **Acceptance**: all terms and conditions in this contract are deemed to be accepted by the vendor and incorporated in the bid, except the provision(s) which are expressly excluded by the specifications.
32. **Additional Information**: vendors are cautioned that any statement made by any individual or employee of HCS that materially changes any portion of the bid document, either before or after the issuance of the bid documents, shall not be relied upon unless subsequently ratified by a formal written amendment to the bid document.
33. **Alteration or amendments**: no alterations, amendment, changes, modifications or additions to any contract resulting from this bid shall be binding on HCS without the prior written approval of HCS.
34. **Assignment**: contractors shall not assign or sub-contract this agreement, its obligations or rights hereunder to any party, company, partnership, incorporation or person without the prior written consent of HCS.
35. **Brand names**: brand names and numbers, when used, are for reference to indicate the character or quality desired. Equal items will be considered, provided they are clearly identified by manufacturer, part number, diagrams, brochures and other related material, *unless stated otherwise in the bid specifications*. When brand, number, or level of quality is not stated by the bidder, it is understood the offer is exactly as specified.
36. **Code Of Ethics**: all suppliers are expected to adhere to business ethics and professional behaviors as outlined in these documents.
37. **Compliance With All Laws**: companies submitting bids must agree to observe and comply with all federal, state, and local laws, statutes, ordinances, and regulations, including but not limited to title vi of the federal civil rights act of 1964, the equal employment opportunity act and the regulations issued there under by the federal government, the Americans with disabilities act of 1990 and the regulations issued there under by the federal government, in any manner affecting the provision of goods and/or services, and all instructions, prohibitive orders issued, and shall obtain all necessary permits.
38. **Declarative Statement**: any statement or word (e.g., must, shall, will) are declarative statements and the vendor must comply with the conditions. Failure to comply with any such statement may result in their bid being deemed non-responsive and disqualified.
39. **Default**: in case of default by the vendor, HCS may procure the articles or services from other sources and may deduct from any monies due, or that may thereafter become due to the vendor, the difference between the price named in the contract or purchase order and actual cost thereof to HCS. Prices paid by HCS shall be considered the prevailing market price at the time such purchase is made. Periods of performance may be extended if the facts as to the cause of delay justify such extension in the opinion of the procurement director.
40. **Deliveries**: must be accompanied by delivery tickets or packing slips. These shall contain the following information for each item delivered: purchase order number; item number; name of article; quantity; and supplier.
41. **Delivery Of Goods And Services** - it is understood and agreed that this bid shall constitute an offer which, when approved by the school board and accepted in writing by the purchasing department, will constitute a valid and binding contract between the undersigned and the Hamilton County Department of Education. Failure to supply needed material and/or services will result in removal of your firm from our list of bidders for at least six (6) months.

42. **Delivery Requirements:** time of delivery shall be stated as the number of calendar days following receipt of the order by the vendor to receipt of the goods or services by HCS. *Note: time of delivery may be a consideration in the award.*
43. **Discounts For Prompt Payment:** vendors may include an option for cash discounts off of their quoted price, with terms of payment to be a minimum of net 15. If a discount for prompt payment is offered by the bidder, it must be shown in the bidder's response; however, discounts for prompt payment will not be considered in the evaluation of bids or bids. If earned, HCS will take all discounts offered for prompt payment, provided correct and proper invoices, prepared in accordance with the terms of the purchase order or contract, are processed and payment is issued or post-marked to the Successful Bidder within the Stipulated Time Frame.
44. **Drug-Free Workplace Program for Construction Services:** law prohibits state or local governments from contracting for construction services with any private entity having five or more employees who has not furnished a written affidavit by its principal officer at the time of the bid or contract stating that the contractor is in compliance with the provisions of this act. Companies, other than construction services, are also encouraged to have and maintain drug-free workplace policies.
45. **Grant Funded Purchases:** for purchases that are grant funded, the grant agreement may contain/require special terms and conditions. If there is a conflict between the terms and conditions of the grant agreement and the general terms and conditions of the bid or bid, the grant agreement terms and conditions shall prevail.
46. **Indemnifications/Hold Harmless:** contractor shall indemnify, defend, save and hold harmless HCDE, the school board, administration, and their agents and employees from any and all suits, claims, actions or damages of any nature brought because of, arising out of, or related to the contractor's performance under the terms of this contract, including the work of any sub-contractor, and without regard to any allegations of fault.
47. **Insurance Requirements:** The Vendor shall maintain the following minimum insurance requirements throughout the duration of the Agreement. HCS reserves the right to request additional documentation or additional policies be provided at its sole discretion and where deemed in its best interest. HCS in no way represents that the insurance required is sufficient or adequate to protect the Vendor's interest or liabilities.

Vendor shall provide Worker's Compensation Insurance as required by applicable laws of the State of Tennessee and shall provide liability insurances as required. All insurance must be occurrence based. Vendor shall add Hamilton County Department of Education as additional named insured by policy endorsement and provide a certificate of insurance evidencing such coverage and endorsement number (#) for each additional named insured. Complete copies of insurance policies must be provided, if requested. A failure to provide said documentation will be considered a contract breach and grounds for termination of contract or pending award recommendation.

Insurance Required	
Coverage	Amount
Workers Compensation	Statutory Limits of Tennessee
Employers Liability	\$1,000,000 per occurrence
Commercial General Liability	\$1,000,000 each occurrence; \$2,000,000 aggregate
Auto (Truck) Liability	\$1,000,000 each occurrence

48. **Invoices:** will be returned for correction unless they contain the following information: purchase order number; item numbers; description of item; quantity; unit price; extensions; and total.

49. **New equipment:** the vendor shall guarantee that the units submitted for this bid shall be new, and the latest and most improved model of current production, and shall be first quality as to workmanship and materials used in said units. All modifications shall be made at the factory. Demonstrators shall not be acceptable. *Note: when the bid is for services, this item does not apply.*
50. **Non-Collusion:** vendors, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or federal law.
51. **Non-Conflict Statement:** vendors, by submitting a signed bid, agree that it has no public or private interest and shall not acquire directly or indirectly any interest that would conflict in any manner with the provision of its goods or performance of its services. Supplier warrants that no part of the total contract amount provided herein shall be paid directly or indirectly to any officer or employee of HCS as wages, compensation, or gifts in exchange for acting as officer, agent, employee, subcontractor or consultant to the contractor in connections with any goods provided or work contemplated or performed relative to the agreement.
52. **Non-Discrimination Statement:** supplier must agree that no person on the grounds of age, color, disability, gender, genetic information, national origin, political affiliation, race, religion, sexual orientation, or veteran's status shall be excluded from participation in, or be denied benefits of, or be otherwise subjected to discrimination in the performance of this agreement, or in the employment practices of vendor. Supplier shall upon request show proof of such non-discrimination, and shall post in conspicuous places available to all employees and applicants notices of non-discrimination. Suppliers covenants that it complies with the fair wage and hour laws, the national labor relations act, and other federal and state employment laws as applicable. Supplier covenants that it does not engage in any illegal employment practices.
53. **Payment Method-** HCS utilizes two (2) methods of placing orders for products. The first is the use of Purchase Orders. These Purchase Orders will be issued from HCS Procurement Division via the method selected by the vendor during registration. The Purchase Order will detail the quantity, specific items(s) and the contracted price for each item.
- a. The second method is the use of the HCS Credit Card (MASTERCARD). Orders placed with the credit card will list the same information as the Purchase Order. Vendors will be given the card information and approval to process the transactions by the requesting department. Vendors must indicate in their bid response if the vendor will accept the HCS Credit Card (MASTERCARD) as a form of payment. Bidders are prohibited to charge HCS any type of merchant fee from their financial institution to accept this type of payment.
54. **Payment Terms:** HCS payment terms are Net 30 after receipt/inspection of merchandise and receipt of invoice unless otherwise stated in the contract documents.
55. **Public Access to Procurement Information:** Subject to the requirements of the TN Open Records Act, information relating to the award of a particular contract shall be open to the public only after evaluation of that bid or bid has been completed. All public records pertaining to procurement shall be open for inspection during normal business hours as scheduled in advance with the Procurement Department.
56. **Protest of Award:** Any vendor who has submitted a timely bid or bid in response to a solicitation may protest the recommendation of award for a contract by submitting such protest to HCS's Director of Procurement. Any protest must be submitted in writing and be in the possession of the Procurement Department before noon (ET) of the 2nd working day following the public recommendation of contract award.

FAILURE OF A VENDOR TO FOLLOW THE PROTEST REQUIREMENTS WITHIN THE TIME FRAMES PRESCRIBED IN THIS SECTION CONSTITUTES A WAIVER OF THE PROTEST AND ANY RESULTING CLAIMS.

57. **Right to Audit:** During all phases of the work and services to be provided hereunder the Provider agrees to permit duly authorized agents and employees of HCS to enter the Provider's offices for the purpose of inspections, reviews and audits during normal working hours. Reviews may also be accomplished at meetings that are arranged at mutually agreeable times and places. The Provider will maintain all books, documents, papers, accounting records, and other evidence pertaining to the fee paid/charged under this Contract and make such materials available at their offices at all reasonable times during the period of this Contract and for seven (7) years from the date of payment under this Contract for inspection by HCS or by any other governmental entity or agency participating in the funding of this Contract, or any authorized agents thereof; copies of said records to be furnished if requested.
58. **Safety Data Sheets:** After award, the successful bidder(s) will be required to provide HCS with a master set of Safety Data Sheets for any applicable products.
59. **Severability:** If any provisions of these Rules or any application thereof to any person or under any circumstance is held to be invalid, such invalidity shall not affect the provisions or applications of these rules which can be given effect without the invalid provision or application, and to this end the provisions of these Rules are declared to be severable.
60. **Termination for Cause:** In the event of any breach of contract by the successful service provider(s), HCS may serve written notice to the service provider of its default, setting forth with specificity the nature of the default. If the defaulting party fails to cure its default within thirty (30) days after receipt of the notice of default, then HCS shall have the right to terminate the contract upon thirty (30) days written notice and pursue all other remedies available to HCS, either at law or in equity.
61. **Termination for Convenience:** Contract may be terminated for convenience by either party by giving written notice to the other, at least sixty (60) days before the effective date of termination unless otherwise specified in the solicitation and/or contract documents. Said termination shall not be deemed a Breach of Contract.
62. **Termination Due To Non-Appropriation:** HCS shall not be obligated for the Contractor's performance hereunder or by any provision of this Contract during any of HCS's future fiscal years unless and until HCS appropriates funds for this Contract in HCS's Budget for each such future fiscal year.
63. **Terms and Conditions:** In the event of a conflict between the specifications and these terms and conditions, the specifications will govern.
64. **Warranties:** Vendor warrants to HCS that all items delivered and all services rendered shall conform to the specifications, drawings, bid and/or other descriptions furnished and/or incorporated by reference, and will be fit for the particular purpose purchased, of merchantable quality, good workmanship, and free from defects. Vendor extends to HCS all warranties allowed under the U.C.C. Vendor shall provide copies of warranties to the HCS. Return of merchandise not meeting warranties shall be at Vendors expense.
65. **Waiving of Informalities:** HCS reserves the right to waive minor informalities or technicalities when it is in the best interest of HCS.
66. **Governing Law/Jurisdiction:** **The Agreement shall be governed by the laws of the State of Tennessee. Any action brought in law or in equity to enforce any provision of the entire Agreement shall be filed in the appropriate state court in Hamilton County, Tennessee. In any action to enforce this Agreement, the prevailing party shall be entitled to recover its costs and**

expenses, including reasonable attorney's fees. By submission of a proposal and acceptance of a Purchase Order or Contract, Vendor hereby agrees to adhere to Governing Law/Jurisdiction requirements as described herein.

HCS DOES NOT DISCRIMINATE ON THE BASIS OF AGE, COLOR, DISABILITY, GENDER, GENETIC INFORMATION, NATIONAL ORIGIN, POLITICAL AFFILIATION, RACE, RELIGION, SEXUAL ORIENTATION, OR VETERAN'S STATUS IN THE EVALUATION AND AWARD OF BIDS.

SPECIAL CONDITIONS**1.0 CONTRACT PERIOD**

1.1 CONSTRUCTION TERM: From the Notice to Proceed or the Purchase Order date, whichever applies: 120 calendar days to final completion.

2.0 FUNDING NOTICE AND DAVIS BACON NOTICE:

2.1 As a notice to all Vendors, this solicitation and its associated Agreement may be funded in whole or in part with Federal funds in addition to general funds of the agency. Where federal funding is utilized the federal provisions as provided within the Federal Notice & Provisions of this Agreement shall apply. Notice of application of federal funding may be given by HCS authorized Project Manager/Ordering Contact and may be notated on applicable Purchase Order where known in advance. When funding is not clear it shall be the responsibility of the Vendor to clarify with the HCS authorized Project Manager.

3.0 BOND

3.1 Each bid must be accompanied by a Bid Bond in the amount of 5% of the proposed dollar amount (including applicable Alternates) must be submitted with the bid. Failure to provide a valid Bid Bond at the time of bid submission shall deem Contractor Non-Responsive and therefore ineligible for evaluation and award.

3.2 For any construction Project Total that is equal to or exceeds \$100,000.00, Vendor shall provide a Performance & Payment Bond meeting the HCS requirements for 100% of the Project Total from a surety company authorized to do business in the state of Tennessee or other form satisfactory to HCS. Fees/costs associated with procuring any bonding shall be at the sole expense of the Vendor and such shall be covered by the Project Total provided by Vendor for the associated Project.

SCOPE OF SERVICES**BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE****1.0 SUMMARY OF SCOPE**

- 1.1 Hamilton County Schools (HCS) seeks to contract with a qualified, experienced, and professional Vendor to provide construction related service for furnish and installation of improvements to the East Hamilton High School track and field event space.

- 1.2 This project includes demolition of the existing 8-lane track and track and field event structures and the construction of a new 8-lane 400 meter track with new track and field structures. The 8-lane track will include laser grading, base material asphalt paving, red plexi track surfacing and striping. Field event structures include high jump, long jump, triple jump, shot put, discuss, and pole vault. The track and all field events shall be built per NFHS (National Federation of State High School Associations) standards. Contractor shall provide verification that the track is constructed and striped per NFHS Standards. The lump sum bid shall include the construction of erosion control measures, channel drain, drainage improvements, earthwork, fencing, sidewalk, including all labor, supervision, equipment, and all other incidentals to construct the track in accordance with NFHS regulations, and attached plans and specifications. Contractor shall be required to verify the location of all utilities and coordinate any utility relocations with utility companies and/or Hamilton Department of Education. Contractor shall be a "Certified Track Builder" or have a "Certified Track Builder" as part of its team. Contractor shall submit "as-built" drawings as part of the close-out documentation.

2.0 DETAILED SCOPE OF SERVICES

- 2.1 The detailed scope of work and Vendor/Contractor responsibilities are further defined within the Project Manual/Specifications and project plans provided as part of the solicitation. It is the responsibility of the Vendor to review and fully understand all associated project documents.

HAMILTON COUNTY DEPARTMENT OF EDUCATION
 Chattanooga, Tennessee 37421
SOLICITATION RESPONSE & BID/PROPOSAL FORM

BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE

1. Vendor Name _____
2. Vendor Address _____
3. City _____ State _____ Zip _____
4. Telephone Number _____ Fax Number _____
5. Contact Person _____
6. Contact Person's email address _____
7. By submission of this bid/proposal, each Vendor and each person signing on behalf of any Vendor certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each Vendor is not on the list created pursuant to Tennessee Code Annotated § 12-12-106.
8. Authorizing Signature _____
 (Sign)
9. Authorizing Print Name & Title: _____
10. Vendor's Hamilton County Business License Number _____
 (If Applicable) *Attach A Copy Of The License.*
11. I Acknowledge the Receipt Of: (Please Write "Yes" If You Received One)
 Addendum 1 _____ Addendum 2 _____ Addendum 3 _____ Addendum 4 _____
12. Do you accept the Terms and Conditions of the solicitation/contract? Yes _____ No _____
13. May other Government Agencies in Tennessee purchase these products/services at the same prices as this bid/proposal? Yes _____ No _____
14. Will you accept E-commerce payments? Yes _____ No _____
15. Pricing: Complete following page Bid/Proposal Form

REMINDER:

All questions pertaining to this solicitation must be submitted electronically to doe_purchasing@hcde.org no later than **8 calendar days** prior to the Opening/Due date designated herein. Failure to submit a question in the timeframe indicated above may result in the question going unanswered at the discretion of HCS.

An extension to the opening date does not guarantee an extension to the question deadline period. Such will be communicated in associated addendum posting.

It is the sole responsibility of the Vendor to ensure they receive/obtain all solicitation related documentation.



BID/PROPOSAL FORM

COMPANY NAME: _____

SOLICITATION: BID 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE

Having carefully examined the Solicitation/Contract Documents, Contractor/Vendor proposes to furnish the Scope of Services as described herein and within all applicable proposal submission documents for the fee(s) as presented below.

Pricing shall be inclusive of all labor, equipment, supplies, overhead, profit, material, and any other incidental costs required to perform and complete all work as specified in the Solicitation/Contract Documents. All Unit Prices shall be bid at the nearest whole penny.

In the event there is a discrepancy between a subtotal or total amount and the unit prices and extended amounts, the unit prices shall prevail and the corrected extension(s) and total(s) will be considered the price.

HCS requests bids/proposals be submitted on bid/proposal forms provided by the HCS for this solicitation. Fee(s) submitted on other forms, other than those provided by the HCS, may be deemed Non-Responsive upon review by and at the sole discretion of the HCS Purchasing Office.

EAST HAMILTON HIGH TRACK & FIELD EVENT SITE

Item	Description	Extended Amount
1	Base Bid	\$
2	General Purpose Allowance	\$80,000.00

BID SUMMARY

PROJECT TOTAL	\$
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PROJECT TOTAL:

(Use Words to Write Total)

CERTIFICATE OF COMPLIANCE

By indication of the authorized signature below, the Proposer/Bidder does hereby make certification and assurance, under penalty of perjury, of the Proposer's/Bidder's compliance with all provisions of this bid/bid and the following items:

1. the laws of the State of Tennessee and Hamilton County;
2. Title VI of the Civil Rights Act of 1964;
3. Title IX of the Education Amendments of 1972
4. the condition that no amount shall be paid directly or indirectly to an employee or official of Hamilton County Department of Education as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Proposer/Bidder in connection with the procurement under this Bid/RFP.

Signed _____ Dated _____

Print Name _____ Email _____

Company _____ Telephone No. _____

Address _____ Fax No. _____

City _____ State _____ Zip _____

AUTHORIZATION TO BIND

By signing this proposal, I certify and acknowledge that the information contained in this document is true and correct, containing **NO** misrepresentations. The information is **NOT** tainted by any collusion. I certify and acknowledge that I have reviewed and approved the release of this proposal/bid for HCS's consideration. Further, I am authorized to bind my company to the responses and pricing in these proposal/bid documents, and any subsequent negotiations, as well as execute the actual Contract documents, if selected.

Authorized Signature (Officer of the Company)

Name of Authorized Signer (Printed or Typed)

Title of Authorized Signer

Firm Name

Taxpayer Identification Number

Firm Address, City and Zip Code

Telephone Number

Fax Number

Email Address

Date

**Drug-Free Workplace Requirements & Affidavit
TENNESSEE CODE ANNOTATED, § 50-9-113**

- (1) Each Contractor or Subcontractor with no less than five (5) employees receiving pay shall submit an affidavit stating that such employer has a drug-free workplace program in effect at the time of submission of bids. Said program shall comply with Title 50, Chapter 9, TCA.
- (2) If it is determined that an employer subject to the provisions of this section has entered into a contract for this Project and does not have a drug-free workplace pursuant to the referenced requirements, such employer shall be prohibited from entering into another contract with any local government or state agency until such employer can prove compliance.
- (3) The written affidavit shall be submitted with the Construction Contractor's Bid Form, and the Bid shall not be considered complete if said affidavit is not included, and the Bid shall be rejected as Non-Responsive. For all other product or service contracts submission of the affidavit is encouraged only.
- (4) For purposes of compliance with this section, any private employer shall obtain a certificate of compliance with the applicable portions of the Drug-Free Workplace Act from the Department of Labor and Workforce Development.

(To be submitted with bid by construction contractor with 5 or more employees and encouraged for all others)

AFFIDAVIT

I _____, president or other principal

Officer of _____, swear or affirm that the
(Name of Company)

Company has a drug-free workplace program that complies with Title 50, Chapter 9, Tennessee Code Annotated, in effect at the time of this bid submission at least to the extent required of governmental entities. I further swear or affirm that the company is in compliance with the Tennessee Code Annotated, § 50-9-113.

President of Principal Officer

For: _____

STATE OF TENNESSEE}
COUNTY OF _____}

Subscribed and sworn before me by _____, President

or principal officer of _____,

On this _____ day of _____, 20_____.

NOTARY PUBLIC

My Commission Expires: _____

Instructions for Non-Collusion Affidavit

- (1) This non-collusion affidavit is material to any contract awarded pursuant to this bid.
- (2) This non-collusion affidavit must be executed by the member, officer, or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.
- (3) Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that such statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval or submission of the bid.
- (4) In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an affidavit must be submitted separately on behalf of each party.
- (5) The term "complementary bid" as used in the Affidavit has the meaning commonly associated with that term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, and intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.

**Non-Collusion Affidavit
(Attachment A)**

State of _____

County of _____

I state that I am _____ of _____
(Title) (Name of Firm)

and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

- (1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder, or potential bidder.
- (2) Neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
- (3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- (4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (5) _____, its affiliates, subsidiaries, officers, directors and
(Name of my Firm)
employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that _____ understands and acknowledges that the
(Name of my Firm)

above representation are material and important and will be relied on by Hamilton County Department of Education in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from Hamilton County Department of Education of the true facts relating to submission of bids for this contract.

(Signature and Company Position)

SWORN TO AND SUBSCRIBED
BEFORE ME THIS _____ DAY OF
_____, 20 _____

NOTARY PUBLIC:

My Commission Expires: _____

**CERTIFICATION OF COMPLIANCE WITH
THE IRAN DIVESTMENT ACT**

Effective July 1, 2016, this form must be submitted for any contract that is subject to the Iran Divestment Act, Tenn. Code Ann. § 12-12-101, et seq., ("Act"). This form must be submitted with any bid or bid regardless of where the principal place of business is located.

Pursuant to the Act, this certification must be completed by any corporation, general partnership, limited partnership, limited liability partnership, joint venture, nonprofit organization, or other business organization that is contracting with a political subdivision of the State of Tennessee.

Certification Requirements.

No state agency or local government shall enter into any contract subject to the Act, or amend or renew any such contract with any bidder/contractor who is found ineligible under the Act.

Complete all sections of this certification and sign and date it, under oath, in the presence of a Notary Public or a person authorized to take an oath in another state.

CERTIFICATION:

I, the undersigned, certify that by submission of this bid, each bidder and each person signing on behalf of any Respondent certifies, and in the case of a joint bid or contract each party thereto certifies, as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to Tenn. Code Ann. § 12-12-106.

Respondent represents it has the full power, knowledge, and authority to make this Certification and that the signatory signing this Certification on behalf of bidder/contractor has been duly authorized to do so on behalf of the bidder/contractor.

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

Company Name

Signature of Authorized Official

State of _____

County of _____

The foregoing instrument was signed and acknowledged before me, by means of physical presence or personally known, this _____ day of _____, 20____, by

_____ who has produced _____ as identification.
(Print or Type Name) (Type of Identification and Number)

Notary Public Signature

Printed Name of Notary Public

Notary Commission Number/Expiration

The signee of these Affidavit guarantees, as evidenced by the sworn affidavit required herein, the truth and accuracy of this affidavit to interrogatories hereinafter made.

**Hamilton County Board of Education
Certification Regarding Debarment, Suspension,
Ineligibility and Voluntary Exclusion**

The prospective participant / vendor certifies, by submission of this bid, that neither it nor its Principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal Department or agency.

Where the prospective participant / vendor is unable to certify to any of the statements in this Certification, such prospective participant / vendor shall attach an explanation to this bid.

Organization Name

Name(s) and Title(s) of Authorized Representative(s)

Signature

Certification of Compliance with Tennessee Public Chapter # 587

The General Assembly of the State of Tennessee requires any person, corporation or other entity who enters into or renews a contract with a local board of education comply with Tennessee Public Chapter #587 (TPC587).

TPC587 requires persons, employees of the person or corporation that have direct contact with school children or access to school grounds when children are present to have supplied to the corporation a fingerprint sample and have conducted a criminal history records check by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation prior to permitting the person to have contact with such children or enter school grounds. (The Public Chapter 1080, (D) was amended to: “A person whose contract is for the performance of a service at a school-sponsored activity, assembly or even at which school officials or employees are present when the service is performed and where the activity, assembly, or event is conducted under the supervision of school officials or employees.”)

TPC587 provides guidance for employees who have been convicted of an offense that is classified as a sexual offense or a violent sexual offense.

I have read the attached TENNESSEE PUBLIC CHAPTER # 587 and certify compliance with the regulations.

Name/Address of Organization

Name/Title of Submitting Official

Signature

Date

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

_____ as Principal, and _____

as Surety, are hereby held and firmly bound unto Hamilton County Department of Education, Tennessee

as Owner in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed, this _____ day of _____, 20____.

The condition of the above obligated is such that whereas the Principal has submitted to Hamilton County Department of Education, Tennessee, a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing for the Project known as: 23-30, EAST HAMILTON HIGH TRACK & FIELD EVENT SITE.

NOW, THEREFORE,

(a) If said Bid shall be rejected, or in the alternate.

(b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection herewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

Surety

Principal (L.S.)

By: _____

Title

Title

SEAL



FUNDING NOTICE & PROVISIONS

NOTICE: the services being requested and the associated Agreement are funded in whole or in part with Federal funds in addition to general funds of the agency. As such, the applicable federal provisions of Appendix II, supported and enforced by the 2 CFR Part 200.327, and provided within this Funding Notice & Provisions section shall apply to the Agreement and where/as applicable to the Work performed.

Consultant/Contractor/Vendor agrees, through signature and certification provided below, to abide by and comply with all Federal terms, conditions, provisions, certifications, affidavits, or otherwise as applicable and stated herein and further agrees to incorporate all such clauses, provisions, and regulations into any sub-contracted agreements or equivalent business relationships the Consultant/Contractor/Vendor creates to support the Consultant/Contractor/Vendor’s servicing to HCS.

When the funding source or the applicability of any provision provided herein is not clear, it shall be the sole responsibility of the Consultant/Contractor/Vendor to clarify any such items with the HCS authorized Project Manager or Sponsoring Department prior to omitting or not performing any action or requirement.

Name & Address of Consultant/Contractor/Vendor

Name & Title of Submitting Authorized Official

Signature of Authorized Official

Date

CERTIFICATION REGARDING LOBBYING

Applicable to Grants, Subgrants, Cooperative Agreements, and Contracts Exceeding \$100,000 in Federal Funds. Submission of this certification is a prerequisite for making or entering into this transaction and is imposed by section 1352, title 31, U.S. Code. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into of a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all covered sub awards and that all sub recipients shall certify and disclose accordingly to undersigned.

Name & Address of Consultant/Contractor/Vendor

Name & Title of Submitting Authorized Official

Signature of Authorized Official Date

Complete as applicable only.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB
4040-0013

1. * Type of Federal Action: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
4. Name and Address of Reporting Entity: <input checked="" type="checkbox"/> Prime <input type="checkbox"/> SubAwardee * Name: <input style="width: 100%;" type="text"/> * Street 1: <input style="width: 45%;" type="text"/> Street 2: <input style="width: 45%;" type="text"/> * City: <input style="width: 30%;" type="text"/> State: <input style="width: 30%;" type="text"/> Zip: <input style="width: 15%;" type="text"/> Congressional District, if known: <input style="width: 40%;" type="text"/>		
5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime: <div style="border: 1px solid black; height: 100px;"></div>		
6. * Federal Department/Agency: <input style="width: 100%;" type="text"/>	7. * Federal Program Name/Description: <input style="width: 100%;" type="text"/> CFDA Number, if applicable: <input style="width: 40%;" type="text"/>	
8. Federal Action Number, if known: <input style="width: 100%;" type="text"/>	9. Award Amount, if known: \$ <input style="width: 60%;" type="text"/>	
10. a. Name and Address of Lobbying Registrant: Prefix: <input style="width: 10%;" type="text"/> * First Name: <input style="width: 30%;" type="text"/> Middle Name: <input style="width: 30%;" type="text"/> * Last Name: <input style="width: 40%;" type="text"/> Suffix: <input style="width: 15%;" type="text"/> * Street 1: <input style="width: 45%;" type="text"/> Street 2: <input style="width: 45%;" type="text"/> * City: <input style="width: 30%;" type="text"/> State: <input style="width: 30%;" type="text"/> Zip: <input style="width: 15%;" type="text"/>		
b. Individual Performing Services (including address if different from No. 10a) Prefix: <input style="width: 10%;" type="text"/> * First Name: <input style="width: 30%;" type="text"/> Middle Name: <input style="width: 30%;" type="text"/> * Last Name: <input style="width: 40%;" type="text"/> Suffix: <input style="width: 15%;" type="text"/> * Street 1: <input style="width: 45%;" type="text"/> Street 2: <input style="width: 45%;" type="text"/> * City: <input style="width: 30%;" type="text"/> State: <input style="width: 30%;" type="text"/> Zip: <input style="width: 15%;" type="text"/>		
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. * Signature: <input style="width: 100%;" type="text"/> * Name: Prefix: <input style="width: 10%;" type="text"/> * First Name: <input style="width: 30%;" type="text"/> Middle Name: <input style="width: 30%;" type="text"/> * Last Name: <input style="width: 40%;" type="text"/> Suffix: <input style="width: 15%;" type="text"/> Title: <input style="width: 30%;" type="text"/> Telephone No.: <input style="width: 30%;" type="text"/> Date: <input style="width: 30%;" type="text"/>		
Federal Use Only:		Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)

Attachment: Immigration Law Affidavit Certification

This Affidavit is required and should be signed by an authorized principal of the Consultant/Contractor/Vendor and submitted with HCS Procurements where applicable. Further, Consultant/Contractor/Vendor are required to enroll in the E-Verify program, and provide acceptable evidence of their enrollment, upon request by HCS personnel. Acceptable evidence consists of a copy of the properly completed E-Verify Company Profile page or a copy of the fully executed E-Verify Memorandum of Understanding for the company.

HCS will not intentionally award HCS contracts to any vendor who knowingly employs unauthorized alien workers, constituting a violation of the employment provision contained in 8 U.S.C. Section 1324 a(e) Section 274A(e) of the Immigration and Nationality Act (“INA”).

HCS may consider the employment by any vendor of unauthorized aliens a violation of Section 274A (e) of the INA. Such Violation by the recipient of the Employment Provisions contained in Section 274A (e) of the INA shall be grounds for unilateral termination of the contract by HCS.

Vendor attests that they are fully compliant with all applicable immigration laws (specifically to the 1986 Immigration Act and subsequent Amendment(s)) and agrees to comply with the provisions of the Memorandum of Understanding with E-Verify and to provide proof of enrollment in The Employment Eligibility Verification System (E-Verify), operated by the Department of Homeland Security in partnership with the Social Security Administration at any time upon request by HCS.

Name & Address of Consultant/Contractor/Vendor

Name & Title of Submitting Authorized Official

Signature of Authorized Official

Date

FUNDING PROVISIONS**1. EQUAL EMPLOYMENT OPPORTUNITY:**

1.1. During the performance of this contract, the contractor agrees as follows:

- A. The Consultant/Contractor/Vendor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Consultant/Contractor/Vendor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Consultant/Contractor/Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- B. The Consultant/Contractor/Vendor will, in all solicitations or advertisements for employees placed by or on behalf of the Consultant/Contractor/Vendor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- C. The Consultant/Contractor/Vendor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Consultant/Contractor/Vendor's legal duty to furnish information.
- D. The Consultant/Contractor/Vendor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of the Consultant/Contractor/Vendor's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- E. The Consultant/Contractor/Vendor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- F. The Consultant/Contractor/Vendor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- G. In the event of the Consultant/Contractor/Vendor's non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the Consultant/Contractor/Vendor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- H. The Consultant/Contractor/Vendor will include the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each sub-Consultant/Contractor/Vendor. The Consultant/Contractor/Vendor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the Consultant/Contractor/Vendor becomes involved in, or is threatened with, litigation with a sub-Consultant/Contractor/Vendor as a result of such direction, the Consultant/Contractor/Vendor may request the United States to enter into such litigation to protect the interests of the United States.

2. MAINTENANCE OF RECORDS:

- 2.1. The Consultant/Contractor/Vendor will keep and maintain adequate records and supporting documentation applicable to all of the services, work, information, expense, costs, invoices and materials provided and performed pursuant to the requirements of this agreement. Said records and documentation will be retained by the Consultant/Contractor/Vendor for a minimum of seven (7) years from the date of termination of this agreement, or for such period is required by law.
- 2.2. Consultant/Contractor/Vendor shall provide, when requested, access by HCS, Federal granting agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the Consultant/Contractor/Vendor which are directly pertinent to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- 2.3. Consultant/Contractor/Vendor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- 2.4. Consultant/Contractor/Vendor agrees to provide the Grant Agency Administrator or his authorized representatives' access to construction or other work sites pertaining to the work being completed under the contract.
- 2.5. Consultant/Contractor/Vendor shall retain all records associated with this Agreement for a period of no less than five (5) years after final payments and all other pending matters are closed.
- 2.6. HCS and its authorized agents shall, with reasonable prior notice, have the right to audit, inspect and copy all such records and documentation as often as HCS deems necessary during the period of this agreement, and during the period as set forth in the paragraphs above; provided, however, such activities shall be conducted only during normal business hours of the Consultant/Contractor/Vendor and at the expense of HCS.

3. DHS SEAL, LOGO, AND FLAGS

- 3.1. The Consultant/Contractor/Vendor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific Grant Agency pre-approval.

4. LOCAL VENDOR PREFERENCE EXCLUSION

- 4.1. Local Vendor Preference is not applicable to this Agreement and subsequent contract and/or purchase order(s).

5. COMPLIANCE WITH FEDERAL LAW, REGULATIONS, and EXECUTIVE ORDERS

- 5.1. This is an acknowledgment that Grant Agency financial assistance will be used only to fund the services requested. The Consultant/Contractor/Vendor will comply with all applicable federal law, regulations, executive orders, Grant Agency policies, procedures, and directives.

6. NO OBLIGATION BY THE FEDERAL GOVERNMENT

- 6.1. The Federal Government is not a party to this Agreement and is not subject to any obligations or liabilities to the non-Federal entity, Consultant/Contractor/Vendor, or any other party pertaining to any matter resulting from the Agreement.

7. FRAUD and FALSE OR FRAUDULENT OR RELATED ACTS

- 7.1. The Consultant/Contractor/Vendor acknowledges that 31 U.S.C. Chapter 38 (Administrative Remedies for False Claims and Statements) applies to the Consultant/Contractor/Vendors actions pertaining to this Agreement.

8. SUBCONTRACTS

- 8.1. The selected firm must require compliance with all federal requirements of all sub-Consultant/Contractor/Vendors performing work for Prime Consultant/Contractor/Vendor under this Agreement, by including these federal requirements in all contracts with sub-Consultant/Contractor/Vendors.

9. CONFLICT OF INTEREST:

- 9.1. No employee, officer, or agent may participate in the selection, award, or administration of a contract supported by a Federal award if he or she has a real or apparent conflict of interest. Such a conflict of interest would arise when the employee, officers, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract. The officers, employees, and agents of the non-Federal entity must neither solicit nor accept gratuities, favors, or anything of monetary value from Consultant/Contractor/Vendors or parties to subcontracts.

10. EMPLOYMENT ELIGIBILITY VERIFICATION SYSTEM (E-VERIFY):

- 10.1. Statutes and Executive Orders require employers to abide by the Immigration laws of the United States and to employ only individuals who are eligible to work in the United States. The Employment Eligibility Verification System (E-Verify) operated by the U.S. Department of Homeland Security (DHS) in partnership with the Social Security Administration (SSA) to provides an internet-based means of verifying employment eligibility of workers in the united States; it is not a substitute for any other employment eligibility verification requirements.
- 10.2. Sub-Consultant/Contractor/Vendor requirement: Vendors shall require all subcontracted vendors to flow down the requirement to use E-Verify to sub-Consultant/Contractor/Vendors.
- 10.3. It shall be the vendor's responsibility to familiarize themselves with all rules and regulations governing this program.
- 10.4. For additional information regarding the Employment Eligibility Verification System (E-Verify) program visit the following website: <http://www.dhs.gov/E-Verify>.

11. ENERGY POLICY AND CONSERVATION ACT

- 11.1. Consultant/Contractor/Vendor must follow any mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

12. DOMESTIC PREFERENCES FOR PROCUREMENT (2 C.F.R. § 200.322)

- 12.1. As appropriate and to the greatest extent consistent with law, state and non-state entities should, to the greatest extent practicable under its Grant Agency award, provide a preference for the purchase of goods, products or materials produced in the United States (including but not limited to iron, aluminum, steel, cement and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. 2 C.F.R. § 200.322 also provides specific definitions for "Produced in the United States" and "manufactured products" that Consultant/Contractor/Vendor should review.
- 12.2. For purposes of this section: (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products" means items and construction materials composed in whole or in part of nonferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

13. PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS OR SERVICES (2 C.F.R. § 200.216)

- 13.1. 2 C.F.R. § 200.216 prohibits state and non-state entities from obligating or expending loan or grant funds to procure or obtain, extend or renew a contract to procure or obtain, or enter into a contract (or extend or renew a contract) to procure or obtain, equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as a critical technology as part of any system as identified in Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY 2019 NDAA), Pub. L. No. 115-232 (2018) and 2 C.F.R. §§ 200.216, 200.327, 200.471, and Appendix II to 2 C.F.R. Part 200. See Prohibitions on Expending Grant Agency Award Funds for Covered Telecommunications Equipment or Services- Interim Policy for additional information.

14. TERMINATION FOR CAUSE AND/OR CONVENIENCE:

- 14.1. HCS, by written notice to the Consultant/Contractor/Vendor, may terminate this Agreement with or without cause (for convenience), in whole or in part, when HCS determines in its sole discretion that it is in HCS's best interest to do so. In the event of termination the Consultant/Contractor/Vendor will not incur any new obligations for the terminated portion of the Agreement after the Consultant/Contractor/Vendor has received notification of termination.
- 14.2. If the Agreement is terminated before performance is completed, the Consultant/Contractor/Vendor shall be paid only for that work satisfactorily performed for which costs can be substantiated. Such payment, however, may not exceed an amount that is the same percentage of the Agreement price as the amount of work satisfactorily completed is a percentage of the total work called for by this Agreement. All work in progress shall become the property of HCS and shall be turned over promptly by the Consultant/Contractor/Vendor.

15. SUSPENSION AND DEBARMENT

- 15.1. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the Consultant/Contractor/Vendor is required to verify that none of the Consultant/Contractor/Vendor, its principals

(defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. §180.935).

- 15.2. The Consultant/Contractor/Vendor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- 15.3. This certification is a material representation of fact relied upon by the awarded Consultant/Contractor/Vendor. If it is later determined that the Consultant/Contractor/Vendor did not comply with 2 C.F.R. pt.180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to HCS, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- 15.4. The Consultant/Contractor/Vendor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

16. RECOVERED MATERIALS

- 16.1. In the performance of this contract, the Consultant/Contractor/Vendor shall make maximum use of products containing recovered material that are EPA-designated items unless the product cannot be acquired:
 - Competitively within a timeframe providing for compliance with the contract performance schedule;
 - Meeting contract performance requirements; or
 - At a reasonable price.
- 16.2. Information about this requirement is available EPA'S Comprehensive Procurement Guidelines web site, <http://www.epa.gov/cpg/> The list of EPA- designate items is available at <http://www.epa.gov/cpg/products/htm>

17. REMEDIES

- 17.1. In the event the Consultant/Contractor/Vendor fails to satisfactorily perform or has failed to adhere to the terms and conditions under this Agreement, HCS may, upon fifteen (15) calendar days written notice to the Consultant/Contractor/Vendor and upon the Consultant/Contractor/Vendor's failure to cure within those fifteen (15) calendar days, exercise any one or more of the following remedies, either concurrently or consecutively:
 - 17.1.1. Withhold or suspend payment of all or any part of a request for payment.
 - 17.1.2. Require that the Consultant/Contractor/Vendor refund to HCS any monies used for ineligible purposes under the laws, rules and regulations governing the use of these funds.
 - 17.1.3. Exercise any corrective or remedial actions, to include but not be limited to:
 - 17.1.4. Requesting additional information from the Consultant/Contractor/Vendor to determine the reasons for or the extent of non-compliance or lack of performance;
 - 17.1.5. Issuing a written warning to advise that more serious measures may be taken if the situation is not corrected;
 - 17.1.6. Advising the Consultant/Contractor/Vendor to suspend, discontinue or refrain from incurring costs for any activities in question; or
 - 17.1.7. Requiring the Consultant/Contractor/Vendor to reimburse HCS for the amount of costs incurred for any items determined to be ineligible.

18. OTHER REMEDIES AND RIGHTS:

- 18.1. Pursuing any of the above remedies will not keep HCS from pursuing any other rights or remedies, which may be otherwise available under law or in equity. If HCS waives any right or remedy in this Agreement or fails to insist on strict performance by the Consultant/Contractor/Vendor, it will not affect, extend or waive any other right or remedy of HCS, or affect the later exercise of the same right or remedy by HCS for any other default by the Consultant/Contractor/Vendor.
- 18.2. Unless otherwise provided by the Contract, all claims, counter-claims, disputes and other matters in question between HCS and the Consultant/Contractor/Vendor arising out of or relating to the Agreement between the parties, or the breach of it, that cannot be resolved by and between the parties after conferring in good faith, will be decided by a

court of competent jurisdiction pursuant to Tennessee law. If such dispute is in state court, venue shall be in the courts of Hamilton County.

19. CONTRACT WORK HOURS & SAFETY STANDARDS: For Agreements exceeding \$100,000 with use of mechanics or laborers.

- 19.1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- 19.2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- 19.3. Withholding for unpaid wages and liquidated damages. The State of Tennessee Division of Emergency Management or equivalent office shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- 19.4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

20. CLEAN AIR ACT: For Agreements exceeding \$150,000.

- 20.1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- 20.2. The contractor agrees to report each violation to the Grant Agency and the Regional Office of the Environmental Protection Agency and understands and agrees that the Grant Agency and the Regional Office of the Environmental Protection Agency will, in turn, report each violation as required to assure notification to HCS, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 20.3. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by Grant Agency.

21. FEDERAL WATER POLLUTION CONTROL ACT

- 21.1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- 21.2. The contractor agrees to report each violation to the Grant Agency and the Regional Office of the Environmental Protection Agency and understands and agrees that the Grant Agency and the Regional Office of the Environmental Protection Agency will, in turn, report each violation as required to assure notification to HCS, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 21.3. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by Grant Agency.

22. BYRD ANTI-LOBBYING AMENDMENT:

- 22.1. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with nonfederal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient. Consultant/Contractor/Vendors who apply or bid for an award of \$100,000 or more shall file the required certification.

23. CONTRACT CHANGES OR MODIFICATIONS

- 23.1. No alterations, amendment, changes, modifications or additions to any contract resulting from this bid shall be binding on HCS without the prior written approval of HCS.

24. RIGHTS TO INVENTIONS MADE UNDER AN AGREEMENT

- 24.1. If the Federal award meets the definition of “funding agreement” under 37 CFR §401.2 (a) and HCS enters into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the Agreement must comply with the requirements of [37 CFR Part 401](#), “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations.

25. CIVIL RIGHTS ASSURANCE STATEMENT

- 25.1. The vendor hereby agrees that it will comply with:
1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.);
 2. Title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.);
 3. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794);
 4. Age Discrimination Act of 1975 (42 U.S.C. 6101 et seq.);
 5. Title II and Title III of the Americans with Disabilities Act (ADA) of 1990 as amended by the ADA Amendment Act of 2008 (42 U.S.C. 12131-12189);
 6. Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency." (August 11, 2000);
 7. Where USDA applies: All provisions required by the implementing regulations of the Department of Agriculture (USDA) (7 CFR Part 15 et seq.);
 8. Department of Justice Enforcement Guidelines (28 CFR Parts 35, 42 and 50.3);
 9. Where USDA applies: Food and Nutrition Service (FNS) directives and guidelines to the effect that, no person shall, on the grounds of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or otherwise be subject to discrimination under any program or activity for which the Program applicant receives Federal financial assistance from USDA; and hereby gives assurance that it will immediately take measures necessary to effectuate this Agreement.
 10. Where USDA applies: The USDA non-discrimination statement that in accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs).

27. Where USDA applies:

(1) This assurance is given in consideration of and for the purpose of obtaining any and all Federal financial assistance, grants, and loans of Federal funds, reimbursable expenditures, grant, or donation of Federal property and interest in property, the detail of Federal personnel, the sale and lease of, and the permission to use Federal property or interest in such property or the furnishing of services without consideration or at a nominal consideration, or at a consideration that is reduced for the purpose of assisting the recipient, or in recognition of the public interest to be served by such sale, lease, or furnishing of services to the recipient, or any improvements made with Federal financial assistance extended to the Program applicant by USDA. This includes any Federal agreement, arrangement, or other contract that has as one of its purposes the provision of cash assistance for the purchase of food, and cash assistance for purchase or rental of food service equipment or any other financial assistance extended in reliance on the representations and agreements made in this assurance.

(2) Food service staff will be funded by School Nutrition funds, a non-federal entity subject to the provisions in 2 CFR 200. Therefore, the fees for food service positions cannot be quoted using cost plus a percentage of cost, per 2 CFR 200.324(d). The proposer must provide pricing for food service staff using a cost plus fixed-fee method. Other position types may be quoted using either pricing method.

Affix this page to your sealed solicitation envelope to identify it as a "Sealed Submission/Proposal".

PROPOSAL DOCUMENTS • DO NOT OPEN	
SOLICITATION No.:	23-30
SOLICITATION TITLE:	EAST HAMILTON HIGH TRACK & FIELD EVENT SITE
OPENING/DUE DATE:	April 10, 2023
TIME DUE:	Prior to: 2:00 PM
SUBMITTED BY:	_____
	(Name of Company)
<small>e-mail address</small>	<small>Telephone</small>
DELIVER TO:	Hamilton County Board of Education Attn: Purchasing Department 3074 Hickory Valley Road Chattanooga, TN 37421

CONTRACTOR LICENSING DETAILS

Prime Contractor:

- Name: _____
- Address: _____
- TN Contractor's License Number: _____
- License Expiration Date: _____
- License Category of Classification: _____

- TN Contractor's License Number: _____
- License Expiration Date: _____
- License Category of Classification: _____

Electrical Contractor:

- Name: _____
- Address: _____
- TN Contractor's License Number: _____
- License Expiration Date: _____
- License Category of Classification: _____

Masonry Contractor:

- Name: _____
- Address: _____
- TN Contractor's License Number: _____
- License Expiration Date: _____
- License Category of Classification: _____

Other Contractor: _____

- Name: _____
- Address: _____
- TN Contractor's License Number: _____
- License Expiration Date: _____
- License Category of Classification: _____

HVAC Contractor:

- Name: _____
- Address: _____

***Notices:**

- The Date Due/Submission Deadline Date/Opening Date as stated on this label and other forms contained herein may have been updated via issuance of Addenda against this project. It is the sole responsibility of the Contractor/Vendor to monitor the HCS solicitation for any updates to the Date Due/Submission Deadline Date/Opening Date via Addenda. This label or other original forms may not be updated. Contractor/Vendor may strike through and update Date Due/Submission Deadline Date/Opening Date at their discretion to match any updates to this date that have been published via Addenda.
- Submissions received after the time and date of the Date Due/Submission Deadline Date/Opening Date will not be accepted at the sole discretion of HCS.
- Some submissions may require the Vendor to provide the company name, Tennessee Contractor's license number, expiration date, license classification and company address on the outside of the sealed bid envelope in accordance with TCA 62-6-119. Where this is requested within the project documents the Vendor is solely responsible for compliance with this request.
- Please print clearly.

CONTRACT FORMS

Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope

AGREEMENT made as of the «xx» day of «xx» in the year «Two Thousand Twenty Three (In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Hamilton County Department of Education»« »
«3074 Hickory Valley Road
Chattanooga, TN 37421»
«Telephone Number: (423) 498-7030
« »

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)
East Hamilton High School Track & Field Improvements
2015 Ooltewah Ringgold Road
Ooltewah, TN 37363»
Track & Field Improvements

The Engineer:
(Name, legal status, address and other information)

Autumn Friday, P.E
1250 Market Street #3046
Chattanooga, TN 37402»
«Telephone Number: 423-209-7821

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.



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TABLE OF ARTICLES

- 1 THE WORK OF THIS CONTRACT
- 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 3 CONTRACT SUM
- 4 PAYMENT
- 5 DISPUTE RESOLUTION
- 6 ENUMERATION OF CONTRACT DOCUMENTS
- 7 GENERAL PROVISIONS
- 8 OWNER
- 9 CONTRACTOR
- 10 ENGINEER
- 11 SUBCONTRACTORS
- 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 13 CHANGES IN THE WORK
- 14 TIME
- 15 PAYMENTS AND COMPLETION
- 16 PROTECTION OF PERSONS AND PROPERTY
- 17 INSURANCE & BONDS
- 18 CORRECTION OF WORK
- 19 MISCELLANEOUS PROVISIONS
- 20 TERMINATION OF THE CONTRACT
- 21 CLAIMS AND DISPUTES

EXHIBIT A DETERMINATION OF THE COST OF THE WORK

ARTICLE 1 THE WORK OF THIS CONTRACT

The Contractor shall execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

« The date of commencement will be in a Fixed Notice to Proceed. »

§ 2.2 The Contract Time shall be measured from the date of commencement.

§ 2.3 The Contractor shall achieve Substantial Completion of the entire Work not later than « one hundred twenty » (« 120 ») days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

« »

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

« »

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

[« X »] Stipulated Sum, in accordance with Section 3.2 below

[« »] Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

[« »] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

§ 3.2.2 Unit prices, if any:

(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)
------	-----------------------	-------------------------

§ 3.2.3 Allowances included in the stipulated sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Allowance
1. General Purpose Allowance	\$80,000.00

§ 3.3 COST OF THE WORK PLUS CONTRACTOR'S FEE

§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4 COST OF THE WORK PLUS CONTRACTOR'S FEE WITH A GUARANTEED MAXIMUM PRICE

§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4.3 GUARANTEED MAXIMUM PRICE

§ 3.4.3.1 The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed « » (\$ « »), subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

(Insert specific provisions if the Contractor is to participate in any savings.)

« »

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

« »

§ 3.4.3.3 Unit Prices, if any:

(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)
------	-----------------------	-------------------------

§ 3.4.3.4 Allowances included in the Guaranteed Maximum Price, if any:

(Identify and state the amounts of any allowances, and state whether they include labor, materials, or both.)

Item	Allowance
------	-----------

§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

« »

ARTICLE 4 PAYMENTS

§ 4.1 PROGRESS PAYMENTS

§ 4.1.1 Based upon Applications for Payment submitted to the Engineer by the Contractor and Certificates for Payment issued by the Engineer, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 4.1.3 Provided that an Application for Payment is received by the Engineer not later than the « 25th » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « 10th » day of the « next » month. If an Application for Payment is received by the Engineer after the date fixed above, payment shall be made by the Owner not later than « thirty » (« 30 ») days after the Engineer receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 Retainage, if any, shall be withheld as follows:

« Five percent (5%) retainage will be withheld until Closeout is complete. »

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

« » % « »

§ 4.2 FINAL PAYMENT

§ 4.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a guaranteed maximum price; and
- .3 a final Certificate for Payment has been issued by the Engineer.

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Engineer's final Certificate for Payment, or as follows:

« »

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 BINDING DISPUTE RESOLUTION

For any claim subject to, but not resolved by, mediation pursuant to Section 21.3, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.)

[] Arbitration pursuant to Section 21.4 of this Agreement

[] Litigation in a court of competent jurisdiction

[] Other (Specify)

« »

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A107-2007, Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope.

§ 6.1.2 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
AIA Document A107-2007	Standard Form of Agreement between Owner and Contractor for a Project of Limited Scope		18
Section 00800	Supplementary General Conditions		4

§ 6.1.3 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

« Title of Specifications exhibit: Exhibit "A" »

Section	Title	Date	Pages

§ 6.1.4 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

« »

Number	Title	Date
C1.0	Cover Sheet	03/15/23
C2.0	Existing Conditions Plan	03/15/23
C3.0	Site Plan	03/15/23
C4.0	Grading Plan	03/15/23
C5.0	Erosion Control Phase I	03/15/23
C6.0	Erosion Control Phase II	03/15/23
C7.0	Erosion Details	03/15/23
C8.0	Details	03/15/23
C9.0	Details 2	03/15/23

§ 6.1.5 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are enumerated in this Article 6.

§ 6.1.6 Additional documents, if any, forming part of the Contract Documents:

- .1 Exhibit A, Determination of the Cost of the Work, if applicable.
- .2 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed, or the following:

« »

- .3 Other documents:

ARTICLE 7 GENERAL PROVISIONS

§ 7.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of

this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Engineer. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 7.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

§ 7.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 7.4 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Engineer and the Engineer's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 7.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 7.5.1 The Engineer and the Engineer's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Engineer's or Engineer's consultants' reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Engineer and the Engineer's consultants.

§ 7.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmission, unless otherwise provided in the Agreement or in the Contract Documents.

ARTICLE 8 OWNER

§ 8.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 8.1.1 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.2 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.3 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order is eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

§ 8.3 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner, without prejudice to any other remedy the Owner may have, may correct such deficiencies and may deduct the reasonable cost thereof, including Owner's expenses and compensation for the Engineer's services made necessary thereby, from the payment then or thereafter due the Contractor.

ARTICLE 9 CONTRACTOR

§ 9.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 9.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 9.1.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.1, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Engineer any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Engineer may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

§ 9.1.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Engineer any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Engineer may require.

§ 9.2 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 9.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

§ 9.2.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 9.3 LABOR AND MATERIALS

§ 9.3.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 9.3.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Engineer and in accordance with a Modification.

§ 9.4 WARRANTY

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

§ 9.5 TAXES

The Contractor shall pay sales, consumer, use and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 9.6 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 9.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as other permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 9.6.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 9.7 ALLOWANCES

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Allowance amounts shall not include the Contractor's costs for unloading and handling at the site, labor, installation, overhead, and profit.

§ 9.8 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 9.8.2 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Engineer.

§ 9.9 SUBMITTALS

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Engineer reasonable time for review. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Engineer that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.10 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 9.11 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 9.12 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus material from and about the Project.

§ 9.13 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Engineer. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Engineer.

§ 9.14 ACCESS TO WORK

The Contractor shall provide the Owner and Engineer access to the Work in preparation and progress wherever located.

§ 9.15 INDEMNIFICATION

§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 10 ENGINEER

§ 10.1 The Engineer will provide administration of the Contract and will be an Owner's representative during construction, until the date the Engineer issues the final Certificate for Payment. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 The Engineer will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for safety precautions

and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.3 On the basis of the site visits, the Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 10.4 Based on the Engineer's evaluations of the Work and of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 10.5 The Engineer has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.6 The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.7 The Engineer will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Engineer will make initial decisions on all claims, disputes and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

§ 10.8 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 10.9 Duties, responsibilities and limitations of authority of the Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Engineer. Consent shall not be unreasonably withheld.

ARTICLE 11 SUBCONTRACTORS

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Engineer the names of the Subcontractors or suppliers for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Engineer has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Engineer, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or

operations on the site under conditions of the contract identical or substantially similar to these, including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such claim as provided in Article 21.

§ 12.2 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor and Engineer, or by written Construction Change Directive signed by the Owner and Engineer.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Engineer, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Engineer will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Engineer will prepare a Change Order.

§ 13.3 The Engineer will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Engineer promptly and before conditions are disturbed.

ARTICLE 14 TIME

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Engineer in accordance with Section 15.4.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by changes ordered in the Work, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties or any causes beyond the Contractor's control, or by other causes which the Engineer determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine, subject to the provisions of Article 21.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 APPLICATIONS FOR PAYMENT

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit to the Engineer, before the first Application for Payment, a schedule of values, allocating the entire Contract Sum to the various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used in reviewing the Contractor's Applications for Payment.

§ 15.1.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor, less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 15.1.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.1.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests.

§ 15.2 CERTIFICATES FOR PAYMENT

§ 15.2.1 The Engineer will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Engineer determines is properly due, or notify the Contractor and Owner in writing of the Engineer's reasons for withholding certification in whole or in part as provided in Section 15.2.3.

§ 15.2.2 The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's evaluations of the Work and the data comprising the Application for Payment, that, to the best of the Engineer's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Engineer has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.2.3 The Engineer may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinion the representations to the Owner required by Section 15.2.2 cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner as provided in Section 15.2.1. If the Contractor and the Engineer cannot agree on a revised amount, the Engineer will promptly issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. The Engineer may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 15.2.4 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 15.3 PROGRESS PAYMENTS

§ 15.3.1 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in similar manner.

§ 15.3.2 Neither the Owner nor Engineer shall have an obligation to pay or see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 15.3.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 15.4 SUBSTANTIAL COMPLETION

§ 15.4.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 15.4.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 15.4.3 Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Engineer determines that the Work or designated portion thereof is substantially complete, the Engineer will issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion, establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 15.4.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 15.5 FINAL COMPLETION AND FINAL PAYMENT

§ 15.5.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when the Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Engineer's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.5.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.5.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.5.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 15.5.4 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3, except for damage or loss attributable to acts or omissions of the Owner or Engineer or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

§ 16.2 HAZARDOUS MATERIALS

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Engineer in writing. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay and start-up.

ARTICLE 17 INSURANCE AND BONDS

Reference Section 00800-Supplementary General Conditions, Article 17 for insurance requirements.

§ 17.4 PERFORMANCE BOND AND PAYMENT BOND

§ 17.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 17.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Engineer or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense, unless compensable under Section A.2.7.3 in Exhibit A, Determination of the Cost of the Work.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.4.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located, except, that if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.4.

§ 19.3 TESTS AND INSPECTIONS

Tests, inspections and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating the costs to the Contractor.

§ 19.4 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements

of the final dispute resolution method selected in the Agreement within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 19.4.

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 TERMINATION BY THE CONTRACTOR

If the Engineer fails to certify payment as provided in Section 15.2.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' written notice to the Owner and the Engineer, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 20.2 TERMINATION BY THE OWNER FOR CAUSE

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the above reasons exists, the Owner, upon certification by the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' written notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Engineer's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Engineer, upon application, and this obligation for payment shall survive termination of the Contract.

§ 20.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Engineer but excluding those arising under Section 16.2, shall be referred initially to the Engineer for decision. Such matters, except those waived as provided for in Section 21.8 and Sections 15.5.3 and 15.5.4, shall, after initial decision by the Engineer or 30 days after submission of the matter to the Engineer, be subject to mediation as a condition precedent to binding dispute resolution.

§ 21.2 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 21.3 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the

mediation. The request may be made concurrently with the binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 21.4 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any claim, subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association, in accordance with the Construction Industry Arbitration Rules in effect on the date of this Agreement. Demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 21.5 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 21.6 Any party to an arbitration may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described in the written Consent.

§ 21.7 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 21.8 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 20. Nothing contained in this Section 21.8 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

Bryan Johnson, Superintendent

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

CONDITIONS OF THE CONTRACT

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS**1. INTRODUCTION:**

These Supplementary General Conditions and the Specifications bound herewith shall be subject to all the requirements of Form A107 of the "Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope", 2007 edition, issued by the American Institute of Architects, Washington, D.C., except that these Supplementary General Conditions shall modify, delete and/or add to the General Conditions. Where any article, paragraph or sub-paragraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph or sub-paragraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph, or sub-paragraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such articles, paragraph, or sub-paragraph not so amended, voided, or superseded shall remain in effect.

2. SUPPLEMENTS AND CHANGES TO THE ABBREVIATED GENERAL CONDITIONS, A.I.A. FORM A107, 1997 EDITION.**ARTICLE 7.1 - CONTRACT DOCUMENTS:** Add the following to 7.1 -**7.1.1 INTERPRETATION:**

If, during the time that Contractors are preparing bids for this work, there should appear to be a conflict between plans and specifications, or a lack of clearness in either, they are requested to notify the Architect so that any necessary explanation may be given to all bidders. If no such notification is given it will be assumed that all conditions are fully understood.

7.1.2 DISCREPANCIES:

The following principles shall govern the settlement of disputes which may rise over discrepancies in contract documents: (a) as between figures given on drawings and the scaled measurements, figures shall govern; (b) as between large-scale drawings and small-scale drawings, the larger scale shall prevail; (c) as between drawings and specifications, the requirements of the specifications shall govern; (d) as between the Form of Agreement and the specifications, the requirements of the Form of Agreement shall govern. Discrepancies noted shall be reported to the Architect as soon as discovered. The principles set forth herein shall not alter provisions of Article 2 or the A.I.A. General Conditions.

7.1.3 MEASUREMENTS:

Before ordering any materials or doing any work, each Contractor shall verify all measurements of the building and shall be responsible for correspondence of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the Drawings. Any differences which may be found shall be submitted to the Architect for considerations before proceeding with the work.

ARTICLE 7.5 – OWNERSHIP AND USE OF ARCHITECT’S DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE: Add the following to

7.5-

7.5.3 ADDITIONAL OWNERSHIP

Hamilton County Department of Education shall be named as additional owner of any drawings, specifications or instruments of service prepared by the Architect in employ by Hamilton County Department of Education and will retain all common law, statutory and other reserved rights, in addition to the copyrights. Any legal right afforded to the Architect as stipulated in this article shall also be extended to Hamilton County Department of Education.

ARTICLE 8 - OWNER: Add the following:

8.1.4 The Architect shall furnish to the Contractor, without cost, five (5) sets of construction drawings and five (5) sets of the specifications. Additional sets of drawings and specifications will be furnished to the Contractor, at his request, at a cost as set forth in Section 1 of the Specifications, General Requirements.

ARTICLE 9.4 – WARRANTY: Add the following:

9.4.1 “A one (1) year warranty period for all labor and material shall begin at the time of Substantial Completion and shall cover all Work, regardless of the time of actual completion of any portion of the Work.”

ARTICLE 13 - CHANGES IN THE WORK Add the following:

13.5 CHANGE ORDERS

13.5.1 Before each change order is issued, the General Contractor shall submit to the Architect a proposal, which shall be a complete itemized breakdown not limited to the following:

- 1) Unit costs of materials
- 2) Material costs
- 3) Labor costs
- 4) Contractor’s allowance for overhead and profit
- 5) Total cost to Owner
- 6) Calendar days required for extension of contract for completion if required.

13.5.2 The allowance for overhead and profit combined, included in the total cost to the Owner shall be based upon the following schedule:

- 1) For the contractor, for any work performed by his own forces, 15% (10% overhead plus 5% profit) of the cost.
- 2) For each subcontractor or supplier involved, for work performed by his own forces, 15% (10% overhead plus 5% profit) of the cost with an additional 5% allowed to the Contractor.

ARTICLE 15 - PAYMENTS AND COMPLETION: Add the following:

15.2 – CERTIFICATES FOR PAYMENT:

15.2.5 Payments will be made on or about fifteen days after receipt of the Application for Payment for work and materials incorporated in the building or delivered on the site. Unless otherwise specified or agreed upon, five percent (5%) will be retained until the contract is substantially complete, at which time the amount retained may be reduced,

or a specific amount withheld because of inability to do so, the Contractor shall furnish releases or show evidence that all bills have been paid.

ARTICLE 16 – PROTECTION OF PERSONS AND PROPERTY 16.2

- HAZARDOUS MATERIALS

16.2.2 Delete this paragraph in its entirety.

16.2.3 Delete this paragraph in its entirety.

ARTICLE 17 - INSURANCE

Paragraphs 17.1 through 17.3 of the General Conditions which pertain to insurance shall be deleted in its entirety and replaced as follows:

All policies shall be purchased from Insurance Companies acceptable to the Architect and Owner.

17.1 Insurance to be purchased and maintained by Owner: None Contractor shall acknowledge that it, and its employees, serves as independent contractors and that HCDE shall not be responsible for any payment. insurance or incurred liability.

17.2 Insurance to be purchased by Contractor:

Before starting work, the Contractor shall furnish to the Architect and Owner duplicate certificates of insurance from an insurance company licensed in the state where this project occurs and covers the following items. Insurance carrier to carry Best's rating of A or higher. The certificates of insurance are to contain an agreement that such policy, or policies, will not be cancelled within thirty (30) days advance written notice of such cancellation being given to the Owner and the Architect. The Owner and The Architect are to be listed as additional insureds on the Policies except Worker's Compensation.

17.2.1 Builder's Risk Insurance:

The Contractor shall purchase Builder's Risk Insurance to cover building materials and structures and personal property against loss due to vandalism, malicious mischief and all risks associated with the construction project. Said insurance policy shall include the names of the Owner, the Contractor, and Sub-contractors, as their interest may appear, and to cover the full value of the property. Two copies of the certificates of this insurance shall be furnished to the Architect and Owner before the work is started.

17.2.2 Statutory Worker's Compensation and Employer's Liability Insurance:

1. This Worker's Compensation coverage must comply with the statutory provisions of the State of Tennessee.
2. Before any Sub-contractor is permitted to begin work on the premises, the Contractor shall obtain certificates of insurance from the Subcontractor covering Worker's Compensation Insurance.
3. This policy shall include Employer's Liability Coverage for \$1,000,000.00 per occurrence.

17.2.3 Business Automobile Liability Insurance:

1. This policy must contain limits of liability, as follows or \$1,000,000.00 per occurrence for bodily injury and property damage.
2. The policy must provide coverage for all owned and non-owned automobiles.

17.2.4 Commercial General Liability:

The policy must contain minimum limits of liability as follows or \$1,000,000.00 per occurrence for bodily injury and property damage, and include coverage for the following:

1. Premise / Operations
2. Products / Completed Operations
3. Personal Injury
4. XCU Operations
5. Contractual Liability
6. E & O

ARTICLE 19 - MISCELLANEOUS PROVISIONS: Add the following:**19.5 LAYING OUT BUILDING**

The General Contractor shall establish a permanent bench mark to which easy access may be had during the progress of the work, determine all lines and grades for the work, and verify same from time to time during the progress of the work. The Contractor shall be responsible for all layout work.

19.6 SUBSTITUTIONS

When reference is made to trade names or to names of manufacturers, such references are made solely to designate and identify the quality of material or equipment to be furnished and are not intended to restrict the use of equal material or equipment, except where specifically stated otherwise. In case the Contractor wishes to use materials and equipment other than those mentioned in the specifications, prior written approval of the Architect must be obtained. The Architect will approve such materials and equipment upon written request if he considers them to be suitable and equal to those specified.

19.7 PATTERNED WORK

This shall apply to ceramic floor and wall materials, plastic floor tile, acoustical ceilings, and all work resulting in a finished surface with a pattern. Units shall be laid out from the center of the area so that units at edges shall be equal and as large as possible. No unit shall be smaller than ½ size.

19.8 MANUFACTURER'S SPECIFICATIONS

All materials and equipment shall be installed in strict compliance with the most current, printed, published, specifications and instructions of the manufacturer or supplier of the materials and equipment, except the Architect's Specifications shall take precedence over any such printed matter.

19.9 AWARD

The right is reserved to accept or reject any or all proposals presented and to waive informalities therein.

END OF SECTION

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK**PART 1 - GENERAL****1.01 WORK COVERED BY CONTRACT DOCUMENTS****A. EAST HAMILTON HIGH SCHOOL TRACK AND FIELD IMPROVEMENTS**

This project includes demolition of the existing 8-lane track and track and field event structures and the construction of a new 8-lane 400 meter track with new track and field structures. The 8-lane track will include laser grading, base material asphalt paving, red plexi track surfacing and striping. Field event structures include high jump, long jump, triple jump, shot put, discuss, and pole vault. The track and all field events shall be built per NFHS (National Federation of State High School Associations) standards. Contractor shall provide verification that the track is constructed and striped per NFHS Standards. The lump sum bid shall include the construction of erosion control measures, channel drain, drainage improvements, earthwork, fencing, sidewalk, including all labor, supervision, equipment, and all other incidentals to construct the track in accordance with NFHS regulations, and attached plans and specifications. Contractor shall be required to verify the location of all utilities and coordinate any utility relocations with utility companies and/or Hamilton Department of Education. Contractor shall be a "Certified Track Builder" or have a "Certified Track Builder" as part of its team. Contractor shall submit "as-built" drawings as part of the close-out documentation.

B. Related Requirements Specified Elsewhere:

1. Schedule of Values and Progress Schedule: Section 01370
2. Construction Facilities and Temporary Controls: Section 01500
3. Contract Closeout: Section 01700
4. Cleaning: Section 01710
5. Project Data: Section 01725

C. Contractor's Duties:

1. Except as specifically noted, provide and pay for:
 - a. Labor, supervision, materials, and equipment.
 - b. Tools, construction equipment, and machinery.
 - c. Other facilities and services necessary for proper execution and completion of work.
2. Pay legally required sales, consumer and use taxes.
3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
 - a. Permits
 - b. Government fees
 - c. Licenses
4. Given required notices.

5. Comply with codes, ordinances, rules, regulation, order and other legal requirements of public authorities which bear on performance of work.
6. Promptly submit written notice to HCDE of observed variance of Contract Documents from legal requirements.
 - a. Appropriate modifications to Contract Documents will adjust necessary changes.
 - b. Assume responsibility for work known to be contrary to such requirements.
7. Enforce strict discipline and good order among employees. Do not employ on work:
 - a. Unfit persons
 - b. Persons not skilled in assigned task.
8. General Contractor's Project Manager:

The General Contractor shall furnish a Project Manager, acceptable to the Owner, in addition to the job superintendent, who shall be responsible for the following:

 - a. Direct communication, observation, responsibility and control of all sub-contractors and suppliers.
 - b. To be a liaison between HCDE and all sub-contractors and material sub-contractors and material suppliers. The Owner will not communicate with or control the sub-contractors and material suppliers.
 - c. Thoroughly review, check, coordinate and approve all shop drawings and submittals.
 - d. Schedule and supervise all job site progress meetings. Job site meetings with all sub-contractors who have work in progress must be scheduled at least bi-weekly and the Engineer and Owner must be notified at least two (2) days in advance.
 - e. Immediately report to HCDE any discrepancy, deficiency or deviation from the drawings and specifications.
 - f. Gather and assemble all information required for the preparation of Field Orders or Change Orders when required.
 - g. Maintain records for as-built drawings and all warranty information.
 - h. To be available by phone at all times within one (1) day notice or call.

1.02 CONTRACTS

- A. Project will be constructed under a single contract under the direction of the General Contractor.
- B. The Owner reserves the right to award other contracts for additional work in connection with this project as required to install improvements, furnish, or equip the building.
- C. There shall be complete cooperation between Contractor and sub-contractors to ensure satisfactory progress and performance of the work.

1.03 COORDINATION WITH HAMILTON DEPARTMENT OF EDUCATION (HCDE)

- A. HCDE will be on the site at required intervals during construction and will be available upon reasonable notification by Contractor.

1.04 WORK SEQUENCE

- A. Contractor shall submit with the Schedule of Values a schedule of work sequence for the major portions of work to be done. This schedule shall indicate the time work will commence and be completed on each separate portion.

1.05 CONTRACTOR'S USE OF PREMISES

- A. Subcontractors shall limit their use of the premises for work and storage, to allow for:
 - 1. Work by other subcontractors.
 - 2. Ongoing use of the facility for storage purposes.
- B. Coordinate use of premises under direction of the General Contractor.
- C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

1.06 PARTIAL OWNER OCCUPANCY

- A. The Contractor shall allow the Owner to take possession of and use any completed or partially completed portion of the work, or to place and install as much of his own furniture and equipment during the progress of the work as is possible without interference before its entire completion; such possession and use of structure or work or such placing and installation of equipment, or both, shall not in any way evidence completion of the work or any part of it.
- B. After the specified time of completion, it shall be understood that the Owner will not be liable for any inconvenience caused the Contractor by the Owner's occupancy.

1.07 SCOPE OF SPECIFICATIONS

- A. Use of the word "all" has generally been omitted, but coverage in all cases is intended to be complete, except where partial coverage is specifically indicated. In all such cases where the item is referred to in the singular number, it is intended that such reference shall apply to as many such items as are required to complete the work.
- B. Use of the word "shall" has generally been omitted, but all requirements set forth are mandatory except where otherwise qualified.

1.08 SPECIFICATION EXPLANATION

- A. For the convenience of reference and to facilitate the letting of contracts and subcontracts, these specifications are separated into titled Divisions. Such separations shall not, however, operate to make the Architect/Architect an arbitrator to establish limits to the contracts between the Contractor and Subcontractor.

1.09 CONDITIONS OF SURFACES

- A. It shall be the responsibility of each subcontractor to carefully inspect and examine surfaces or areas prepared to receive his work. Should they consider such surfaces or areas not proper or satisfactory for the installation or application of their work, they shall notify the Contractor in writing, with copy to HCDE. Should they proceed before proper corrections have been made, it shall be at their own risk and any subsequent corrections that may be ordered or required shall be at their expense.

1.10 PROTECTION OF EXISTING STRUCTURES

- A. The Contractor shall protect the existing structures or grounds in the area from damage caused by his work or workmen, and be responsible for any damage thus caused.
- B. The Contractor shall be responsible to repair or replace to its original condition all areas disturbed by construction, including, but not limited to, paving, trees, drives, walks, lawns, landscaping, utilities, etc.

END OF SECTION

SECTION 01021 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Selected materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise HCDE of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At the Engineers request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by the Engineer from the designated supplier.

PART 3 - EXECUTION 3.1 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.2 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1:

1. Include a General Purpose Allowance of **eighty thousand Dollars (\$80,000.00)** for use upon the Owner's Instructions.
2. The General Purpose Allowance shall be used only as directed for the Owner's purposes and only by Construction Change Directives that designate amounts to be charged to this allowance.
3. General Contractor's overhead and profit will not be allowed on items applied to the General Allowance. Subcontractor's overhead and profit will be allowed according to the Supplementary Conditions.
4. In the event all or part of this allowance is not directed to be utilized by the Owner, then that amount shall be credited to the Owner by Change Order.
5. This allowance is separate and apart from any allowances listed in other sections of the specification.

END OF SECTION 01021

SECTION 01030 - ALTERNATES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing Alternates.

1.3 DEFINITIONS

A. Definition: An alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.
 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.
 - B. Notification: Immediately following the award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
 - C. Execute accepted alternates under the same conditions as other Work of this Contract.
-

PART 2 - PRODUCTS (Not Applicable)

ALTERNATES

01030 - 1

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

END OF SECTION 01030

SECTION 01035 - ADDITIONAL PROJECT PROCEDURES**PART 1 - GENERAL****1.01 APPLICATION FOR PAYMENT**

- A. The form for applications shall be AIA Documents G720, Application and Certification and G703 Continuation Sheet. Submit the Application for Payment to HCDE in accordance with the schedule established by Conditions of the Contract and Agreement between the Owner and Contractor.
- B. The Continuation Sheets for the application shall be itemized with the line items and values of the Schedule of Values accepted by HCDE.
- C. Submit the original and three copies of each Application with three copies of an updated progress schedule, visitor's log and shop drawing log to HCDE.
- D. When HCDE finds the Application properly completed and correct, he will transmit a certificate for payment to the Owner, with a copy to the Contractor. The Owner will pay the approved request fifteen (15) days following receipt of the request from the Designer.

1.02 CHANGE ORDER FORM AND PROCEDURES

- A. Change Orders shall be submitted on AIA Document G701. A detailed breakdown of cost is required. Signatures by all parties signing the original agreement form are required on each Change Order. No work required by a Change Order shall be accomplished prior to receiving written approval from the Owner.
- B. All cost estimates provided by the General Contractor shall be accompanied by certified backup documentation from each subcontractor whose work is affected.
- C. HCDE will apply the appropriate amounts of Overhead and Profit to each Change Order in accordance with Section 00800 Supplementary General Conditions, Article 12. The General Contractor and Subcontractors will not include Overhead and Profit in any Cost Estimates submitted.

1.03 SHOP DRAWING LOG

- A. The Contractor shall maintain a Shop Drawing Log identified with Project Name and project number showing the title of each submittal, date of submittal, date returned, and status. Submit copies of this Shop Drawing Log with each pay request.

1.04 VISITOR'S LOG

- A. The Contractor shall maintain a log in the field office to record visits by the Designer, his consultants and all official observers. This log shall become the official record of all job visits and shall show: Date, Time of arrival and departure, Name and who represented. The Owner will furnish a form upon request: however, the form is not required - only the information.
- B. The Contractor shall submit a copy of this log with each pay request indicating Project Name, Project Number, and period covered by log.

1.05 REQUEST FOR INFORMATION (RFI)

- A. The General Contractor's Project Manager or Superintendent shall initiate any questions or requests, regarding the Contract Documents or other aspect of the project to the Architect in writing by use of the RFI form following this specification section.
- B. After receipt of the "RFI", the Architect shall reach a decision with regard to the request and provide a written reply on the RFI in the space provided.
- C. The use of the RFI does not take the place of verbal communications between the Architect and Contractor, but will serve as a written record of these transactions.
- D. All RFI's shall be telefaxed between the Contractor and Architect.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION (Not Applicable)**

Response Submitted: (Date)_____ (Time)_____

By: _____

WEATHER DELAYS

1. GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Standards set for weather delays
- B. Procedures for claim submittals

1.2 EXTENSIONS OF CONTRACT TIME

- A. If the basis exists for an extension of time in accordance with the General Conditions, then an extension of time on the basis of weather may be granted only for the number of weather delay days in excess of the number of weather days listed as the Standard Baseline for that month.

1.3 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

- A. The Engineer has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined the Standard Baseline of average climatic range for the State of Tennessee.
- B. The Standard Baseline shall be regarded as the normal and anticipated number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is to be included in the work and not eligible for an extension of the contract time. Saturdays and Sundays are eligible workdays.
- C. The Standard Baseline for lost days due to adverse weather are as follows:

JAN	12
FEB	12
MAR	12
APR	10
MAY	11
JUN	08
JUL	11
AUG	07
SEP	09
OCT	08
NOV	09
DEC	12

1.4 ADVERSE WEATHER AND WEATHER DELAY DAYS

- A. Adverse weather is defined as the occurrence of one or more of the following conditions which prevents only exterior construction activity or access to the site within a 24 hour period as determined by the Engineer:

Precipitation (rain, snow, or ice).

Temperatures which prevent work to be performed in accordance with specifications.

- B. A weather delay day may be counted only if adverse weather prevents work on the project for 50 percent or more of the Contractor's scheduled work day, including a weekend day of holiday if the Contractor has scheduled construction activity that day.
- C. Contractor is responsible for sealing the site before a weather event and dewatering/demucking after a weather event.
- D. In the event of a delay due to weather, Contractor shall notify the Engineer via email or fax within two hours of the start of a delay. Contractor to provide notice daily for any ongoing delays.

1.5 DOCUMENTATION AND SUBMITTALS

- A. Submit Daily Jobsite Work Log showing which and to what extent construction activities have been affected by weather on a monthly basis.
- B. Submit actual weather data to support a claim for the time extension obtained from the nearest NOAA weather station or other independently verified source approved by the Engineer at the beginning of the project.
- C. Maintain a rain gauge, thermometer, and clock at the jobsite. Keep daily records of precipitation, temperature, and the time of each occurrence throughout the project.
- D. Use the Standard Baseline data provided in this section when documenting actual delays due to weather in excess of the average.
- E. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods and submit in accordance with the procedures for claims established in the General Conditions.
- F. No extra cost will be incurred by the Owner for any extra time increase to the contract.
- G. Contractor shall maintain rainfall records for the duration of the project and shall also maintain NPDES General Permit maintenance records and logs relative to rainfall, runoff, and erosion control measures for his construction activity. In accordance with the NPDES criteria, the Contractor shall make all required submittals to the regulatory authorities.

END OF SECTION 01040

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL 1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 1 Section "Summary of Work.
 2. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 15 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Request approval to proceed.
Include the following information, as applicable, in the proposal:
- A. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
 - B. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements, along with associated costs.
 - C. List products to be used and firms or entities that will perform Work.
 - D. Indicate dates when cutting and patching will be performed. Coordinate any required shut-downs with Owner's Project representative. 72 hour notice is required.
 - E. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted. 72 hour notice is required.
 - F. Where cutting and patching involves adding reinforcement to structural elements, submit details and architecting calculations showing integration of reinforcement with the original structure.
 - G. Approval by the Engineer to proceed with cutting and patching does not waive the Engineer's right to later require complete removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Foundation construction.
 - a. Bearing and retaining walls.
 - b. Structural concrete.
 - c. Structural steel.
 - d. Lintels.
 - e. Structural decking.
 - f. Stair systems.
 - g. Miscellaneous structural metals.
 - h. Exterior curtain-wall construction.
 - i. Equipment supports.
 - j. Piping, ductwork, vessels, and equipment.
 - k. Structural systems of special construction in Division 13 Sections.
- B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.
1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment.
 - b. Air or smoke barriers.
 - c. Water, moisture, or vapor barriers.
 - d. Membranes and flashings.
 - e. Fire protection systems.
 - f. Noise and vibration control elements and systems.
 - g. Control systems.
 - h. Communication systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction in Division 13 Sections.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

- A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS 2.1 MATERIALS, GENERAL

- A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION 3.1 INSPECTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
 - 1. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

- B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
 4. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
 4. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

SECTION 01061 - NON DISCRIMINATORY/MINORITY HIRING

In determining the suitability and acceptability of proposed bidders, Hamilton County Department of Education reserves the right to consider each bidder's commitment to hire minorities and/or subcontract with minority contractors, relative to certain phases of the contracted services.

Except to the extent permitted by Federal Laws and Regulations for a bona fide occupational qualification, the Contractor agrees as follows:

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

The bidder/contractor agrees to comply with Title VI, as prescribed in the Civil Rights Act of 1964 (42 U.S.C. 2000(D)) and 28 CFR 42 et seq., which provides that "no person in the United States shall on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal Financial Assistance."

The Contractor will, in all solicitations for employees or job orders for employees placed with any employment agency, union, or other firm or agency, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, disability, national origin, sex or age. The words "equal opportunity employer" in all advertisements shall constitute compliance with this section.

The Contractor will include provisions of the foregoing paragraphs in every subcontract or purchase order for goods or services which are subject matter of this Agreement. The Owner shall have the right at his option, to cancel the Agreement in whole or in part.

The Contractor will contact the Chattanooga Urban League for assistance in providing minority job applicants. The Chattanooga Urban league shall be allowed to visit the jobsite to observe the minorities and to contact the Contractor if necessary to discuss the number of minorities employed.

The Contractor will have an affirmative action plan.

END OF SECTION

SECTION 01 20 00 - PROJECT MEETINGS**PART 1 - GENERAL****1.1 DESCRIPTION**

- A. The Engineer in concert with the Contractor shall schedule and administer a preconstruction meeting, and specially called meetings throughout the progress of the Work. The Contractor is responsible for the following:
 - 1. Prepare agenda for meetings.
 - 2. Make physical arrangements for meetings
 - 3. Record the minutes; include all significant proceedings and decisions.
 - 4. Reproduce and distribute copies of minutes within three days after each meeting.
 - a. To all participants in the meeting.
 - b. To all parties affected by decisions made at the meeting.
 - c. Email to the Engineer and all participants.
- B. Representatives of Contractors, Subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. The Engineer shall attend meetings to ascertain that work is expedited consistent with Contract Documents and the construction schedule.

1.2 PRECONSTRUCTION MEETING

- A. A Preconstruction meeting shall be scheduled at the project site within 15 days after date of Notice to Proceed.
- B. This meeting shall be attended by:
 - 1. Owner's representative
 - 2. The Engineer and his professional consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors
 - 6. Major Suppliers.
 - 7. Others as appropriate.
- C. The following is a suggested Agenda for this meeting:
 - 1. Review requirements of DIVISION 0 and 1 of the Project Manual.
 - 2. Projected Construction Schedules.
 - 3. Critical work sequencing.
 - 4. Major equipment deliveries and priorities.
 - 5. Project Coordination.
 - 6. Procedures and processing of:
 - a. Field Decisions
 - b. Submittals
 - c. Payroll submittals
 - d. Change Orders and itemization of cost.

- e. Applications for Payment
- 7. Extension of time (weather data shall be based on US Weather Bureau statistics)
- 8. Adequacy of distribution of Contract Documents.
- 9. Procedures for maintaining Record Documents.
- 10. Use of premises.
- 11. Construction facilities, controls and construction aids.
- 12. Temporary utilities.
- 14. Safety and first aid procedures.
- 15. Security procedures.
- 16. Housekeeping procedures.

1.3 PROGRESS MEETINGS

- A. Progress Meetings shall be scheduled at the Project Site prior to the Contractor submitting each Application for Payment or when requested by the Engineer.
- B. The meeting shall be attended by:
 - 1. The Owner's representative.
 - 2. The Engineer and his professional consultants as needed.
 - 3. Subcontractors as appropriate to the agenda.
 - 4. Suppliers as appropriate to the agenda.
 - 5. Others, as required.
- C. The following is a suggested agenda for this meeting:
 - 1. Review of work progress since previous meeting.
 - 2. Application for Payment
 - 3. Field observations, problems, conflicts.
 - 4. Problems which impede construction schedule.
 - 5. Review of off-site fabrication and delivery/schedules.
 - 6. Corrective measures and procedures to regain projected schedule
 - 7. Revisions to construction schedule.
 - 8. Plan progress, schedule, during succeeding work period
 - 9. Coordination of schedules.
 - 10. Review submittal schedules: expedite as required.
 - 11. Maintenance of quality standards
 - 12. Other business, as required.

END OF SECTION

SECTION 01300 SUBMITTALS

PART 1 – GENERAL

1.01 EQUIPMENT DELIVERY AND CONSTRUCTION SCHEDULE

Not later than ten (10) consecutive calendar days after the effective date of Agreement, the Contractor shall submit to the Engineer for review a detailed schedule of major equipment delivery and installation and general construction operations, indicating the sequence of the work, the estimated dates of starting each task, and the estimated time of completion of each task. The schedule shall be broken down with respect to individual structures and facilities, indicating when existing structures or equipment would be taken out of service, (if applicable). The form and content of the schedule shall be satisfactory to the Engineer.

1.02 SHOP DRAWINGS AND PRODUCT DATA

- A. The Contractor shall submit to the Engineer for review and approval complete drawings and engineering data for all equipment, materials, and products to be incorporated into the work. Shop drawings and engineering data shall be provided and the Engineer's review will be conducted in accordance with the requirements of the Supplementary General Conditions. Shop drawings and/or engineering data, as appropriate, shall be submitted for the following items, including, but not limited to:
1. All piping, pipe supports, hangers, couplings, gauges, and insulation.
 2. All Drainage Structures
 3. Bermuda Sod
 4. Channel Drain System/Layout
 5. Track coating material
 6. Grass seed, fertilizer, and commercial mulches.
 7. Field Event Layout and materials
 8. Fencing
 9. Erosion Control Plan including schedule and methods
- B. All shop drawings shall include a legend or other suitable means to identify all symbols and abbreviations used on the drawing. Where an accepted, industry-

wide drafting standard or symbol has been established for a particular item, information depicted on the shop drawings shall conform to that standard.

- C. Shop drawings shall be dimensioned using the U.S. standard unit of measurement (feet and/or inches). Size of drawing shall not exceed 24 inches by 36 inches. All scaled drawings and details shall have the scale clearly noted on the drawing or detail. All information shall be clear and legible.
- D. Each shop drawing and each item of engineering data shall bear the Contractor's approved stamp indicating that the Contractor has reviewed the drawing or data for conformance with the Contract Documents.

1.03 MISCELLANEOUS SUBMITTALS

The Contractor shall submit to the Engineer miscellaneous information, procedures, test data, samples, etc., in the manner and at the time specified in these Specifications and Contract Documents. Miscellaneous submittals shall include, but not be limited to, the following:

1. Project record documents.
2. Copies of original invoices of all equipment delivered to the site.
3. Drawings and details of erosion and sediment control structures.
4. Profile cut sheets (see sample in Standard Detail Section of these specifications.)

1.04 SAMPLES

At the Engineer's request, the Contractor shall furnish certified samples of materials utilized in the fabrication or production of equipment, materials, and products supplied under these Contract Documents. Cost of all such samples shall be borne by the Contractor. The samples will be tested by a qualified independent testing laboratory selected by the Owner to determine if the mechanical and chemical properties of the materials supplied are in accordance with the requirements of these Specifications and Contract Documents. The Owner shall pay for the laboratory testing of material samples provided by the Contractor. The Contractor shall pay for all retests made necessary by the failure of materials to conform to the requirements of these Specifications and Contract Documents.

END OF SECTION 01300

SECTION 01500 - CONSTRUCTION REQUIREMENTS, FACILITIES AND TEMPORARY CONTROLS PART 1 –**GENERAL 1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

1.3 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
1. Building code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, fire department, and rescue squad rules.
 5. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.4 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS 2.1 MATERIALS

- A. General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
 - 1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8inch- (16-mm-) thick exterior plywood.

2.2 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- C. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- D. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION 3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITIES

- A. General: Connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
- B. Water Service: Connect to existing water source if required.
- C. Temporary Electric Power Service: Connect to existing power service if required.
- D. Sanitary Facilities: Provide temporary facilities onsite for workers.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

3.5 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse. B. Maintenance: Maintain facilities in good operating condition until removal.

END OF SECTION 01500

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL 1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
1. Inspection procedures.
 2. Project close-out package
 3. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 2. Advise the Owner of pending insurance changeover requirements.
 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
 6. Deliver tools, spare parts, extra stock, and similar items.

8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 9. Complete final cleanup requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred, exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
 4. Submit consent of surety to final payment.
 5. Submit a final liquidated damages settlement statement.
 6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.
1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, reinspection will be repeated.
- C. Reinspection Fees: Should the Architect perform reinspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:

1. The Owner will deduct the amount of the determined compensation from the final payment due the Contractor.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PROJECT CLOSE-OUT PACKAGE

- A. The Contractor shall submit the following Close-Out Documents to the Designer as a single package:
 1. Project Data.
 2. Consent of Surety to release retainage and pay Contractor in full.
 3. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706).
 4. The final application for payment accompanied by a statement of accounting. The statement shall reflect all adjustments to the Contract Sum.
 - a. The original Contract Sum.
 - b. Additions and deductions resulting from:
 - Change Orders
 - Allowances
 - Unit Prices
 - Deductions for non-conforming work
 - Deductions for Liquidated Damages
 - Deductions for re-inspection payments
 - Other adjustments
 - c. Total Contract Sum as directed.
 - d. Previous Payments
 - e. Sum Remaining Due
- B. When the Designer has determined that the close-out submittal is complete and correct, he will prepare a Change Order, if necessary, reflecting the approved adjustments to the contract sum which were not previously made by Change Order.
- C. The Designer will submit to the Owner the Project Close-Out package and the signed final Change Order (if required) with a cover letter certifying that, to the best of his knowledge, the completion of the project is in compliance with the Contract Documents and the balance shown is due and payable.
- D. Close-Out Documents shall specify that; No Owner liability shall exist for payment of equipment, material or labor which has not been properly paid for by the Contractor.

3.2 FINAL CLEANING

- A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section 01710 "Cleaning".

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - b. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - c. Remove labels that are not permanent.
 - d. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - e. Leave Project clean and ready for occupancy.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 01700

SECTION 01710 - CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Related Requirements Specified Elsewhere:
 - 1. Summary of Work: Section 01010
 - 2. Cutting and Patching: Section 01045
 - 3. Construction Facilities and Temporary Controls: Section 01500
 - 4. Contract Close-Out: Section 01700

- B. Work includes: The work in this section is required of each contractor unless otherwise specified:
 - 1. Each contractor:
 - a. Maintain premises and adjacent properties free of waste, debris and rubbish caused by construction operations.
 - b. At completion of work, or at such other times as directed by the Architect, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight-exposed surfaces; leave work clean and ready for occupancy.
 - 2. General Contractor:
 - a. In addition to the work specified under "Each Contractor", supervise and coordinate the cleaning operations of all contractors.
 - b. At completion of project, leave project clean and ready for occupancy.

1.2 SAFETY REQUIREMENTS

- A. Standards: Maintain project in accord with following safety and insurance standards:
 - 1. Occupation Safety and Health Administration (OSHA).

- B. Hazards Control:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.

- C. Conduct cleaning and disposal operations to comply with Federal, State and local antipollution laws.
 - 1. Rubbish and waste materials shall not be burned or buried on project site.
 - 2. Volatile wastes such as mineral spirits, oil or paint thinner shall not be disposed of into storm or sanitary drains.

3. Wastes shall not be disposed of into streams and waterways.

1.3 SUBMITTALS

- A. Manufacturer's recommendations for specified cleaning products.
- B. Proposed cleaning products for products where manufacturer's recommendations are not specified.

PART 3 - EXECUTION 3.1 GENERAL

- A. Execute cleaning to ensure that building(s), grounds and public properties are maintained and free from accumulations of waste materials and rubbish.
- B. Twice weekly, during progress of work, clean site and public properties and dispose of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- D. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

END OF SECTION

DIVISION 2
SITework

**SECTION 02100
SITE PREPARATION**

PART 1 - GENERAL

1.01 PROJECT CONDITIONS

- A. Locate, protect, and maintain active utilities.
- B. Restore to original grades and conditions, areas adjacent to site disturbed or damaged as a result of site preparation work.

PART 2 - EXECUTION

2.01 CLEARING

- A. Clear and grub areas as required for site access and execution of the work.
- B. Remove trees, plants, undergrowth, other vegetation, and debris only within areas immediately impacted by construction. All other areas shall be left undisturbed.
 - 1. Fall trees in a manner to prevent injury to adjacent facilities and to trees scheduled to remain.
 - 2. Remove stumps and roots to a clear depth of 36" below subgrades. Remove stumps and roots to their full depth within 5'-0" of underground structures, utility lines, footings, and paved areas.
- C. Protect existing trees scheduled to remain against injury or damage, including cutting, breaking, or skinning of roots, trunks or branches; smothering by stockpiled construction materials, excavated materials or vehicular traffic within branch spread.

2.02 STRIPPING TOPSOIL

- A. Strip any available topsoil to its full depth at all areas to be regraded, resurfaced, or paved within contract limit work area.
- B. Stockpile topsoil in a location acceptable to the Owner, for use in finish grading.
 - 1. Stockpiled topsoil shall be free from trash, brush, stones over 3" diameter, and other extraneous matter.
 - 2. Grade and slope stockpiles for proper drainage and to prevent erosion.

3. No topsoil shall be removed from the site.
- C. Protect all areas which are not to be resurfaced or regraded, and adjacent areas outside of the contract limits from damage due to site preparation work.
 - D. Unless otherwise specified, topsoil and other unsuitable materials at the site and at a minimum distance of 5 feet beyond the surfaced area, shall be removed in such a manner to minimize disturbance of the remaining subgrade soils, and to facilitate placement of embankment materials and/or base course materials.

2.03 CLEANING

Upon completion of site preparation work, clean areas within contract limits, remove tools, and equipment. Provide site clear, clean and free of materials and debris and suitable for site work operations.

END OF SECTION 02100

**SECTION 02220
EARTHWORK**

PART 1 - GENERAL

1.01 SCOPE

- A. This Specification section includes earthwork and related operations, including, but not limited to, clearing and grubbing the construction site, excavating all classes of material encountered, handling, storage, transportation, and disposal of all excavated and unsuitable material, construction and compaction of fill and embankments, backfilling around structures, compacting, preparation of subgrades, surfacing and grading, and any other similar, incidental, or appurtenant earthwork operation which may be necessary to properly complete the work.
- B. The Contractor shall provide all services, labor, materials, and equipment required for all earthwork and related operations necessary or convenient to the Contractor for furnishing a complete work as shown on the Drawings or specified in these Contract Documents.
- C. The Contractor shall be responsible for making a thorough investigation of the surface and subsurface conditions of the site and any special construction problems, which might arise as a result of elevation differences and underground rock formations. No extra payment shall be made for these conditions.

1.02 GENERAL

- A. The elevation shown on the Drawings as existing are taken from the best existing data and are intended to give reasonable, accurate information about the existing elevations. They are not precise, and the Contractor should satisfy himself as to the exact quantities of excavation and fill required.
- B. Earthwork operations shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards.
- C. All excavated and filled areas for structures, trenches, fills, topsoil areas, embankments and channels shall be maintained by the Contractor in good condition at all times until final acceptance by the Owner. All damage caused by erosion or other construction operations shall be repaired by the Contractor using material of the same type as the damaged material.
- D. If soil borings are available for the area of this work; they will be on file at the Owner's address where they will be made available for review. This information is made available to the Contractor for such use as he may choose to make of it in

the preparation of his bid, but the Owner gives no guarantee, either expressed or implied, that it represents a true or complete cross section of all the material to be encountered in performing the excavation and earthwork on this project.

- F. The Contractor shall control grading in a manner to prevent water running into excavations. Obstruction of surface drainage shall be avoided and means shall be provided whereby storm water can be uninterrupted in existing gutters, other surface drains, or temporary drains.
- G. No classification of excavated materials will be made. Excavation and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract work, regardless of the type, character, composition, or condition thereof.
- H. Tests for compaction and density shall be conducted by the Engineer or by an independent testing laboratory selected by him. Costs of compaction tests performed by an independent testing laboratory shall be paid for directly by the Owner and not as a part of this Contract. The Contractor shall make all necessary excavations and shall supply any samples of materials necessary for conducting compaction and density tests. The cost of all retest made necessary by the failure of materials to conform to the requirements of these Contract Documents shall be paid by the Contractor.
- H. All earthwork operations shall comply with the requirements of OSHA Construction Standards, Part 1926, Subpart P, Excavations, Trenching, and Shoring, and Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations.
- I. It is understood and agreed that the Contractor has made a thorough investigation of the surface and subsurface conditions of the site and any special construction problems which might arise. The Contractor shall be responsible for providing all services, labor, equipment, and materials necessary or convenient to him for completing the work within the time specified in these Contract Documents.

PART 2 - EXECUTION

2.01 INITIAL SITE PREPARATION

- A. Preparatory to beginning of construction operations, the Contractor shall remove from the site all vegetative growth, trees, brush, stumps, roots, debris, and any other objectionable matter, including fences, buildings, and other structures shown on the Drawings in the construction areas which are designated for removal or which, if left in place, would interfere with the proper performance or completion of the contemplated work, would impair its subsequent use, or would form obstructions therein.

- B. Stumps and roots shall be grubbed and removed to a depth not less than 5 feet below grade. All holes or cavities which extend below the subgrade elevation of the proposed work shall be filled with compacted layers of crushed rock or earth backfill conforming to the requirements specified here for backfill. Organic material from clearing operations shall not be incorporated in excavation backfill or embankment material.
- C. The Contractor shall exercise special precautions for the protection and preservation of trees, cultivated shrubs, sod, fences, buildings, and other structures which are located in the construction area but not within designated clearing limits as shown on the Drawings or within the limits of embankments, excavations, or proposed structures. The Contractor shall be responsible for the repair and/or replacement of any of the aforementioned items damaged by his operation or construction activities.
- D. The Contractor shall remove and dispose of all excess material resulting from clearing or site preparation operations.

2.02 TEMPORARY SEDIMENT AND EROSION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkaways, according to requirements of authorities having jurisdiction.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

2.03 EXCAVATION

A. General

- 1. Excavation shall include the removal of all material from the area necessary for construction of an 8-lane 400 meter track and field events. Excavations shall provide adequate working space and clearances for the work to be performed therein.

B. Structural Excavation

- 1. Structural excavation shall consist of the removal of all materials necessary for the construction of structures, including tanks, foundations, footings, wetwells, dry wells, box culverts, flumes, channels, buildings, and other miscellaneous structures.

2. The bottom of structural excavations shall be true to the lines and grades shown on the Drawings. Faces of excavations shall not be undercut for extended footings. Except as provided herein for excavation of unsuitable material or rock, where the excavation is carried below the grade elevation shown on the Drawings, the Contractor shall backfill the void this made to the proper grade with Class B concrete at his own expense.

C. Trench Excavation

1. Trench excavation shall consist of the removal of materials necessary for the construction of water, sewer, and other pipelines and all appurtenant facilities including manholes, inlets, headwalls, collars, concrete saddles, piers and pipe protection called for on the Drawings.
2. Excavation for pipelines shall be made in open cut unless shown otherwise on the Drawings. Trenches shall be cut true to the lines and grades shown on the Drawings or established by the Engineer on the ground. The banks of trenches shall be cut in vertical, parallel planes equidistant from the pipe centerline. From an elevation 12 inches above the top of the pipe to the bottom of the trench, the horizontal distance between vertical planes for different sizes of pipe shall not exceed those shown on the Drawings. The bottom of the trench shall be cut carefully to the required grade of the pipe except where bedding materials or cradles are shown, in which case the excavation shall extend to the bottom of the bedding or cradles as shown on the Drawings or specified in these Contract Documents.
3. The use of a motor-powered trenching machine will be permitted but full responsibility for the preservation, replacement, and/or repair of damage to any existing utility services and private property shall rest with the Contractor.
4. Unless otherwise specified herein or shown on the Drawings, wherever pipe trenches are excavated below the elevation shown on the Drawings, the Contractor, at his own expense, shall fill the void thus made to the proper grade with Class B concrete or with compacted layers of crushed rock or sand conforming to the requirements specified here for backfill.

2.03 BACKFILLING

A. Materials

Materials for backfilling shall conform to the following requirements:

1. Select Earth Backfill:

Fine, sound, loose earth containing optimum moisture content for compaction to 90 percent of maximum density, free from all wood, vegetable matter, debris, and other objectionable material, and having scattered clods, stones, or broken concrete less than 2 inches in maximum dimension except that the maximum particle size shall be 3/4 inch when used with PVC or other flexible thermoplastic pipe.

2. Common Earth Backfill:
Sound, loose earth containing optimum moisture content for compaction to 90 percent of maximum density, free from all wood, vegetable matter, debris, and other objectionable material, and having scattered clods, stones, or broken concrete and pavement less than 6 inches in maximum dimension.
3. Sand:
Natural or imported sand conforming to ASTM D 1073.
4. Crushed Rock:
Crushed rock conforming to Section 903.05, Class A, Grade D of the Tennessee Department of Highways Standard Specifications for Road and Bridge Construction.
5. Class B Concrete:
Class B concrete as specified in the Section entitled "Cast-in-Place Concrete" of these Specifications.

B. Compaction

1. Unless otherwise specified herein, earth backfill shall be compacted to not less than 90 percent of the maximum density at optimum water content as determined by AASHTO T-99, Method A. Crushed stone and sand shall be compacted or consolidated to not less than 83 percent of the solid volume density as determined from the bulk specific gravity by AASHTO T-84 and T-85 and the dry weight of the aggregate.
2. Material that is too dry for adequate compaction shall receive a prior admix of sufficient water to secure optimum moisture content. Material having excessive water content shall not be placed at any time.
3. Unless otherwise specified herein backfill material required to be compacted shall be placed in horizontal layers not to exceed 6 inches in thickness (before compaction) and compacted in place by ramming, tamping, or rolling. Compaction shall be accomplished by power driven tools and machinery wherever possible. Compaction and consolidation of sand and crushed rock backfill shall be accomplished using vibrating equipment.

C. Backfilling Trenches

1. The backfilling of sewer, water, and other pipeline trenches shall be started immediately after the construction of same has been inspected and approved by the Engineer. Select backfill or bedding material if specified shall be placed in the trench under and on each side of the pipe in 6-inch layers for the full width of the trench and thoroughly and uniformly compacted by ramming and/or tamping to a minimum of 90 percent of the maximum density determined as specified herein. Select earth backfilling shall start above the class of pipe bedding as specified or shown on the Drawings. Sufficient select earth backfill shall be placed around the pipe and compacted to provide a cover of not less than 12 inches over the top of the pipe. Mechanical compactors or tampers shall not be used within 12 inches of pipe. Compaction in this area shall be accomplished by hand methods. Backfilling shall proceed simultaneously on both sides of the pipe to prevent lateral displacement.
2. Caution shall be used during backfill operations for PVC or other flexible thermoplastic pipe (non-pressure or sewer pipe) to prevent pipe deformation. Backfill shall be hand compacted on each side of the pipe only to a minimum of 12" of cover. PVC or other flexible thermoplastic pipe (sewer pipe) shall not be subjected to roller or wheel loads until a minimum of 36 inches of backfill has been placed over the top of the pipe and a hydrohammer shall NOT be used until a minimum depth of 48 inches backfill has been placed over the top of the pipe.
2. Backfilling of PVC pressure pipe or other flexible thermoplastic pipe (water pipe) shall be as described in Paragraph 1 above.
3. Trenches under concrete slabs and footings of structures shall be completely backfilled with crushed rock or filled with Class B concrete.
4. In all other areas not affected by superimposed loads, common earth backfill may be placed from a level of 12 inches above the top pipe upward for the full depth of the trench without compaction. At these places, backfill shall be neatly rounded over the trench to sufficient height to allow for settlement to grade after consolidation.
5. All backfilling shall be done in such a manner that the pipe or structure over or against which it is being placed will not be disturbed or injured. Any pipe or structure injured, damaged, or moved from its proper line or grade during backfilling operations shall be removed and repaired and then re-backfilled.

D. Backfilling Around Structures

1. Backfilling around structures shall consist of common earth backfill placed in 6-inch layers and compacted by tamping to a minimum of 90 percent of the

maximum density determined as specified herein for the full depth of the excavation from the bottom to the finished grade. No backfill shall be placed against concrete structures until the concrete has reached its specified 28-day compressive strength. Where practical, compaction of structural backfill shall be accomplished by power-driven tamping equipment.

2. Where crushed rock mats under slabs and foundations are called for on the Drawings, the Contractor shall excavate below grade to the depth of the crushed rock mat as shown on the Drawings and shall install a compacted crushed rock bed. This shall be finished to a true line or plane and even with the subgrade of the concrete foundations, piers, footings, or slabs. Before placing any crushed rock, all loose earth or debris shall be removed. This crushed rock mat shall extend 12 inches beyond all slabs and foundations or to edges of sheet piling.
3. Crushed rock mats, 12 inches or less in thickness, shall be constructed of compacted layers of crushed rock conforming to Section 903.05, Class A, Grade D, of the Tennessee Department of Highways, Standard Specifications for Road and Bridge Construction.
4. Crushed rock mats of thickness greater than 12 inches shall have the top 12 inches constructed of compacted layers of crushed rock as specified above. That portion below the top 12 inches shall be constructed of compacted layers of crushed rock conforming to Section 903.05, Class A, with a modified gradation of 6 inches to dust as received from the crusher.
5. Unless otherwise shown on the Drawings, the use of earth backfill to support footings, foundations, and structures shall not be permitted.

2.04 FILLS AND EMBANKMENTS

- A. Fills and embankments shall consist of all earth fills except backfills in trenches or around structures. Unless special material is specified or shown on the Drawings, material for fills and embankments shall consist of excavated material from structures or of a mixture of such excavated materials and materials borrowed from other sources by the Contractor. All material used for fills and embankments shall be free from wood, vegetable matter, debris, soft or spongy earth or clay, large rock, or other objectionable material and shall be acceptable to the Engineer.
- B. Materials shall be placed in the fill or embankment in successive layers 6 inches or less in thickness before compaction, each layer being approximately horizontal and extending to the full limit of the required cross section and shall be compacted at optimum water content over the entire surface to not less than 95 percent of the maximum density as determined by AASHTO T-99, Method A.

The process shall be repeated for each layer of material until the fill or embankment conforms to the plan lines, grades, and cross sections.

- C. The area over which the fill or embankment is to be constructed shall first be cleared of all vegetation, debris, and other objectionable material and, if the ground is in a loose, uncompacted condition, it shall be compacted to a minimum 95 percent of maximum density determined as specified herein.
- D. No material shall be placed beyond the sloping lines of embankment unless so ordered by the Engineer. Material allowed to be placed beyond the lines of embankment shown on the Drawings will be compacted as required above unless otherwise authorized by the Engineer.
- E. Material for embankments or roadway fills shall be placed in 6-inch maximum lifts and shall be compacted by rolling with power rollers weighing not less than 10 tons, with sheepsfoot rollers, with vibrating rollers, or with pneumatic tire rollers, as required to accomplish the work. While and as each layer is deposited, water shall be applied in sufficient amount to ensure optimum moisture to secure the compaction specified.
- F. The use of trucks, carryalls, scrapers, tractors, or other heavy hauling equipment shall not be considered as rolling in lieu of rollers, but the traffic of such hauling equipment shall be distributed over the fill in such a manner as to make the use of the compaction afforded thereby as an addition to compaction by the use of rollers.
- G. Wherever a pipe is to pass through a fill or embankment, the fill or embankment material shall be placed and compacted to an elevation 12 inches above the top elevation of the pipe before the trench is excavated.
- H. On subgrades for all roadbeds, the density for the top 6 inches of the finished subgrade shall be equal to not less than 100 percent of the maximum density as determined by AASHTO T-99, Method A. When field tests show failure to meet the density requirement, the subgrade shall be loosened by disking, harrowing or other approved methods to a depth of not less than 6 inches, then reshaped and recompacted as indicated in this paragraph.

2.05 DISPOSAL OF WASTE AND UNSUITABLE MATERIALS

- A. All materials removed by excavation, which are suitable for the purpose, shall be used to the extent possible for backfilling pipe trenches, foundations, and footings and for making embankment fills or for such other purposes shall be considered as waste materials and the disposal thereof shall be made by the Contractor. All on-site disposals of waste materials shall be made in a manner and at locations approved by the Engineer.

- B. Waste materials shall be spread in uniform layers and neatly leveled and shaped. Spoil banks shall be provided with sufficient and adequate openings to permit surface drainage of adjacent lands.
- C. Unsuitable materials, consisting of wood, vegetable matter, debris, soft or spongy clay, peat, and other objectionable material so designated by the Engineer shall be removed from the work site and disposed of by the Contractor. Burning of brush shall be permitted on site only at the approval of the Engineer. Contractor shall obtain the necessary burning permit from the Air Pollution Control Bureau for the burning site and shall provide a copy of the permit showing date of expiration to the Engineer at least five days before any burning is to take place. Contractor shall comply with all regulations of the applicable burning permit.
- D. No unsuitable or waste material shall be dumped on private property unless written permission is furnished by the owner of the property and unless a dumping permit is issued from the local jurisdiction.

2.06 FINAL GRADING

- A. After other earthwork operations have been completed, the sites of all structures, roads, and embankments shall be graded within the limits and to the elevations shown on the Drawings. Grading operations shall be so conducted that materials shall not be removed or loosened beyond the required limits. The finished surfaces shall be left in smooth and uniform planes such as are normally obtainable from the use of hand tools. If the Contractor is able to obtain the required degree of evenness by means of mechanical equipment, the Contractor will not be required to use hand labor methods. Slopes and ditches shall be neatly trimmed and finished to slopes shown on the Drawings.
- B. Unless otherwise specified or shown on the Drawings, all finished ground surfaces shall be laser graded and dressed to present a surface varying not more than plus or minus 0.10 foot as regards local humps or depressions.

END OF SECTION 02220

SECTION 02270
SLOPE PROTECTION AND EROSION CONTROL

PART 1 - GENERAL

1.01 SCOPE

- A. The Contractor shall provide temporary control measures as shown in the plans or as necessary during the life of the Contract to control erosion and water pollution, through the use of berms, dikes, dams, sediment basins, fiber mats, netting, mulches, grasses, slope drains, temporary silt fences, and other control devices.
- B. The temporary pollution control provisions contained herein shall be coordinated with any permanent erosion control features, to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.

PART 2 - PRODUCTS

2.01 TEMPORARY BERMS

- A. A temporary berm is constructed of compacted soil, with or without a shallow ditch, at the top of fill slopes or transverse to centerline on fills.
- B. These berms are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed or slopes stabilized.

2.02 TEMPORARY SLOPE DRAINS

A temporary slope drain is a facility consisting of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, sod or other material that may be used to carry water down slopes to reduce erosion.

2.03 SEDIMENT STRUCTURES

Sediment basins, ponds, and traps are prepared storage areas constructed to trap and store sediment from erodible areas in order to protect properties and stream channels below the construction areas from excessive siltation.

2.04 CHECK DAMS

- A. Check dams are barriers composed of logs and poles, large stones or other materials placed across a natural or constructed drainway.

- B. Stone check dams shall not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures shall not be used where the drainage area exceeds five (5) acres.

2.05 TEMPORARY SEEDING AND MULCHING

Temporary seeding and mulching are measures consisting of seeding, mulching, fertilizing, and matting utilized to reduce erosion. All cut and fill slopes including waste sites and borrow pits shall be seeded when and where necessary to eliminate erosion.

2.06 TEMPORARY SILT FENCES

Silt fences are temporary measures utilizing filter fabric and woven wire fence or other approved material. Filter cloth, composed of burlap, plastic filter fabric, etc., is attached to the upstream side of the fence to retain the suspended silt particles in the run-off water.

PART 3 - EXECUTION

3.01 PROJECT REVIEW

Prior to the pre-construction conference the Contractor shall meet with the Engineer and go over in detail the expected problem areas in regard to the erosion control work. Different solutions should be discussed so that the best method might be determined. It is the basic responsibility of the Contractor to develop an erosion control plan and to prevent erosion damage to the project or to adjacent property. Any damage is the responsibility of the Contractor.

3.02 PRE-CONSTRUCTION CONFERENCE

At the pre-construction conference the Contractor shall submit for acceptance his schedule for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing, grading, bridges and other structures at watercourses, construction, and paving. He shall also submit for acceptance his proposed method of erosion control on haul roads and borrow pits and his plan for disposal of waste materials. No work shall be started until the erosion control schedules and methods of operations have been accepted by the Engineer. Acceptance by the Engineer does not relieve Contractor of responsibility for any erosion damage that may occur.

3.03 CONSTRUCTION REQUIREMENTS

- A. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface of erodible earth material exposed

- by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other water impoundment. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut and fill slopes shall be seeded and mulched as the excavation proceeds.
- B. The Contractor shall be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in his accepted schedule. Temporary pollution control measures shall be used to correct conditions that develop during construction that were not foreseen during the design state; that are needed prior to installation of permanent pollution control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.
 - C. Where erosion is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit, otherwise erosion control measures may be required between successive construction stages.
 - D. The Engineer will limit the area of excavation, borrow, and embankment operations in progress commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent pollution control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.
 - E. Under no condition shall the amount of surface area or erodible earth material exposed at one time be excavation or fill within the project area exceed 750,000 square feet without prior approval by the Engineer.
 - F. The Engineer may increase or decrease the amount of surface area of erodible earth material to be exposed at one time by clearing and grubbing, excavation, borrow and fill operations as determined by his analysis of project conditions.
 - G. In the event of conflict between these requirements and pollution control laws, rules, or regulations or other Federal, State, or Local agencies, the more restrictive laws, rules, or regulations shall apply.

3.04 CONSTRUCTION OF STRUCTURES

A. Temporary Berms

A temporary berm shall be constructed of compacted soil, with a minimum width of 24 inches at the top and a minimum height of 12 inches with or without a shallow ditch, constructed at the top of fill slopes or transverse to centerline on fills. Temporary berms shall be graded so as to drain to a compacted outlet at a slope drain. The area adjacent to the temporary berm in the vicinity of the slope drain must be properly graded to enable this inlet to function efficiently and with minimum ponding in this area. All transverse berms required on the downstream side of a slope drain shall extend across the grade to the highest point at approximately a 10-degree angle with a perpendicular to centerline. The top width of these berms may be wider and the side slope flatter on transverse berms to allow equipment to pass over these berms with minimal disruptions. When practical and until final roadway elevations are approached, embankments should be constructed with a gradual slope to one side of the embankment to permit the placement of temporary berms and slope drains on only one side of the embankment.

B. Temporary Slope Drains

1. Temporary slope drains shall consist of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, flexible rubber, or other materials which can be used as temporary measures to carry water, accumulating in the cuts and on the fills, down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.
2. Fiber matting and plastic sheeting shall not be used on slopes steeper than 4:1 except for short distances of 20 feet or less.
3. All temporary slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for temporary slope drains shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the temporary slope drain. Energy dissipaters, sediment basins, or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream. An ideal dissipater would be dumped rock or a small sediment basin which would slow the water as well as pick up some sediment. All temporary slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

C. Sediment Structures

1. Sediment structures shall be utilized to control sediment at the foot of embankments where slope drains exit, at the bottom as well as in the ditchlines atop waste sites, and in the ditchlines or borrow pits. Sediment structure may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures shall be at least twice as long as they are wide.
2. When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, and all excavation backfilled and properly compacted. The existing ground shall be restored to its natural or intended condition.

D. Check Dams

1. Check dams shall be utilized to retard stream flow and catch small sediment loads. Materials utilized to construct check dams are varied and should be clearly illustrated or explained in the Contractor's erosion control plan.
2. All check dams shall be keyed into the sides and bottom of the channel a minimum depth of 2 feet. A design is not needed for check dams but some typical designs are available from the Engineer.

E. Temporary Seeding and Mulching

Seeding and mulching shall be performed in accordance with the section entitled "Seeding."

F. Temporary Silt Fences

1. Temporary silt fences shall be placed on the natural ground, at the bottom of fill slopes, in ditches, or other areas where siltation is a problem. Silt fences are constructed of wire mesh fence with a covering of burlap or some other suitable material on the upper side of the fence and anchored into the soil.
2. The Contractor shall be required to maintain the silt fence in a satisfactory condition for the duration of the project or until its removal is requested by the Engineer. The silt accumulation at the fence shall be leveled and seeded upon removal of the fence. The silt fence becomes the property of the Contractor whenever the fence is removed.

3.05 MAINTENANCE

- A. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Any materials removed shall become the property of the Contractor.
- B. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled such work shall be performed by the Contractor at his own expense.
- C. Where the work to be performed is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls and falls within the Specifications for a work item that has a contract price, the units of work shall be paid for at the proper contract prices.

3.06 EROSION CONTROL OUTSIDE PROJECT AREA

Temporary pollution control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sites. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.

END OF SECTION 02270

**SECTION 02504
PAVING AND SURFACING**

PART 1 - GENERAL

1.01 SCOPE

- A. The work specified by this section shall consist of paving and surfacing of designated areas around a running track.

1.02 STANDARD

- A. The specifications make reference to the current edition of the "Standard Specifications For Road and Bridge Construction" of the Tennessee Department of Transportation (TDOT). Even though the weather limitations, constructions methods, and materials specifications contained in the TDOT specifications may not be explicitly repeated in these specifications, they shall, wherever applicable to the work called for by this section, be considered as implied and therefore adhered to. However, the various subsections "Basis for Payment" contained in the TDOT specifications shall not be considered applicable.
- B. All existing pavement in streets, driveways, or parking areas, destroyed, or damaged by the construction, shall be replaced.

PART 2 - PRODUCTS

All references to TDOT specs shall refer to "Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction", 1981, or latest edition.

- 2.01 Bituminous Prime Coat: Grade AE-P, or cutback asphalt, Grade RC-250 (TDOT specs, Section 402, Subsection 904.02 and 904.03)
- 2.02 Asphaltic Concrete Surface: Grading D (TDOT specs, Section 411)

PART 3 - EXECUTION

3.01 NEW PAVEMENTS

- A. Areas shall be surfaced as shown on the Contract Drawings. The material shall be placed sufficiently thick to produce, after compaction, a uniform surface with a minimum thickness as shown on the Drawings and shall be shaped to the required

line and grade. Materials, equipment and construction methods used for paving work shall conform to the Specifications for the particular surface required.

- B. The completed crushed stone base course shall be maintained by the Contractor in a smooth, first-class condition to required line, grade and cross section until the entire surface area has become stabilized and compacted. Base course and asphalt materials shall not be placed on soft, wet or frozen subgrade.

3.02 SUBGRADE

- A. Before any base material is installed, remove all topsoil material, cut or fill with approved fill material, and compact the subgrade of the area to be paved to 95% of optimum density as determined by ASTM D698 (Standard Proctor).

3.03 ASPHALTIC CONCRETE SURFACE

- A. Apply a bituminous prime coat of emulsified asphalt, Grade AE-P, or cutback asphalt, Grade RC-250, at a rate of 0.38 to 0.42 gallon per square yard on the mineral aggregate base. Take care to prevent the bituminous material's splashing on exposed faces of curbs and gutters, walls, walks, trees, etc. If such splashing does occur, remove it immediately. After the prime coat has been properly cured, apply asphaltic concrete surface course, Grade D, to the thickness shown on the standard drawings or the plans.

3.04 SMOOTHNESS

- A. The finished surfaces shall conform to the lines and grades specified and/or shown on the Drawings. For walking trail the finished surface course shall not vary from the specified grade more than one-eighth inch (1/8") in ten feet (10') when measured in any direction with a 10' straightedge will be permitted in the finished work, nor will any depressions that will not drain. Correct all such defects.

END OF SECTION 02504

SECTION 02610

HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

PART 1 GENERAL

1.1 SECTION DESCRIPTION

1.1.1 This specification includes but is not limited to high-density polyethylene (PE 3408) (ductile iron pipe size O.D) pressure pipe primarily intended for the transportation of water and sewage either buried or above grade.

1.2 REFERENCES

1.2.1 AWWA C901 Polyethylene (PE) pressure Pipe & Tubing, ½ inch through 3 inch for water

1.2.2 AWWA C906 Polyethylene (PE) pressure Pipe & Fittings, 4 inch through 63 inch for water

1.2.3 ASTM D3035 Standard Spec for PE Pipe (DR-PR) Based on Controlled Outside Diameter

1.2.4 ASTM D3261 Butt Heat Fusion PE Fittings for PE Pipe & Tubing

1.2.5 ASTM D3350 Standard Specification for PE Pipe & Fittings Materials

1.2.6 ASTM D1238 Melt Flow Index

1.2.7 ASTM D1505 Density of Plastics

1.2.8 ASTM D2837 Hydrostatic Design Basis

1.2.9 NSF Std.#14 Plastic Piping Components & Related Materials

1.2.10 TR-33/2005 Generic Butt Fusion Joining Procedure for Field Joining of PE Pipe

1.3 GENERAL

1.3.1 USE

1.3.1.1 High Density Polyethylene (HDPE) pipes/fittings shall be allowed for use as water, wastewater and reclaimed water pressure pipe where compatible with the specific conditions of the project. The use of material other than HDPE pipe may be required by ASPA if it is determined that HDPE pipe is unsuitable for the particular application. All material used in the production of water main piping shall be approved by the National Sanitation Foundation (NSF).

1.4 DOCUMENTATION

1.4.1 Documentation from the resin's manufacturer showing results of the following tests for resin identification:

1.4.1.1 Melt Flow Index ASTM D1238

1.4.1.2 Density ASTM D1505

1.5 MANUFACTURER

1.5.1 All HDPE pipe and fittings shall be from a single manufacturer, who is fully experienced, reputable and qualified in the manufacture of the HDPE pipe to be furnished. The pipe shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications. Qualified manufacturers shall be: PLEXCO Division of Chevron Chemical Company, DRISCOPIPE as manufactured by Phillips Products Co., Inc., SCLAIRPIPE as manufactured by DuPont of Canada or equal as approved by the Utilities Engineer.

1.6 FINISHED PRODUCT EVALUATION

1.6.1 Production staff shall check each length of pipe produced for the items listed below. The results of all measurements shall be recorded on production sheets, which become part of the manufacturer's permanent records.

1.6.1.1 Pipe in process shall be checked visually, inside and out for cosmetic defects (grooves, pits, hollows, etc.)

1.6.1.2 Pipe outside diameter shall be measured using a suitable periphery tape to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.

1.6.1.3 Pipe wall thickness shall be measured at 12 equally spaced locations around the circumference at both ends of the pipe to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.

1.6.1.4 Pipe length shall be measured.

1.6.1.5 Pipe marking shall be examined and checked for accuracy.

1.6.1.6 Pipe ends shall be checked to ensure they are cut square and clean.

1.6.1.7 Subject inside surface to a "reverse bend test" to ensure the pipe is free of oxidation (brittleness).

1.7 STRESS REGRESSION TESTING

1.7.1 The polyethylene pipe manufacturer shall provide certification that stress regression testing has been performed on the specific polyethylene resin being utilized in the manufacture of this product. This stress regression testing shall have been done in accordance with ASTM D2837 and the manufacturer shall provide a product supplying a minimum Hydrostatic Design Basis (HDB) of 1,600 psi as determined in accordance with ASTM D2837.

1.8 COMPATIBILITY

1.8.1 Contractor is responsible for compatibility between pipe materials, fittings and appurtenances.

1.9 WARRANTY

- 1.9.1 The pipe MANUFACTURER shall provide a warranty against manufacturing defects of material and workmanship for a period of ten years after the final acceptance of the project by the OWNER. The MANUFACTURER shall replace at no expense to the OWNER any defective pipe/fitting material including labor within the warranty period.

PART 2 PRODUCTS

2.1 MATERIALS FOR PIPE SIZES 4-INCH DIAMETER AND LARGER

- 2.1.1 Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE 3408 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- 2.1.2 High Density Polyethylene (HDPE) pipe shall comply with AWWA Specifications C906.
- 2.1.3 If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- 2.1.4 Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.
- 2.1.5 HDPE pipe and accessories 4-inch diameter and larger, shall be 160 psi at 73.4°F meeting the requirements of Standard Dimension Ratio (SDR) 17 as MINIMUM STRENGTH.
- 2.1.6 The pipe Manufacturer must certify compliance with the above requirements.

2.2 MATERIALS FOR PIPE SIZES 2-INCH DIAMETER AND LESS

- 2.2.1 Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE 3408 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- 2.2.2 High Density Polyethylene (HDPE) pipes shall comply with AWWA Specifications C901.
- 2.2.3 If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- 2.2.4 Dimensions and workmanship shall be as specified by ASTM D3035. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.

2.2.5 HDPE pipe and accessories 2” and less in diameter, shall be 160 psi at 73.4°F meeting the requirements of Standard Dimension Ration (SDR) 9 as MINIMUM STRENGTH.

2.2.6 The pipe Manufacturer must certify compliance with the above requirements.

2.3 FITTINGS

2.3.1 All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.

2.3.2 The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.

2.3.3 All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, or flanged adapters and must be approved by the Engineer. **NO** size on size wet taps shall be permitted.

2.3.4 All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of ASPA Engineer and per the HDPE pipe manufacturer’s recommendations and specifications. A molded flange connector adapter within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316 stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1.

2.3.4.1 Transition from HDPE to ductile iron fittings and valves shall be approved by ASPA Engineer before installation.

2.3.4.2 No solid sleeves shall be allowed between such material transitions.

2.3.4.3 Fittings and transitions shall be as manufactured by Phillips DRISCOPIPE, Inc., 1000 Series Pressure Pipe, Chevron Chemical Company Plexco/Spiralite pipe, or equal.

2.3.4.4 The pipe supplier must certify compliance with the above requirements.

2.4 PIPE IDENTIFICATION

2.4.1 The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5-feet:

2.4.1.1 Name and/or trademark of the pipe manufacturer.

2.4.1.2 Nominal pipe size.

2.4.1.3 Dimension ratio.

2.4.1.4 The letters PE followed by the polyethylene grade in accordance with ASTM

- 2.4.1.5 D1248 followed by the hydrostatic design basis in 160's of psi, e.g., PE 3408.
- 2.4.1.6 Manufacturing standard reference, e.g., ASTM F714 or D-3035, as required.
- 2.4.1.7 A production code from which the date and place of manufacture can be determined.
- 2.4.1.8 Color Identification, either stripped by co-extruding longitudinal identifiable color markings or shall be solid in color and as follows:
 - i. BLUE – Potable Water
 - i. GREEN – Sanitary Sewer
- 2.4.2 Tracing Wire
 - 2.4.2.1 Open trench installation of HDPE shall be identifiable per ASPA Specification Sec. 02600, Part 2, 2.01 (A).
 - 2.4.2.2 Directional Drilled HDPE shall have wire conforming to Copperhead Industries Reinforced #1245 Extra-High Strength Tracer Wire and affixed to the drilling head/reamer per Detail M-17.
- 2.4.3 Marking Tape: Marking tape shall be installed per ASPA Engineer approval.

PART 3 EXECUTION

3.1 JOINING METHOD

- 3.1.1 The pipe shall be joined with butt, heat fusion joints as outlined in ASTM D2657 and conform to the Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe, Technical Report TR-33/2005, published by the Plastic Pipe Institute (PPI). All joints shall be made in strict compliance with the manufacturer's recommendations. A factory qualified joining technician as designated by pipe manufacturer or experienced, trained technician shall perform all heat fusion joints in the presence of the ASPA inspector.
- 3.1.2 Lengths of pipe shall be assembled into suitable installation lengths by the butt-fusion process. All pipes so joined shall be made from the same class and type of raw material made by the same raw material supplier. Pipe shall be furnished in standard laying lengths not to exceed 50 feet and no shorter than 20 feet.
- 3.1.3 On days butt fusions are to be made, the first fusion shall be a trial fusion in the presence of an ASPA Inspector. The following shall apply:
 - 3.1.3.1 Heating plate surfaces shall be inspected for cuts and scrapes and shall be free of dirt and residue. Heater surfaces should be between 400°F (minimum) to 450°F (maximum). Measure the temperature @ 12:00, 3:00, 6:00 and 9:00 o'clock positions using a pyrometer or infrared thermometer at locations where the heating plate will contact the pipe/fitting ends. The maximum temperature difference between any two points on a single heating surface must not exceed 24°F. If this

temperature is exceeded, the heating plate shall be cleaned per the manufacturer's recommendations.

- 3.1.3.2 The fusion or test section shall be cut out after cooling completely for inspection.
 - 3.1.3.3 The test section shall be 12" or 30 times (minimum) the wall thickness in length and 1" or 1.5 times the wall thickness in width (minimum).
 - 3.1.3.4 The joint shall be visually inspected as to continuity of "beads" from the melted material, and for assurance of "cold joint" prevention (i.e. – joint shall have visible molded material between walls of pipe). Joint spacing between the walls of the two ends shall be a minimum of 1/16" to a maximum 3/16".
- 3.1.4 The polyethylene flange adapters at pipe material transitions shall be backed up by stainless steel flanges conforming to ANSI B16.1 and shaped as necessary to suit the outside dimensions of the pipe. The flange adapter assemblies shall be connected with corrosion resisting bolts and nuts of Type 316 Stainless Steel as specified in ASTM A726 and ASTM A307. All bolts shall be tightened to the manufacturer's specified torques. Bolts shall be tightened alternatively and evenly. After installation, apply a bitumastic coating to bolts and nuts.

PART 4 INSTALLATION

- 4.1 High Density Polyethylene (HDPE) Pipe shall be installed in accordance with the instruction of the manufacturer, as shown on the Drawings and as specified herein. A factory qualified joining technician as designated by the pipe manufacturer shall perform all heat fusion joints.
- 4.2 HDPE shall be installed either by Open Trench Construction or Directional Bore Method.
- 4.3 Care shall be taken in loading, transporting and unloading to prevent damage to the pipe. Pipe or fitting shall not be dropped. All pipe or fitting shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the Engineer. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner by the contractor, at his own expense.
- 4.4 Under no circumstances shall the pipe or accessories be dropped into the trench or forced through a directional bore upon "pull-back".
- 4.5 Care shall be taken during transportation of the pipe such that it will not be cut, kinked or otherwise damaged.
- 4.6 Ropes, fabric or rubber protected slings and straps shall be used when handling pipes. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe.
- 4.7 Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects, which could damage the pipe. Stacking of the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated

temperature conditions. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

- 4.8 Pipe shall be stored on clean level ground to prevent undue scratching or gouging. The handling of the pipe shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. The maximum allowable depth of cuts, scratches or gouges on the exterior of the pipe is 5 percent of wall thickness. The interior pipe surface shall be free of cuts, gouges or scratches.
- 4.9 Pipe shall be laid to lines and grade shown on the Drawings with bedding and backfill as shown on the Drawings.
- 4.10 When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by fabricated plugs, or by other approved means.
- 4.11 Sections of pipe with cuts, scratches or gouges exceeding 5 percent of the pipe wall thickness shall be removed completely and the ends of the pipeline rejoined.
- 4.12 The pipe shall be joined by the method of thermal butt fusion. All joints shall be made in strict compliance with the manufacturer's recommendations.
- 4.13 Mechanical connections of the polyethylene pipe to auxiliary equipment such as valves, pumps and tanks shall be through flanged connections which shall consists of the following:
 - 4.13.1 A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
 - 4.13.2 A 316 stainless steel back up ring shall mate with a 316 stainless steel flange.
 - 4.13.3 A 316 stainless steel bolts and nuts shall be used.
- 4.14 Flange connections shall be provided with a full-face neoprene gasket.
- 4.15 All HDPE pipe must be at the temperature of the surrounding soil at the time of backfilling and compaction.
- 4.16 If a defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the Owner. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required. kinked or otherwise damaged.
- 4.17 Open Trench Installation:
 - 4.17.1 ASPA Standards and Specification, Section 02200 – Utility Excavation, Trenching, and Backfilling shall apply in its entirety.
 - 4.17.2 The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16-in per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
 - 4.17.3 Good alignment shall be preserved during installation. Deflection of the pipe shall occur only at those places on design drawings and as approved by the Engineer.

Fittings, in addition to those shown on the Drawings, shall be used only if necessary or required by the Engineer.

- 4.17.4 Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be “pulled” or “cramped”.
 - 4.17.5 Precautions shall be taken to prevent flotation of the pipe in the trench.
 - 4.17.6 When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be recompacted to provide uniform side support for the pipe.
 - 4.17.7 Restrained joints shall be installed where shown on the Drawings or as directed by the Engineer.
- 4.18 Directional Bore Installation:
- 4.18.1 Refer to ASPA Specification 02320 - Horizontal Directional Drilling in its entirety

PART 5 CLEANING

- 5.1 At the conclusion of the work, thoroughly clean all of the new pipe lines to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period by forcing a cleaning swab through all mains 4” or greater. Flushing velocities shall be a minimum of 2.5 feet per second. All flushing shall be coordinated with ASPA Inspector and Water Resources Department. Debris cleaned from the lines shall be removed from the job site.

PART 6 TESTING

- 6.1 Pressure testing shall be conducted per Manufacturer’s recommendations and as approved by the ASPA Engineer.
- 6.2 All HDPE water mains shall be disinfected prior to pressure testing as per ASPA specification.
- 6.3 All HDPE mains shall be field-tested. Contractor shall supply all labor, equipment, material, gages, pumps, meters and incidentals required for testing. Each main shall be pressure tested upon completion of the pipe laying and backfilling operations, including placement of any required temporary roadway surfacing.
- 6.4 All mains shall be tested at 150 percent of the operating design pressure of the pipe unless otherwise approved by the Engineer.
- 6.5 Pressure testing procedure shall be per Manufacturer’s recommendations or as follows:

- 6.5.1 Fill line slowly with water. Maintain flow velocity less than 2 feet per second.
- 6.5.2 Expel air completely from the line during filling and again before applying test pressure. Air shall be expelled by means of taps at points of highest elevation.
- 6.5.3 Apply initial test pressure and allow to stand without makeup pressure for two to three hours, to allow for diametric expansion or pipe stretching to stabilize.
- 6.5.4 After this equilibrium period, apply the specified test pressure and turn the pump off. The final test pressure shall be held for one to three hours.
- 6.5.5 Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall be witnessed by the resident project representative and ASPA representative at the point where the pressure is being monitored and shall show on the recorded pressure read-out submitted to the Engineer of Record.
- 6.6 Allowable amount of makeup water for expansion during the pressure test shall conform to Chart 6, Allowance for Expansion Under Test Pressure, Technical Report TR 31/9-79, published by the Plastic Pipe Institute (PPI). If there are no visual leaks or significant pressure drops during the final test period, the installed pipe passes the test.
- 6.7 If any test of pipe laid disclosed leakage significant pressure drop greater than the manufacturer's recommended loss, the Contractor shall, at his/her own expense, locate and repair the cause of leakage and retest the line. The amount of leakage, which will be permitted, shall be in accordance with AWWA C600 Standards.
- 6.8 All visible leaks are to be repaired regardless of the amount of leakage.
- 6.9 The Contractor must submit his plan for testing to the Engineer for review at least 10 days before starting the test and shall notify ASPA Inspector a minimum of 48 hours prior to test.

SECTION 02612

REINFORCED CONCRETE PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section includes construction of reinforced concrete pipe for storm drainage, culverts, and sanitary sewer, including appurtenances normally installed as a part of these systems. Construction may include surface preparation; trench excavation; shoring; dewatering; lay, align and join pipe installation of appurtenances; bedding and backfilling; surface restoration; and other related work.

1.02 RELATED SECTIONS

- A. The following is a list of SPECIFICATIONS, which may be related to this section:
 - 1. Section 01 57 19, Temporary Environmental Controls
 - 2. Section 31 11 00, Clearing and Grubbing.
 - 3. Section 31 14 13, Topsoil Stripping and Stockpiling.
 - 4. Section 31 23 00, Excavation and Fill.
 - 5. Section 31 23 19, Dewatering.
 - 6. Section 31 23 33, Trenching and Backfilling.
 - 7. Section 31 25 00, Erosion and Sedimentation Control

1.03 REFERENCES

- A. The following is a list of standards, which may be referenced in this section:
 - 1. ASTM International (ASTM):
 - a. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - b. C76, Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 - c. C150, Standard Specification for Portland cement.
 - d. C260, Standard Specification for Air-Entraining Admixtures for Concrete.
 - e. C361, Standard Specification for Reinforced Concrete Low-Head Pressure Pipe.

Manholes, Using Rubber Gaskets.

- g. C506, Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.
 - h. C507, Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.
 - i. C655, Standard Specification of Reinforced D-Load Culvert, Storm Drain and Sewer Pipe.
 - j. C827, Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.
 - k. C990, Standard Specifications for Joints in Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
 - l. C1417, Standard Specification for Reinforced Concrete Sewer, Storm Drain and Culvert Pipe for Direct Design.
 - m. C1479, Standard Practice for Installation of Precast Concrete Sewer, Storm Drain, and Culvert Pipe Using Standard Installation.
 - n. C1619, Standard Specifications for Elastomeric Seals for Joining Concrete Pipe.
 - o. C1628, Standard Specifications for Joints for Concrete Gravity Flow Sewer Pipe, Using Rubber Gaskets.
2. U.S. Bureau of Reclamation (USBR): M-1, Standard Specifications for Reinforced Concrete Pressure Pipe.

1.04 SUBMITTALS

- A. Details of fittings and specials shall be furnished for approval by ENGINEER.
- B. Unless otherwise specified, CONTRACTOR shall submit to ENGINEER for approval SHOP DRAWINGS showing the exact dimension of the joints including the permissible tolerances for each size of pipe being furnished and the size, type and locations of gasket materials. Approval of the joint detail DRAWINGS shall not relieve CONTRACTOR of any responsibilities to meet all of the requirements of these SPECIFICATIONS, or of the responsibility for correctness of CONTRACTOR's details.
- C. CONTRACTOR shall cooperate with ENGINEER in obtaining and providing samples of all specified materials.
- D. CONTRACTOR shall submit certified laboratory test certificates for all items required in this section.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Responsibility for Material:

1. CONTRACTOR shall be responsible for all materials intended for the WORK that are delivered to the construction site and accepted by CONTRACTOR. Payment shall not be made for materials found to be defective or damaged in handling after delivery and acceptance. Defective or damaged materials shall be removed and replaced with acceptable materials at CONTRACTOR's expense.
2. CONTRACTOR shall be responsible for the safe and proper storage of such materials.

B. Pipe Acceptance:

1. In addition to any deficiencies not covered by ASTM C76 for non-pressurized pipe, ASTM C361 for low head pipe or ASTM C507 for Elliptical Pipe, concrete pipe, which has any of the following visual defects, will not be accepted.
 - a. Porous spots on either the inside or the outside surface of a pipe having an area of more than ten (10) square inches and a depth of more than one-half (1/2) inch.
 - b. Pipe, which has been patched to repair porous spots, cracks, or other defects, when such patching was not approved by ENGINEER.
 - c. Exposure of the reinforcement when such exposure would indicate that the reinforcement is misplaced.
 - d. Pipe that has been damaged during shipment or handling even previously approved before shipment.
 - e. Concrete pipe, at delivery to the job site, shall have cured and reach the design strength as required by ASTM C76 for non-pressurized pipe, ASTM C316 for low head pipe or ASTM C507 for Elliptical Pipe and be at least five (3) days (seventy-two [72] hours) old.
2. Acceptance of the pipe at point of delivery shall not relieve CONTRACTOR of full responsibility for any defects in materials due to workmanship.

C. Pipe Handling:

1. Pipe and accessories furnished by CONTRACTOR shall be delivered to, unloaded, and distributed at the site by CONTRACTOR. Each pipe shall be unloaded adjacent to or near the intended laying location.
2. Pipe fittings, specials, valves, and appurtenances shall be unloaded and stored in a manner that precludes shock or damage. Such materials shall not be dropped.
3. Pipe shall be handled in a manner intended to prevent damage to the pipe ends or to any coating or lining. Pipe shall not be skidded or rolled against adjacent pipe. Damaged coatings or lining shall be repaired by CONTRACTOR, at

CONTRACTOR's expense in accordance with the recommendations of the manufacturer and in a manner satisfactory to ENGINEER. Physical damage to the pipe or accessory shall be repaired by CONTRACTOR at CONTRACTOR's expense, and in a manner satisfactory to ENGINEER.

- D. Gasket Storage: All gaskets shall be stored in a cool place, preferably at a temperature of less than seventy degrees Fahrenheit (70°F.), and in no case shall the gaskets be stored in the open, or exposed to the direct rays of the sun.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Precast concrete pipe, which does not conform to ASTM C76 for non-pressurized pipe, ASTM C361 for low head pipe or ASTM C507 for Elliptical Pipe or to any other requirement specified herein, shall not be approved for storm sewer, culvert, or sanitary sewer installations.
- B. Allowable ASTM Specifications: All material, manufacturing operations, testing, inspection, and making of concrete pipe shall conform to the requirements of ASTM C76 for non-pressurized pipe, ASTM C361 for low-head pipes or ASTM C507 Elliptical Pipe, latest revision thereof, listed in Article References.
- C. Marking:
 - 1. The following shall be clearly marked on both the interior and exterior surface of the pipe:
 - a. Appropriate ASTM Specification: ASTM 76, ASTM C361 or ASTM C507
 - b. Class and size.
 - c. Date of manufacture.
 - d. Name or trademark of manufacturer.
- D. Diameter of Pipe: The diameter indicated on the DRAWINGS shall mean the inside diameter of the pipe.
- E. Wall Thickness and Class of Pipe: The wall thickness and reinforcing steel, if any, shall comply with ASTM C76 for non-pressurized pipe, ASTM C361 for low head pipe or ASTM C507 for Elliptical Pipe and the class of pipe designated on the DRAWINGS. No elliptical reinforcing shall be allowed in any circular pipe. All jacking pipe shall be specifically designed by the pipe manufacturer to withstand all forces that the pipe may be subjected to during the jacking operations.
- F. Fittings and Specials: Fittings and specials shall be made up of pipe segments having the same structural qualities as the adjoining pipe and shall have the interior treated the same as the pipe.

- G. Lifting Holes: Lifting holes will be allowed for storm sewer pipe provided, however, only two lifting holes per pipe length will be allowed.
- H. Cement: Unless otherwise required by ENGINEER, or specified otherwise on the DRAWINGS, Type II Modified Portland Cement complying with the requirements of ASTM C150 will normally be acceptable in the manufacture of concrete pipe.
- I. Joints:
 - 1. The joint design for concrete pipe shall be bell and spigot or tongue and groove. Where rubber gaskets are required or specified, the bell or tongue shall be of confined gasket or single offset spigot configuration to properly contain and seat the rubber gasket. The joint assemblies shall be accurately formed so that when each pipe section is forced together in the trench the assembled pipe shall form a continuous watertight conduit with smooth and uniform interior surface, and shall provide for slight movement of any piece of the pipeline due to expansion, contraction, settlement or lateral displacement. If a gasketed joint is used, the gasket shall be the sole element of the joint providing water tightness. The ends of the pipe shall be in planes at right angles to the longitudinal centerline of the pipe, except where bevel-end pipe is required. The ends shall be furnished to regular smooth surfaces.
 - 2. The jointing material used for concrete pipe storm sewer installations thirty six-inch (36") diameter and greater shall be a rubber gasketed joint. For storm sewers less than thirty six-inch (36") diameter the jointing material may be either a rubber gasket or a flexible plastic sealing compound, unless otherwise specified on the DRAWINGS. Only rubber gasketed joints will be acceptable for concrete pipe sanitary sewer installations. All joints and jointing material shall conform to the following minimum requirements.
 - a. Rubber Gasketed Joints:
 - 1) Rubber gasket joints for tongue and groove or bell and spigot pipe using a confined gasket joint shall consist of an O-ring rubber gasket or other approved gasket configuration and shall conform to the requirements of ASTM 361, ASTM C443, ASTM C1619, or ASTM C1628 for the pipe designated. Unless otherwise approved by ENGINEER, the standard joint configuration shall be as noted in Subsection 3.04.F.
 - 2) Rubber gasket joints for tongue and groove or bell and spigot pipe using a single offset joint shall consist of a non-circular rubber gasket or other approved gasket configuration and shall conform to the requirements of ASTM C76 or ASTM 361 for the pipe designated. Unless otherwise approved by ENGINEER, the standard joint configuration shall be as noted in Subsection 3.04.F.
 - 3) Gaskets may be natural rubber, isoprene or neoprene conforming to ASTM C1619.
 - b. Flexible Plastic Joint Sealing Compound: Preformed plastic gaskets conforming to the minimum and application requirements set forth in PART 3 may be used as a joint sealant for storm sewer installations in lieu of rubber gaskets.

- 1) The flexible plastic gasket shall be in conformance with ASTM C990.
 - 2) The plastic sealing compound shall be packaged in extruded preformed rope-like shape of proper size to completely fill the joint when fully compressed. The material shall be protected in a suitable, removable, two-piece wrapper so that no wrapper may be removed as the compound is applied to the joint surface without disturbing the other wrapper, which remains attached to the compound for protection. The sealing compound shall be impermeable to water, have immediate bonding strength to the primed concrete surface and shall maintain permanent plasticity, and resistance to water, acids, and alkalis.
- c. Mortared Joints: Mortared joints shall only be used in special circumstances and only where specifically authorized by ENGINEER. It is the intent of these SPECIFICATIONS to limit the use of mortared joints to the minimum extent possible except where unusual field conditions require deviation from the jointing material specified.
- J. Protective Coatings: Normally, no additional exterior or interior protective coatings shall be required for concrete pipe. However, whenever adverse corrosive conditions warrant additional interior protection, those pipe segments will be noted on the DRAWINGS.
- K. Concrete Cutoff Collars: Concrete shall meet the requirements of Section 03 31 00, Structural Concrete.

PART 3 EXECUTION

3.01 GENERAL

- A. The pipe and pipe coatings shall be inspected by ENGINEER for damage or defects before being placed in the trench. Damaged or defective pipe shall not be installed.
- B. All pipes that do not meet the requirements of PART 2 of this section will be rejected and replaced at CONTRACTOR's expense.
- C. CONTRACTOR shall install storm sewer pipe of the type, diameter, load class, wall thickness and protective coating that is shown on the DRAWINGS.
- D. Proper equipment, implements, tools and facilities shall be provided and used by CONTRACTOR for safe and convenient installation of the type of pipe being installed.

3.02 SURFACE PREPARATION

- A. Within Easement, Cultivated, Landscaped, or Agricultural Area:
 1. All vegetation, such as brush, sod, heavy growth of grass or weeds, decayed vegetable matter, rubbish and other unsuitable material within the area of excavation and trench side storage shall be stripped and disposed of in accordance with the requirements of Section 31 11 00, Clearing and Grubbing.

2. Topsoil shall be removed to a depth of eight (8) inches or the full depth of the topsoil, whichever is less. Topsoil shall be removed from the area to be excavated and stockpiled, or, CONTRACTOR may elect to import topsoil to replace that lost during excavation.
- B. Within Unpaved Roadway Areas: CONTRACTOR shall strip the cover material from graveled roadways or other developed, but unpaved traffic surfaces to the full depth of the existing surfacing. The surfacing shall be stockpiled to the extent that it is acceptable and useable for restoration purposes.
- C. Within Paved Areas:
1. The removal of pavement, sidewalks, driveways, or curb and gutter shall be performed in a neat and workmanlike manner. Concrete pavement, asphalt, sidewalks, driveways, or curb and gutter shall be cut with a power saw to a depth of two (2) inches prior to breaking. The concrete shall be cut vertically in straight lines and avoiding acute angles.
 2. Bituminous pavement, sidewalks, driveways, or curb and gutter shall be cut with a power saw, pavement breaker, or other approved method of scoring the mat prior to breaking or excavation. The bituminous mat shall be cut vertically, in straight lines and avoiding acute angles.
 3. Any overbreak, separation, or other damage to the existing bituminous or concrete outside the designated cut lines shall be replaced at CONTRACTOR's expense.
 4. Excavated paving materials shall be removed from the job site and shall not be used as fill or backfill.

3.03 DEWATERING

- A. All pipe trenches and excavation for structures and appurtenances shall be kept free of water during pipe laying and other related work. The method of dewatering shall provide for a dry foundation at the final grades of excavation in accordance with Section 31 23 19, Dewatering. Water shall be disposed of in a manner that does not inconvenience the public or result in a menace to public health. Pipe trenches shall contain enough backfill to prevent pipe flotation before dewatering is discontinued. Dewatering shall continue until such time as it is safe to allow the water to rise in the excavation.

3.04 INSTALLATION

- A. General: Precautions shall be taken to prevent foreign material from entering the pipe before or while it is being placed in the line. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. The open ends of pipe shall be closed with a watertight plug, or with other devices approved by ENGINEER, at times when pipe laying is not in progress.

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- B. Pipe:

1. Storm sewer pipe shall be installed in accordance with the manufacturer's recommendations for installing the type of pipe used, unless otherwise shown on the DRAWINGS.
2. Pipe lines shall be laid to the grades and alignment shown on the DRAWINGS or staked by ENGINEER. Variation from the prescribed grade and alignment shall not exceed one-tenth (0.10) foot, and the rate of departure from, or return to, the established grade or alignment shall be not more than one (1) inch in ten (10) feet, unless approved by ENGINEER. No deviation from grade shall cause a depression in the sewer invert that could retain fluids or solids.
3. Pipe with lifting holes shall be installed such that the lifting holes are in the crown of the pipe. All lifting holes shall be properly grouted with cement mortar immediately after the pipe is installed and prior to commencement of backfilling.
4. Pipe with lifting anchors shall be installed such that the lifting anchors are in the crown of the pipe. All lifting anchor recesses in the wall of the pipe at the lifting anchors need not be grouted.

C. Pipe Fittings:

1. Pipe fittings shall be laid so as to form a close concentric joint with the adjoining pipe to avoid sudden offsets of the flow line. Pipe sections shall be joined together in accordance with the manufacturer's recommendations.
2. Pipe fittings and appurtenances shall be carefully lowered into the trench with suitable tools or equipment to prevent damage to the pipe and protective coatings and linings; pipe and accessory materials shall not be dropped or dumped into the trench.

- D. Gaskets: No gaskets that show signs of deterioration, such as surface cracking or checking, shall be installed in a pipe joint. The neoprene gaskets used, when the air temperature is ten degrees Fahrenheit (10°F) or lower shall be warmed to temperature of sixty degrees Fahrenheit (60°F) for a period of thirty (30) minutes before being placed on the pipe.

E. Flexible Plastic Joint Sealing Compound:

1. All surfaces of the tongue and groove or bell and spigot shall be primed with an approved priming compound prior to the installation of the sealing compound. The installation of the priming compound and the sealing compound shall be accomplished in strict accordance with the manufacturer's instructions, as to the method of application, quantity of material, the grade of the materials, and the application temperatures.
2. Gaskets installed on both male and female joint surfaces (double gasketing) shall be required for all deflected pipe joints, as well as arch or elliptical pipe joints.

- F. Acceptable Joint for Concrete Storm and Sanitary Sewer Installations: Except where a specified type of pipe joint or jointing material is noted on the DRAWINGS, joints

and jointing material for concrete sewer installations shall be in conformance with the following table.

Allowable Type of Joints				
Application	Tongue and Groove with Flexible Plastic Sealing Compound	Bell and Spigot (Single Offset) (ASTM 1628 or ASTM C443)	Bell and Spigot with USBR M-1 Type R-4 Joint (Confined Gasket) (ASTM C361)	Bell and Spigot with USBR M-1 Type R-2 Joint
1. Non-Pressurized Storm Sewers				
a. Open Cut 36" & larger		X	X	
b. Open Cut 15" to 33"	X	X	X	X
c. Jack or Bored/ Cased			X	X
2. Pressurized Storm Sewers				
a. Open Cut			X	X
b. Jack or Bored/ Cased			X	X
3. Pressurized and Non-Pressurized Sanitary Sewers				
a. Open Cut			X	X
b. Jack or Bored/ Cased			X	X
<p>NOTES:</p> <p>1) Where more than one type of joint is acceptable, CONTRACTOR may use either type subject to the physical characteristics and manufacturing method of the pipe and approval of ENGINEER.</p> <p>2) All elliptical pipe or arch pipe shall be double gasketed, or per ASTM C443</p> <p>3) In addition to the gasket requirements, if the average joint gap in 36-inch diameter pipe or larger pipe exceeds 3/4-inch, the void shall be filled and troweled smooth with an approved non-metallic, non-shrink grout conforming to ASTM C827 or a flexible plastic sealant conforming to ASTM C990 so to provide a smooth interior surface at the joint.</p> <p>4) For pipe sizes 18-, 24-, 30-, and 36-inch in diameter, the reinforcement in the bell and spigot shall conform to ASTM C76 for the class of pipe specified or to ASTM C361 for a minimum pressure head of 25 feet.</p>				

G. Obstructions not shown on the DRAWINGS may be encountered during the progress of the WORK. Should such an obstruction require an alteration to the pipe alignment or grade, ENGINEER will have authority to order a deviation from the DRAWINGS, or ENGINEER may arrange for the removal, relocation, or reconstruction of any structure, which obstructs the pipeline.

H. Joints of precast concrete boxes and precast concrete pipe shall be grouted in accordance with the manufacturer's recommendations or as designated on the DRAWINGS.

3.05 BEDDING AND BACKFILLING

- A. Select bedding and backfill material may be required and shall be so shown on the DRAWINGS. Select bedding materials shall conform to the designated gradation requirements in Section 31 23 33, Trenching and Backfilling.
- B. Bedding material shall be placed under and around all pipes as shown on the DRAWINGS. Bedding shall be placed in a manner that will minimize separation or change in its uniform gradation. Bedding shall be distributed in six-inch (6") maximum layers over the full width of the trench and simultaneously on both sides of the pipe. Special care shall be taken to ensure full compaction under the haunches and joints of the pipe.
- C. Backfill compaction shall not be attained by inundation or jetting, unless approved in writing by ENGINEER. Backfill material shall be uniformly compacted the full depth of the trench.

3.06 CONCRETE CUTOFF COLLARS

- A. Concrete cutoff collars shall be placed around pipes as shown on the DRAWINGS or as directed by the ENGINEER.

3.07 SURFACE RESTORATION

- A. All streets, alleys, driveways, sidewalks, curbs or other surfaces broken, cut or damaged by CONTRACTOR shall be replaced in kind or as shown on the DRAWINGS.

3.08 CLEAN UP

- A. All rubbish, unused materials, and other non-native materials shall be removed from the job site. All excess excavation shall be disposed of as specified, and the right-of-way shall be left in a state of order and cleanliness.

END OF SECTION

SECTION 02614
PRECAST DRAINAGE STRUCTURES

PART 1 - GENERAL

1.01 SCOPE

- A. All labor, materials, equipment, tools and services required for the furnishing, installation, construction and testing of precast drainage structures required for the project shall be in compliance with the Contract Documents.

These specifications cover the materials used in the construction of culverts using Precast Concrete units and the installation and construction methods to be employed on furnishing, installing, construction and testing these culverts.

PART 2 - PRODUCTS

2.01 PRECAST CONCRETE CULVERTS

- A. The precast drainage structure units to be furnished and installed on this project shall be manufactured in accordance with ASTM C-850.
- B. The units shall be manufactured with tongue and groove joints and in the case of multiple lines of culverts, shall be manufactured with shear keys, bolt holes or other connecting components as may be required by the Contract Documents.

2.02 JOINTS

- A. Joints for the precast units shall be tongue and groove and shall be constructed in one of the following manners. The groove ends of the precast units shall be laid upstream.
 - 1. Cement Mortar Joints.

For mortar joints, the ends of the precast units shall be cleaned and wetted with water before the joint is made. Stiff mortar consisting of one part cement and two parts sand shall then be placed on the lower and two vertical sides of the groove end of the unit already in place and on the upper surface of the tongue of the unit to be laid. The two precast units shall then be tightly joined with their inner surfaces flush and even. The inside of the joint shall then be finished smooth and any surplus material shall be removed from the culvert. The completed mortar joint shall then be protected against rapid drying by suitable covering material.
 - 2. Bituminous or Plastic Joints.

A flexible bituminous or plastic such as Ram-Nek, Concrete Sealant butyl resin or an approved equal shall be applied to both the tongue and the groove of the units to be joined and the units shall then be tightly joined with their inner surfaces smooth and even. Sufficient material shall be used to completely fill the space in the joint. The inside of the joint shall then be finished smooth and surplus material removed from the culvert.

2.03 EXCAVATION

- A. All excavation for the structure shall be cut to the lines and elevations indicated on the Plans, or as directed by the Engineer. The width of the excavation shall be sufficient to permit satisfactory jointing of the precast units and thorough tamping and compaction of the backfill material around the completed structure.

2.04 FOUNDATION PREPARATION

- A. The foundation for the precast drainage units shall be excavated to allow for at least a six (6) inch compacted layer of foundation backfill. The backfill material shall be a well graded compactible crushed stone or other compactible granular material as approved by the Engineer. This foundation material shall be placed between graded forms and shaped to fit the bottom of the precast sections.

2.05 BACKFILL

- A. After the foundation has been prepared and the precast units installed and joined with the groove end of the units upstream, the excavation shall then be backfilled. Backfill material shall be compactible crushed stone or other compactible granular material as approved by the Engineer. The material shall be placed along the sides of the culvert in layers not over six (6) inches in loose depth. Each layer shall be moistened or dried, if necessary, to near optimum moisture content and thoroughly compacted with mechanical tampers. Special care should be taken to insure that the compacted material is in intimate contact with the sides of the precast units. The backfill material shall be brought up evenly on both sides of the culvert.

For culverts, when the top of the culvert is above the top of the excavation or the culvert is constructed in a stream bed, embankment material shall be placed in layers not to exceed six (6) inches in loose depth for a width of at least twelve (12) feet. The embankment on each side of the culvert, for a distance equal to the span of the culvert, shall be of the same material and compacted in the same manner as required for backfill in the foregoing paragraph. The remainder of the fill material shall be soil that can be readily compacted and shall contain no frozen lumps, chunks of plastic clay or stones that would be retained on a 3-inch sieve or other objectionable material. It shall be compacted as required for backfill or by rolling with the appropriate equipment.

When multiple lines of precast units are required for the construction of the culvert, backfilling shall be in accordance with the previous paragraphs with the addition of the following provisions.

1. When the adjacent lines of the culvert is such that the space between the lines is less than twelve (12) inches but greater than two (2) inches, this space shall be filled with concrete having minimum compressive strength of 2000 psi. The workability of the concrete shall be such that the complete space between the units shall be filled.

2. When the space between adjacent lines of the culvert is greater than twelve (12) inches, the space shall be filled with the same material as used for the foundation material provided for in previous paragraphs and compacted in the same manner.

No construction equipment will be allowed on the completed culvert until the backfill is compacted at least one (1) foot above the top of the structure unless the structure is designed in accordance with ASTM C-850.

2.06 TESTING

All precast concrete box culvert sections shall be tested in accordance with ASTM C-850. Sufficient standard concrete cylinders shall be made from each days pour to adequately determine that the completed units meet the required concrete strength. Cores may be taken from the completed units for compressive tests at proper location if approved by the Engineer.

END OF SECTION 02614

SECTION 02835
PVC COATED CHAIN LINK FENCES, POSTS AND GATES

PART 1 - GENERAL

1.01 SCOPE

- A. Summary: The work covered by this section includes furnishing all labor, materials, and equipment required to install Class 2b Fused and Adhered, Poly Vinyl Chloride (PVC) Coated, Steel Chain Link Fence, including all excavation, concrete, and accessories, as shown on the Drawings or specified herein.
- B. General: Like items of materials provided hereafter shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance and replacement. Major components including but not limited to Fence Framework and Chain-Link Fabric shall be manufactured in the U.S.A.
- C. Delivery, Storage and Handling: Deliver material to the site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.02 SUBMITTALS

- A. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing details. Actual samples and certificates of compliance may be requested.
- B. Product Data: Provide manufacturer's catalog cuts with printed specifications. Manufacturer shall provide certification of compliance with material specifications. Actual samples of the material may be requested.

1.03 STANDARDS

- A. ASTM B 6 Slab Zinc
- B. ASTM F567 Installation of Chain Link Fence
- C. ASTM F668 Poly(Vinyl Chloride) (PVC) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric, Class 2b
- D. Federal Specification RR-F-191K/1D Fencing, Wire and Post Metal (Chain-Link Fence Fabric), Type IV
- E. American Association of State Highway Transportation Officials (AASHTO) M-181 Chain Link Fence, Type IV, Class A
- F. ASTM F1043 Strength and Protective Coating on Metal Industrial Chain Link Fence Framework Group I-A and Group I-C Heavy Industrial
- G. ASTM F934 Standard Colors for Polymer-Coated Chain Link Fence Materials
- H. Federal Specification RR-F-191K/3D Fencing, Wire and Post Metal (Chain-Link Fence Posts, Topsails and Braces), Class 1, Grade A or B

- I. American Association of State Highway Transportation Officials (AASHTO) M-181 Chain Link Fence, Grades 1 and 2

PART 2 - PRODUCTS

2.01 FENCE FABRIC

- A. The base metal of the chain link fence fabric shall be composed of commercial quality, medium-carbon galvanized (zinc coated) steel wire. The vinyl coating shall be thermally bonded to a thermoset bonding layer over a galvanized steel wire. Vinyl coating thickness, coating weight, and wire tensile strength conform to Federal specification RR-F-191K/1D, ASTM F668, Class 2b and (AASHTO) M-181, Type IV, Class A, as shown in Table 1. The wire is PVC coated before weaving and is free and flexible at all joints and is knuckled at both selvages.

Table 1-PVC Coated Steel Wire Characteristics

Zinc Coated Core Wire Size			PVC Coated Finished Wire Size	PVC Coated Wire Allowable Variance		Core Wire Zinc Coating Weight, Min		PVC Coating Thickness		Breaking Strength, minimum		Tensile Strength, min	
ga	inch	mm	ga	Inch	mm	oz/ft ²	g/m ²	Inch	mm	lbf	N	ksi	MPa
9	0.148	3.76	8	+ 0.005	+0.13	0.30	92	0.006 to 0.010	0.15 to 0.25	1,290	5,740	75	515

- B. Coating: Only plasticized poly(vinyl chloride) (PVC) with a low temperature (-20°C, -4°F) plasticizer and no extenders or extraneous matter other than the necessary stabilizers and pigments, is used. The PVC coating resists attack from prolonged exposure to dilute solutions of most common mineral acids, seawater, and dilute solutions of most salts and alkali. The vinyl coating is thermally bonded to a thermoset bonding layer over a galvanized steel wire. The wire is PVC coated before weaving and is free and flexible at all joints.

- C. Color: Shall Conform to ASTM F934, Black

- D. Overall height shall be as described below:

1. Perimeter Fence shall be 4 feet high.

2.02 FENCE POSTS AND RAILS

- A. The base metal of the posts and rails shall be commercial steel conforming to ASTM F1043 Group I-A and I-C, Heavy Industrial Fence, and also conform to Federal specification RR-F-191, Class 1, Grades A and B and ASSHTO M181 Grades 1 and 2. The thickness of the PVC coating shall be a minimum 0.010 to 0.015 in.

- B. Coating: Only plasticized poly(vinyl chloride) (PVC) with a low temperature (-20°C, -4°F) plasticizer and no extenders or extraneous matter other than the necessary stabilizers and pigments, is used. The PVC coating resists attack from prolonged exposure to dilute solutions of most common mineral acids, seawater, and dilute solutions of most salts and alkali.

2.03 FITTINGS

- A. Fittings and other accessories shall be zinc-coated (galvanized) pressed steel, cast steel or malleable iron, as specified and are coated with matching PVC by the same process as post and rails. PVC coating thickness shall be a minimum 0.006 mils. Painted fittings are not acceptable.
- B. Color: Shall Conform to ASTM F934, Black

2.02 FENCE MATERIALS

- A. Fabric
 - Fused and Adhered Poly(Vinyl Chloride)-PVC Coated Steel Chain Link Fence Fabric
 - 1. 9 gauge zinc coated core wire with 8 gauge PVC coated finished wire size
 - 2. 2-inch mesh
 - 3. Knuckled at both selvages unless otherwise specified.
- B. Posts: Steel pipe, ASTM F1043, capped
 - 1. Line post: 2-3/8 inch O.D.
 - 2. Corner, end, angle, and pull posts: 2-7/8 inch O.D
 - 3. Gate posts, 4 and 12 feet wide
- C. Top rail: 1 5/8 inch O.D., with expansion couplings spaced at not less than 10 feet intervals.
- D. Bottom rail: 1 5/8 inch O.D., with expansion couplings spaced at not less than 10 feet intervals.
- E. Fittings: pressed steel, cast steel or heavy malleable iron.

2.03 GATE

- A. Vehicle Type: 12 foot minimum, double swing
- B. Pedestrian Type: 4 foot minimum, single swing
- C. Frames
 - 1. 2 inch O.D. pipe
 - 2. Material: Galvanized steel.
 - 3. Construction: Welded corners or assembled with corner fittings and 3/8-inch steel truss rods.

4. Provide horizontal 1 1/4 inch brace rail and 3/8-inch truss rod for gates 5 feet wide or greater.
 5. Provide vertical 1 1/4 inch brace rail for gates 6 feet wide or wider, spacing not to exceed 5-foot centers.
- C. Hinges
1. Standard type.
 2. Size to accommodate gate frame and post.
- D. Latches
1. Industrial gate latch with drop rod or center stop.
- E. Keepers
1. Mechanical keeper for each gate leaf.
 2. Secure free end of gate when in full open position.

2.04 CONCRETE

Posts shall be placed in in concrete footings as shown on the details. Concrete shall be a min. 3000 psi.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Verify that final grading in fence location is complete without irregularities, which would interfere with fence installation.
- B. Measure and lay out complete fence line.
- C. Locate line posts at equal distance spacing, not exceeding 10-foot centers.
- D. Use corner posts at positions where fence changes direction more than 10 degrees.

3.02 INSTALLATION

Install Fence, Fence Posts and Gates in accordance with ASTM practice 567.

3.03 ADJUST AND CLEAN

- A. Adjust brace rails for rigid installation.
- B. Tighten hardware, fasteners and accessories.
- C. Level and smooth all disturbed areas.

END OF SECTION 02835

SECTION 02860 TRACK SURFACING

PLEXITRAC ACCELERATOR(RED) POLYRESIN TRACK SYSTEM APPLICATION FOR ASPHALT SURFACES

1.0 DESCRIPTION

This specification covers the installation of a new, high performance resilient track surfacing system for new asphalt surfaces. This polyresin track system, utilizes specially compounded, pigmented, water-based binders and select rubber granules to provide strength, flexibility and to prevent ultra violet degradation. A topcoat is applied to further protect against harmful UV rays and to reduce wear. The system provides a durable, resilient, spike resistant surface for recreational and competitive use.

NOTE: The success of the running track surface is dependent on a sound base (with good drainage) and the asphalt concrete meeting the requirements of The National Asphalt Paving Association and the U.S. Tennis Court and Track Builders Association. Variations of the existing subsurface should not exceed 1/8" in 10' (3mm in 3m) when measured in any direction with a straightedge.

2.0 MATERIALS-All liquid products shall be supplied by one manufacturer.

2.1 Court Patch Binder – shall comply with Specification 10.14 of California Products Corporation.

2.2 CP-4125 – Latex emulsion tack coat.

2.3 Plexitrac Binder – shall comply with Specification 10.73 of California Products Corporation (RED).

2.4 Rubber Granules – select granules for job mixing with Plexitrac Binder.

2.5 Plexitrac Coating – shall comply with Specification 10.72 of California Products Corporation (RED).

2.6 Plexicolor Line Paint – shall comply with Specification 10.4 of California Products Corporation.

2.7 Plexicolor Pigment – Water-borne pigment for enhanced color depth (RED).

2.8 Water – The water used in all mixtures shall be fresh and potable.

**Other colors available upon request and the availability of appropriate EPDM granules.

3.0 SURFACE PREPARATION

3.1 Prior to the application of surfacing materials, the entire surface should be flooded and checked for minor depressions or irregularities. Any puddled area covering a nickel shall be marked and repaired with Court Patch Binder according to CPC Specification 10.14. After patching, the asphalt surface shall not vary more than 1/8" in 10' measured in any direction.

4.0 CONSTRUCTION

Allow all patchwork to dry thoroughly. The surface to be coated must be sound, smooth and free from dust, dirt, or oily materials.

4.1 Primer Coat – A tack coat of CP-4125 must be applied over the entire surface at a rate of .04 gal./s.y. Allow to dry thoroughly.

4.2 Track Surface – Materials shall be applied to achieve a dense uniform surface of not less than the specified thickness in not less than three layers. The Plexitrac Binder must be evenly distributed amongst the rubber granules upon the application of materials. Coverage rates (measured in accordance with I.A.A.F. standards):

Color:	Thickness:	Rubber Granules:	Plexitrac Binder (Red):
Black	3/8" (9.5mm)	10.5 lbs./s.y.	.60 gal./s.y.
Red	1/8" (3.0mm)	5.0 lbs./s.y.	.21 gal./s.y.

Coverage rate based on undiluted product. Binder to rubber ratio shall be 1 gallon Plexitrac Binder per 18 lbs. of Black S.B.R. Rubber and 1 gallon of Plexitrac Binder to 24 lbs. of Red E.P.D.M. Note: systems of a lesser thickness may be installed. Reduction in thickness shall be in the black base material.

To further enhance color depth, it is recommended to add 5 gallons of Plexicolor Pigment to each 55-gallon drum of Plexitrac Binder on the final spraycoat. Plexicolor Pigment is a water-borne colorant available from California Products. Colors other than red are available upon request.

The coverage rate for the rubber granules is dependent on the specific gravity (density) of the rubber and the installation method of surfacing system.

Different densities will affect the dry bulk value of the rubber, which determines the weight per square yard for a specified thickness. The specific gravity for rubber particles can vary between colors, size, and manufacturers. It is recommended to consult the manufacturer for more information. Also, different application methods can affect the overall system density requiring lower or higher volumes of product. System weights and volumes shall be verified by on-site sample methods.

4.3 Top Coat – Plexitrac Coating shall be applied by approved spray equipment at a rate of not less than .10 gallons per square yard. If a smoother finish is desired, you may substitute Plexitrac Surfer at not less than .30 gal./s.y.

4.4 Line Striping- Plexicolor line paint shall be applied to meet all rules and regulations of the local track federation.

5.0 LIMITATIONS

- No part of the construction shall be conducted during rainfall or when rain is imminent.
- Allow 4-5 hours to cure at least 70F. Lower temperature and higher temperature will increase the drying time.
- Do not apply when surface temperature is above 130F.
- Apply only when ambient temperature is 50F and rising.
- Keep from freezing. Do not store in the hot sun.
- The Polyresin Track System will not prevent pavement cracks from occurring.
- Allow applications to thoroughly cure prior to subsequent applications.
- Use caution when applying materials near adjacent areas. Mask when necessary to prevent over spray.
- Allow new asphalt to cure for a minimum of 14 days.

6.0 PHYSICAL PROPERTIES

6.1 Plexitrac Binder is a high solids pigmented binder containing special fibers to promote strength. The Plexitrac Binder is capable of drying/curing to a depth of 10mm in a single lift when mixed at the specified levels of 1-3mm rubber granules:

Viscosity > 90 ku or >1200 cps Pigment and Filler > 6% total Formula

6.2 Plexitrac Coating is a fully pigmented acrylic topcoat system designed to have a high resistance to ultraviolet light. It is made from acrylic resins specifically designed for track surfaces to provide a tough, long lasting surface that can withstand the elements. It should be applied in 2 coats at a coverage rate of .05 gal./s.y. per coat.

6.3 Rubber Properties: 1-3mm Sieve Analysis – other sieve sizes may be used to achieve a different surface texture at the discretion of the owner. Rubber supply can vary. Check compatibility with California Products Corporation.

Mesh	M.M.	% Retained	Specific Gravity: Hardness: Shore A, 55-75 durometer
6	3.36	0-15%	Black Rubber Granules: 1.15-1.40
10	2.00	60-85%	Color EPDM Rubber Granules: 1.40-1.60
18	1.00	10-30%	
PAN	1.00	0-5%	

7.0 **DISCLAIMER:** Suggestions for use of our product or inclusion of descriptive material from patents should not be understood as recommending the use of our product in violation of any patents.

8.0 **GENERAL:**

Materials must be specifically designed for the construction of running track surfaces. Materials specified shall be delivered to the site in sealed, properly labeled drums with California Products labels that are stenciled with the proper patch numbers. Products packaged or labeled in any other manner will not be accepted. Minimal addition of clear, fresh water at the job site is dependent on temperature and material flow. Coverage rates are based upon material prior to mixing with water. Dispose of empty containers in accordance with local, state and federal regulations.

END OF SECTION 02860

SECTION 02933
SEEDING

PART 1 - GENERAL

1.01 SCOPE

- A. The work covered by this Section consists of furnishing all labor, equipment, and material required to prepare seedbed, to place topsoil, seed, commercial fertilizer, agricultural limestone, and mulch material, including seedbed preparation, harrowing, compacting, and other placement operations on graded earthen areas as described herein and/or shown on the Drawings. In general, seeding operations shall be conducted on all newly graded earthen turf areas not covered by structures, pavement, or sidewalks; all cleared or grubbed areas which are to remain as finished grade surfaces; and on all existing turf areas which are disturbed by construction operations and which are to remain as finish grade surfaces. Areas disturbed by borrow activities shall also be seeded according to these Specifications.

- B. The work shall include temporary seeding operations to stabilize earthen surfaces during construction or inclement weather and to minimize stream siltation and erosion.

1.02 QUALITY ASSURANCE

- A. Prior to seeding operations, the Contractor shall furnish to the Engineer labels or certified laboratory reports from an accredited commercial seed laboratory or a state seed laboratory showing the analysis and germination of the seed to be furnished. Acceptance of the seed test reports shall not relieve the Contractor of any responsibility or liability for furnishing seed meeting the requirement of this section.

- B. Prior to topsoil operations, the Contractor shall obtain representative samples and furnish soil test certificates including textural, pH, and organic ignition analysis from the State University Agricultural Extension Services or other certified testing laboratory.

- C. All existing lawns encountered shall be replaced with topsoil and seeding of the same type and quality as that existing prior to construction and shall be restored to original condition or better.

PART 2 - PRODUCTS

2.01 TOPSOIL

The Contractor shall place and prepare topsoil according to Section 02921: TOPSOIL of these specifications, or as shown on the Drawings.

2.02 SEED

- A. Seed shall be delivered in new bags or bags that are sound and labeled in accordance with the U.S. Department of Agriculture Federal Seed Act.
- B. All seed shall be from the last crop available at time of purchase and shall not be moldy, wet, or otherwise damaged in transit or storage.
- C. Seed shall bear the growers analysis testing to 98 percent for purity and 90 percent for germination. At the discretion of the Engineer samples of seed may be taken for check against the growers analysis.
- D. Species, rate of seeding, fertilization, and other requirements are shown in the Seeding Requirements Table.

2.03 FERTILIZER AND LIMING MATERIALS

- A. Fertilizer and liming materials shall comply with applicable State, Local, and Federal laws concerned with their production and use.
- B. Commercial fertilizer shall be a ready mixed material and shall be equivalent to the grade or grades specified in the Seeding Requirements Table. Container bags shall have the name and address of the manufacturer, the brand name, net weight, and chemical composition.
- C. Agricultural limestone shall be a pulverized limestone having a calcium carbonate content of not less than 85 percent by weight. Agricultural limestone shall be crushed so that at least 85 percent of the material will pass a No. 10 mesh screen and 50 percent will pass a No. 40 mesh screen.

2.04 MULCH MATERIAL

- A. All mulch materials shall be air dried and reasonably free of noxious weeds and weed seeds or other materials detrimental to plant growth.
- B. Mulch shall be composed of wood cellulose fiber, straw, or stalks, as specified herein. Mulch shall be suitable for spreading with standard mulch blowing equipment.
- C. Wood-cellulose fiber mulch shall be as manufactured by Weyerhaeuser Company, Conway Corporation, or equal.
- D. Straw mulch shall be partially decomposed stalks of wheat, rye, oats, or other approved grain crops.

- E. Stalks shall be the partially decomposed, shredded residue of corn, cane, sorghum, or other approved standing field crops.

2.05 MULCH BINDER

- A. Mulch on slopes exceeding 3 to 1 ratio shall be held in place by the use of an approved mulch binder. The mulch binder shall be non-toxic to plant life and shall be acceptable to the Engineer.
- B. Emulsified asphalt binder shall be Grade SS-1, ASTM D 977. Cutback asphalt binder shall be Grade RC 70 or RC 250.

2.06 INNOCULANTS FOR LEGUMES

All leguminous seed shall be inoculated prior to seeding with a standard culture of nitrogen-fixing bacteria that is adapted to the particular seed involved.

2.07 WATER

Water shall be clean, clear water free from any objectionable or harmful chemical qualities or organisms and shall be furnished by the Contractor.

PART 3 EXECUTION

3.01 SECURING AND PLACING TOPSOIL

- A. Topsoil shall be secured from areas from which topsoil has not been previously removed, either by erosion or mechanical methods. Topsoil shall not be removed to a depth in excess of the depth approved by the Engineer.
- B. The area or areas from which topsoil is secured shall possess such uniformity of soil depth, color, texture, drainage, and other characteristics as to offer assurance that, when removed the product will be homogeneous in nature and will conform to the requirements of these Specifications.
- C. All areas from which topsoil is to be secured, shall be cleaned of all sticks, boards, stones, lime, cement, ashes, cinders, slag, concrete, bitumen, or its residue, and any other refuse which will hinder or prevent growth.
- D. In securing topsoil from a designated pit, or elsewhere, should strata or seams of material occur which do not come under the requirements for topsoil, such materials shall be removed from the topsoil, or if required by the Engineer, the pit shall be abandoned.
- E. Before placing or depositing topsoil upon any areas, all improvements within the area shall be completed, unless otherwise approved by the Engineer.

3.02 SEEDBED PREPARATION

- A. Before fertilizing and seeding, the topsoil surfaces shall be trimmed and worked to true line free from unsightly variation, bumps, ridges and depressions, and all detrimental material, roots, and stones larger than 1/2 inch in any dimension shall be removed from the soil.
- B. Not earlier than 24 hours before the seed is to be sown, the soil surface to be seeded shall be thoroughly cultivated to a depth of not less than 2 inches with a weighted disc, tiller, pulvimixer, or other equipment, until the surface is smooth and in a condition acceptable to the Engineer.
- C. If the prepared surface becomes eroded as a result of rain or for any other reason, or becomes crusted before the seed is sown, the surface shall again be placed in a condition suitable for seeding.
- D. Ground preparation operations shall be performed only when the ground is in a tillable and workable condition.

3.03 FERTILIZATION AND LIMING

- A. Following seedbed preparation, fertilizer shall be applied to all areas to be seeded so as to achieve the application rates shown in the Seeding Requirements Table. Copies of all weight tickets shall be furnished to the Engineer.
- B. Fertilizer shall be spread evenly over the seedbed and shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of 1/2 inch.
- C. Fertilizer need not be incorporated in the soil as specified above when mixed with seed in water and applied with power sprayer equipment. The seed shall not remain in water containing fertilizer for more than 30 minutes when a hydraulic seeder is used.
- D. Agricultural limestone shall be thoroughly mixed into the soil according to the rates in the Seeding Requirements Table. The specified rate of application of limestone may be reduced by the Engineer if the pH tests indicate this to be desirable. It is the responsibility of the Contractor to obtain such tests and submit the results to the Engineer for adjustment in rates.
- E. It is the responsibility of the Contractor to make one application of maintenance fertilizer according to the recommendations listed in the Seeding Requirements Table.

3.04 SEEDING

- A. Seed of the specified group shall be sown as soon as preparation of the seedbed has been completed. No seed shall be sown during high winds, nor until the surface is suitable for working and is in a proper condition. Seeding shall be performed during the dates shown in the Seeding Requirements table unless otherwise approved by the Engineer. Seed mixtures may be sown together provided they are kept in a thoroughly mixed condition during the seeding operation. Copies of all weight tickets shall be furnished to the Engineer.
- B. Seeds shall be uniformly sown by any approved mechanical method to suit the slope and size of the areas to be seeded, preferably with a broadcast type seeder, windmill hand seeder, or approved mechanical power drawn seed drills. Hydro-seeding and hydro-mulching may be used on steep embankments, provided full coverage is obtained. Hard packing and ruts shall be prevented or repaired when hydro-seeding and hydro-mulching. Care shall be taken to adjust the seeder for seedings at the proper rate before seeding operations are started and to maintain their adjustment during seeding. Seed in hoppers shall be agitated to prevent segregation of the various seeds in a seeding mixture.
- C. Immediately after sowing, the seeds shall be covered and compacted to a depth of 1/8 to 3/8 inch by a cultipacker or suitable roller.
- D. Leguminous seeds shall be inoculated prior to seeding with an approved and compatible nitrogen-fixing inoculant in accordance with the manufacturer's mixing instruction.

3.05 MULCHING

- A. All seeded areas shall be uniformly mulched in a continuous blanket immediately after seeding. The mulch shall be applied so as to permit some sunlight to penetrate and the air to circulate and at the same time shade the ground, reduce erosion, and conserve soil moisture. Approximately 25 percent of the ground shall be visible through the mulch blanket.
- B. One of the following mulches shall be spread evenly over the seeded areas at the following application rates:
 - 1. Wood Cellulose Fiber 1,400 lbs/acre
 - 2. Straw 4,000 lbs/acre
 - 3. Stalks 4,000 lbs/acre

These rates may be adjusted at the discretion of the Engineer at no additional cost to the Owner depending on the texture and condition of the mulch material and the characteristics of the seeded area.

- C. Mulch on slopes greater than 3 to 1 ratio shall be held in place by the use of an approved mulch binder. Binder shall be thoroughly mixed and applied in accordance with manufacture's specifications.
- D. The Contractor shall cover structure, poles, fence, and appurtenances if the mulch binder is applied in such a way that it would come in contact with or discolor the structures.
- E. Mulch and binder shall be applied in accordance with manufacture's specifications.

3.06 WATERING

- A. Contractor shall be responsible for maintaining the proper moisture content of the soil to insure adequate plant growth until a satisfactory stand is obtained. If necessary, watering shall be performed to maintain an adequate water content in the soil.
- B. Watering shall be accomplished by hoses, tank trucks, or sprinklers in such a way to prevent erosion, excessive runoff, and overwatered spots.

3.07 MAINTENANCE

- A. Upon completion of seeding operations, the Contractor shall clear the area of all equipment, debris, and excess material and the premises shall be left in a neat and orderly condition.
- B. The Contractor shall maintain all seeded areas without additional payment until a uniform stand is accomplished and until final acceptance of the seeding work by the Owner. Seeding work shall be repeated on defective areas until a uniform stand is accomplished at the Contractor's expense. Damage resulting from erosion, gulleys, washouts, or other causes shall be repaired by filling with topsoil, compacting, and repeating the seeding work at Contractor's expense.
- C. If sowing season is missed, the Contractor shall stabilize, maintain, and prevent erosion and stormwater pollution in the areas to be seeded until the appropriate sowing season, at which time appropriate seedbed preparation shall be performed and seeding operations shall resume immediately.

SEEDING REQUIREMENTS TABLE

AREA	SOWING SEASON	SPECIES	RATES PER 1,000 SQUARE FEET			
			Seed	Fertilizer	Pelletized Lime	Maintenance**
<i>General Seeding Areas:</i>						
Flat to rolling terrain with slopes less than 3:1	3/1 to 6/1	Kentucky 31 Fescue	4 lbs.	30 lbs.	20 lbs.	15 lbs.
		Ladino White Clover*	1/4 lb.	18-24-12		10-10-10
		Annual Ryegrass	2 lbs.			
	8/1 to 11/1	Kentucky 31 Fescue	4 lbs.	30 lbs.	20 lbs.	15 lbs.
		Ladino White Clover*	1/4 lb.	6-12-12		10-10-10
		Annual Ryegrass	2 lbs.			
Embankments with slopes greater than 3:1	1/1 to 6/1	Crownvetch*	1 lb.	30 lbs.	20 lbs.	10 lbs.
		Kentucky 31 Fescue	2 lbs.	18-24-12		0-20-20
		Weeping Lovegrass	1/4 lb.			
	8/1 to 11/1	Crownvetch*	1 lb.	30 lbs.	20 lbs.	10 lbs.
		Kentucky 31 Fescue	2 lbs.	6-12-12		0-20-20
		Annual Ryegrass	2 lbs.			
<i>Turf Seeding Areas:</i>						
	1/1 to 6/1	Team-Mates*** (or approved equal)	7 lbs	4lbs. 18-24-12	20 lbs.	

* Requires inoculation.

** Maintenance fertilizer shall be applied in early spring following initial establishment of cover.

*** Team-Mates is a blend of Stetson, Bravo, Lancer, and All-Sport fescues with an additional 20% perennial rye.

END OF SECTION 02933

SECTION 02935
BERMUDAGRASS SOD

PART 1 - GENERAL

1.01 SCOPE

- A. The work covered by this Section consists of furnishing all labor, equipment, and material required to prepare sod bed, sod, commercial fertilizer, agricultural limestone, and mulch material, including seedbed preparation, harrowing, compacting, and other placement operations on graded earthen areas as described herein and/or shown on the Drawings. In general, sodding operations shall be conducted on all areas indicated on the drawings.

1.02 QUALITY ASSURANCE

- A. Prior to sodding operations, the Contractor shall furnish to the Engineer labels or certified laboratory reports from an accredited commercial laboratory or a state laboratory showing the analysis of the sod to be furnished. Acceptance of the reports shall not relieve the Contractor of any responsibility or liability for furnishing sod meeting the requirement of this section.
- B. Sod shall be genetically pure essentially free of injurious plant pest and diseases. Free of prohibited weeds and essentially free of other weeds (not more than 3% at time of last inspection prior to harvesting. The sod must be of uniform color, density, texture, and free of excessive thatch. Sod shall have a uniform soil depth, a minimum of ½ inch, as recommended by the grower.
- C. Prior to topsoil operations, the Contractor shall obtain representative samples and furnish soil test certificates including textural, pH, and organic ignition analysis from the State University Agricultural Extension Services or other certified testing laboratory and follow fertilizer recommendation.
- D. Installation should occur within 24 hours of harvest. The sod shall be watered and rolled immediately after installation. Minimum seam spacing is required when installing sod.

PART 2 - PRODUCTS

2.01 QUICKSTAND BERMUDAGRASS

- A. Provide Premium Certified Quickstand or Tifway Bermuda grass sod installed and maintained as recommended by the grower. Sod shall be over seeded with ryegrass that has had time to develop, on sand base, and free of fire ants.

Charles Williams & Associates (or approved equal)
PO Box 978, Fayetteville, TN 37334
931-732-4774

2.03 FERTILIZER AND LIMING MATERIALS

- A. Fertilizer and liming materials shall comply with applicable State, Local, and Federal laws concerned with their production and use.

- B. Commercial fertilizer shall be a ready mixed material. Container bags shall have the name and address of the manufacturer, the brand name, net weight, and chemical composition.
- C. Agricultural limestone shall be a pulverized limestone having a calcium carbonate content of not less than 85 percent by weight. Agricultural limestone shall be crushed so that at least 85 percent of the material will pass a No. 10 mesh screen and 50 percent will pass a No. 40 mesh screen.

2.07 WATER

Water shall be clean, clear water free from any objectionable or harmful chemical qualities or organisms and shall be available at the site.

PART 3 EXECUTION

3.01 FINAL GRADING

- A. Laser Grading – All final grading on the football field shall be conducted using a laser grader as specified below or approved equal:
 - 1. Transmitter (LB4) – Dual plane (axis A & B); axis A: 4.00% to +10.0%; axis B: 1.00% to +50.0%.
 - 2. Class II Laser – head rotation: 40RPS; accuracy: +3/32 inches per 100 feet; calibration: capable of field calibration; working range: minimum of 1000 foot radius; self leveling: active to 12 degrees; operating temperature: 0 – 110⁰F.
 - 3. Implement – eight foot wide; push-pull operating capable; high floatation tires; box capacity of 1.1 CY; eight foot tall receiving rod (attached); 5 light 360 micro second recovery capable.
- B. blecavator – tractor-mounted; cultivates to a depth up to 8-1/2 inches (220mm); pulverizes soil into a fine tilth; buries rocks, overgrowth and debris from the surface; levels and rakes in one pass; finish rolls leaving a firm surface

3.02 SOD LAYING PROCEDURE

- A. Sod shall be laid using 30 inch or 42 inch big roll.
- B. Contractor shall be responsible for sod bed preparation, receiving sod, planting, watering, providing grow-in fertilizations, and maintaining sod until establishment of the turf grass according to the supplier/grower's recommendations.

3.03 ANNUAL MAINTENANCE PLAN

- A. Contractor shall provide pricing for an annual maintenance plan per recommendations of the Bermuda grass supplier/grower.

END OF SECTION 02935

DIVISION 3
CONCRETE

SECTION 03300 CONCRETE

PART 1 - GENERAL

1.01 CODES AND STANDARDS

ACI 301, "Specifications for Structural Concrete Buildings"; ACI 318, "Building Code Requirements for Reinforced Concrete"; comply with applicable provisions except as otherwise indicated.

1.02 CONCRETE TESTING SERVICE

Employ acceptable testing laboratory to perform materials evaluation, testing and design of concrete mixes.

Owner will employ separate testing laboratory to evaluate concrete delivered and placed at the site.

Certificates attesting to concrete strength, which are signed by the concrete producer and Contractor, may be submitted to the Engineer in lieu of material testing laboratory reports.

1.03 QUALITY CONTROL

Owner's testing laboratory will perform sampling and testing during concrete placement as directed by Engineer. This testing does not relieve Contractor of responsibility of providing concrete and testing in compliance with specifications. At no expense to Owner, Contractor may perform additional testing, as he deems necessary, to ensure quality of concrete. Owner's testing program may include the following:

Sampling: In compliance with ASTM C-172.

Air Content: In compliance with ASTM C-173, one for each set of compressive strength specimens.

Test results will be reported in writing to Engineer, Contractor, and concrete producer within 2 days after the tests are made.

1.04 MANUFACTURER'S DATA

Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by Engineer.

1.05 LABORATORY REPORTS

Submit 2 copies of reports of laboratory evaluations and/or test results for concrete materials and mix designs.

1.06 MIX DESIGN PROPORTIONS

Proportion concrete ingredients by laboratory trial batch method complying with ACI 301 to produce the following minimum compressive strengths at 28 day age when sampled, cured and tested:

<u>Class of Concrete</u>	<u>Average of any 3 cylinder breaks</u>	<u>Minimum of single cylinder break</u>
A	4000 PSI	3500 PSI
B	3000 PSI	2500 PSI

Submit written report for each proposed concrete mix design to Engineer at least 15 days prior to start of concrete work. Do not begin concrete production until all concrete mix designs have been reviewed by and are acceptable to Engineer.

Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Any adjustment shall produce the lowest water-cement ratio which is consistent with good workability and produces a plastic cohesive mixture. Do not use revised mix designs until all revisions have been reviewed by and are acceptable to Engineer.

Use air-entraining admixtures in all concrete. Provide not less than 4% nor more than 8% entrained air for all concrete exposed to freezing and thawing conditions; and, from 2% to 4% for all other concrete.

Unless otherwise indicated or directed by Engineer, the slump range for all concrete shall be:

Footings, blocking,
sidewalks, driveways, etc..... 2" to 4"

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement: In accordance with ASTM C-150, Type I or III, as required to suit job conditions.

- B. Aggregates: In accordance with ASTM C-33, except local aggregates of proven durability may be used when acceptable to Engineer.
- C. Water: Use only clean, potable water.
- D. Air-Entraining Admixtures: In accordance with ASTM C-260.

2.02 CONCRETE RELATED MATERIALS

- A. Moisture Barrier: Clear, 8 mils thick polyethylene; polyethylene coated barrier paper; or, 1/8" thick asphalt core membrane sheet.

2.03 FORMING MATERIALS

Provide form materials with sufficient strength and stability to withstand the pressure of placed concrete without excessive bow or deflection.

- A. Exposed Concrete Surfaces: Materials suitable to project conditions.

2.04 REINFORCING MATERIALS

- A. Deformed Reinforcing Bars: In accordance with ASTM A-615, Grade 60 unless otherwise indicated.
- B. Welded Wire Fabric: In accordance with ASTM A-185, FY = 65 KSI.

PART 3 - EXECUTION

3.01 FORMING, MIXING & PLACING CONCRETE

- A. Job-Site Mixing: Use drum type batch mixer; mixing time at least 1.5 minutes for 1 cu. yd. or smaller volume; and, increase mixing time by at least 15 seconds for each additional cu. yd. or fraction thereof.
- B. Ready-Mix Concrete: In accordance with ASTM C-94.
- C. Formwork: Construct so that concrete members and structures are the correct size, shape, alignment, elevation and position.

Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms.

Clean and adjust forms prior to concrete placement. Apply release agents or wet forms as required. Re-tighten forms during concrete placement if required to eliminate mortar leaks.

- D. Reinforcing: Accurately position, support and secure reinforcing against displacement. Support reinforcing with non-corrosive or plastic coated metal chairs, runners, bolsters, spacers and hangers located at sufficient frequency to limit reinforcing deflection between supports to a maximum of 3/8".

Unless otherwise indicated, the amount of concrete cover protecting the reinforcing shall be :

Concrete cast against and
permanently exposed to earth.....3.00"

Install welded wire fabric in as long lengths as practicable, lapping at least 8" with transverse wires overlapping by at least 2".

- E. Joints: Provide construction, isolation, and control joints as indicated or required. Construction joints shall occur at locations which will not impair strength or detract from the aesthetics of the installation. Place isolation and control joints as locations which will stabilize random cracking.
- F. Concrete Placement: Comply with ACI 318, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.

Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, in continuous vertical motions, so that concrete is worked around reinforcing and other embedded items and into forms.

Do not transport any concrete within forms by using vibration equipment. Transport of concrete within forms shall be performed only by hand spading as necessary.

Protect concrete from physical damage or reduced strength due to hot or cold weather extremes during mixing, placement and curing.

3.02 CONCRETE FINISHES

- A. Exposed-to-view Surfaces: Provide a smooth finish for exposed concrete surfaces and surfaces that are to be covered with a coating or covering material that is to be applied directly to the concrete. Remove fins and projections, patch defective areas with cement grout and rub smooth.
- B. Curing: Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for at least the first 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing

compound. Provide protections as required to prevent damage to exposed concrete surfaces.

END OF SECTION 03300

SECTION 03410
CEMENT CONCRETE
SIDEWALKS, DRIVEWAYS, MEDIAN PAVEMENT

16.01 SCOPE OF WORK

This work shall consist of constructing sidewalks, driveways, and median pavement, exclusive of sidewalks, driveways, and median pavement that are integrally a part of structures, of Portland Cement Concrete on a prepared subgrade, in accordance with these Specifications and in reasonably close conformity with the lines, grades, and typical cross-sections shown on the Plans or established by the Engineer. It shall, also, include removal of existing sidewalks and driveways as directed by the Engineer.

16.02 MATERIALS

Materials shall meet the requirements of:

Item 3	Concrete
Item 14	Mineral Aggregate Base
Item 25	Preformed Joint Filler

Concrete for sidewalks, driveways, and median pavement shall be Class A Concrete, unless specified otherwise on the contract drawings, meeting all the requirements prescribed in Item 3, "Concrete".

16.03 EQUIPMENT

(a) Forms

Forms shall be of wood, metal, or other suitable material and shall extend for the full depth of the concrete. All forms shall be true to line, free from warp, and of sufficient strength to resist the pressure of the concrete without springing. Curved forms of proper radius shall be used on all radial sections and shall be of a design acceptable to the Engineer. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal.

(b) Mixing, Finishing and Transportation

1. Mixers and transportation of equipment shall meet the requirements of Item 3.13.
2. Satisfactory floats, trowels, templates, straightedges, edgers, spades, and tamps shall be furnished. Compaction of subgrade shall be accomplished by any type of tamping or rolling equipment that will produce the desired results.

16.04 CONSTRUCTION REQUIREMENTS

(a) Subgrade Preparation

Subgrade preparation for sidewalks, driveways, and median pavement shall be made to the required depth and to a width that will permit the installation and bracing of the forms. The subgrade shall be shaped and compacted to a firm, even surface in reasonably close conformity with the grade and section on the Plans. All soft and yielding material shall be removed and replaced with acceptable material, which shall then be compacted as directed. The prepared subgrade shall then be brought to true line and grade with a minimum depth of two inches (2") of mineral aggregate base, unless specified otherwise on the drawings, meeting the requirements of Item 14 of these Specifications.

(b) Expansion Joints

1. Unless otherwise indicated on the Plans or directed by the Engineer, premolded expansion joint filler, three-fourths inch (3/4") in thickness, shall be placed at the locations and in line with expansion joints in the adjoining pavement, gutter or curb. When expansion joints are not required or have not been installed in the adjoining pavement or gutter, unless otherwise indicated on the Plans, a three-fourths inch (3/4") premolded expansion joint filler shall be placed at intervals of not over forty feet (40'). All premolded expansion joint filler shall be cut to full width or length of the proposed construction and shall extend to within one-half inch (1/2") of the top or finished surface. All longitudinal expansion joints shall be placed as indicated on the Plans or as directed by the Engineer. All expansion joints shall be true, even, and present a satisfactory appearance.

2. Construction joints shall be formed around all appurtenances, such as manholes, utility poles, etc., extending into and through the sidewalk or median area. Premolded expansion joint filler, one-fourth inch (1/4") thick, shall be installed in these joints. Expansion joint filler of the thickness indicated shall be installed between concrete sidewalks and any fixed structure, such as a building or bridge. One-fourth inch (1/4") thick expansion joint filler shall be installed between concrete curb and median pavement and, unless otherwise specified, between concrete curb and sidewalk. This expansion joint material shall extend for the full depth of the walk or median pavement.

(c) Limitations of Mixing

Limitations on the mixing of concrete shall be as prescribed in Item 3.13.

(d) Mixing and Placing Concrete

Concrete shall be mixed in accordance with the provisions of Item 3.14. Immediately before placing the concrete, the subgrade shall be thoroughly wetted, and the forms given a coating of light oil. Where removed and used again, the forms shall be thoroughly cleaned and oiled each time before using.

(e) Finishing

1. The concrete shall be struck-off with a transverse template resting upon the side forms. After the concrete has been struck-off to the required cross-section, it shall be finished with floats, trowels, and straightedges until the surface requirements have been obtained.

2. When the surface of the concrete is free from water and just before the concrete obtains its initial set, it shall be gone over and finished with a float and swept lightly with a broom in order to produce a sandy texture. The longitudinal surface variations shall be not more than one-fourth inch (1/4") under a twelve-foot (12') straightedge, nor more than one-eighth inch (1/8") on a five-foot (5') transverse section. The surface of the concrete shall be so finished as to drain completely at all times. The edges of the sidewalks, driveways and median pavement shall be carefully finished and rounded with an edging tool having a radius of one-half inch (1/2").

3. The surface of sidewalks shall be divided into blocks by use of a grooving tool. Grooves shall be so placed as to cause expansion joints to be placed at a groove line. The grooves shall be spaced approximately five feet (5') apart, and the blocks shall be rectangular unless otherwise ordered by the Engineer. The grooves shall be cut to a depth of not less than one-half inch (1/2") and not more than one inch (1"). The edges of the grooves shall be edged with an edging tool having a radius of one-fourth inch (1/4"). Grooves shall be placed in median pavement in line with corresponding joints in adjoining construction or as directed by the Engineer.

4. The edges of the concrete at expansion joints shall be rounded with an edging tool having a radius of one-fourth inch (1/4"). All marks caused by the edging shall be removed with a wetted brush or float. The top and ends of expansion joint material shall be cleaned of all concrete, and the expansion joint material shall be so trimmed as to be slightly below the surface of the concrete.

(f) Protection and Curing

1. Forms may be removed at any time that removal will not damage the concrete. No pressure shall be exerted upon the concrete in removing forms.

2. Curing and protection during cold weather shall be performed as provided for under Item 3.15 of these Specifications.

3. Pedestrians will not be allowed upon concrete sidewalks, driveways, or medians until seventy-two (72) hours after finishing concrete, and no vehicles or loads shall be permitted on any sidewalk, driveway, or median until the Engineer has determined that the concrete has attained sufficient strength for such loads.

4. The Contractor shall construct and place such barricades and protection devices as are necessary to keep pedestrians and other traffic off the sidewalk, driveway, or median.

5. Any sidewalk, driveway, or paved median damaged prior to final acceptance of the project shall be repaired, at the Contractor's expense, by removing concrete within groove limits and replacing it with concrete of the type and finish in the original construction.

(g) Backfilling

Immediately after removing the side forms, the spaces along the edges of sidewalk or driveway shall be filled with suitable material. This material shall be placed in layers not exceeding four inches (4") in loose thickness, and compacted until firm and stable.

(h) Final Cleanup

Final cleaning up shall be performed in accordance with the requirements of Special Conditions.

16.05 COMPENSATION

(Unit Price Contracts Only)

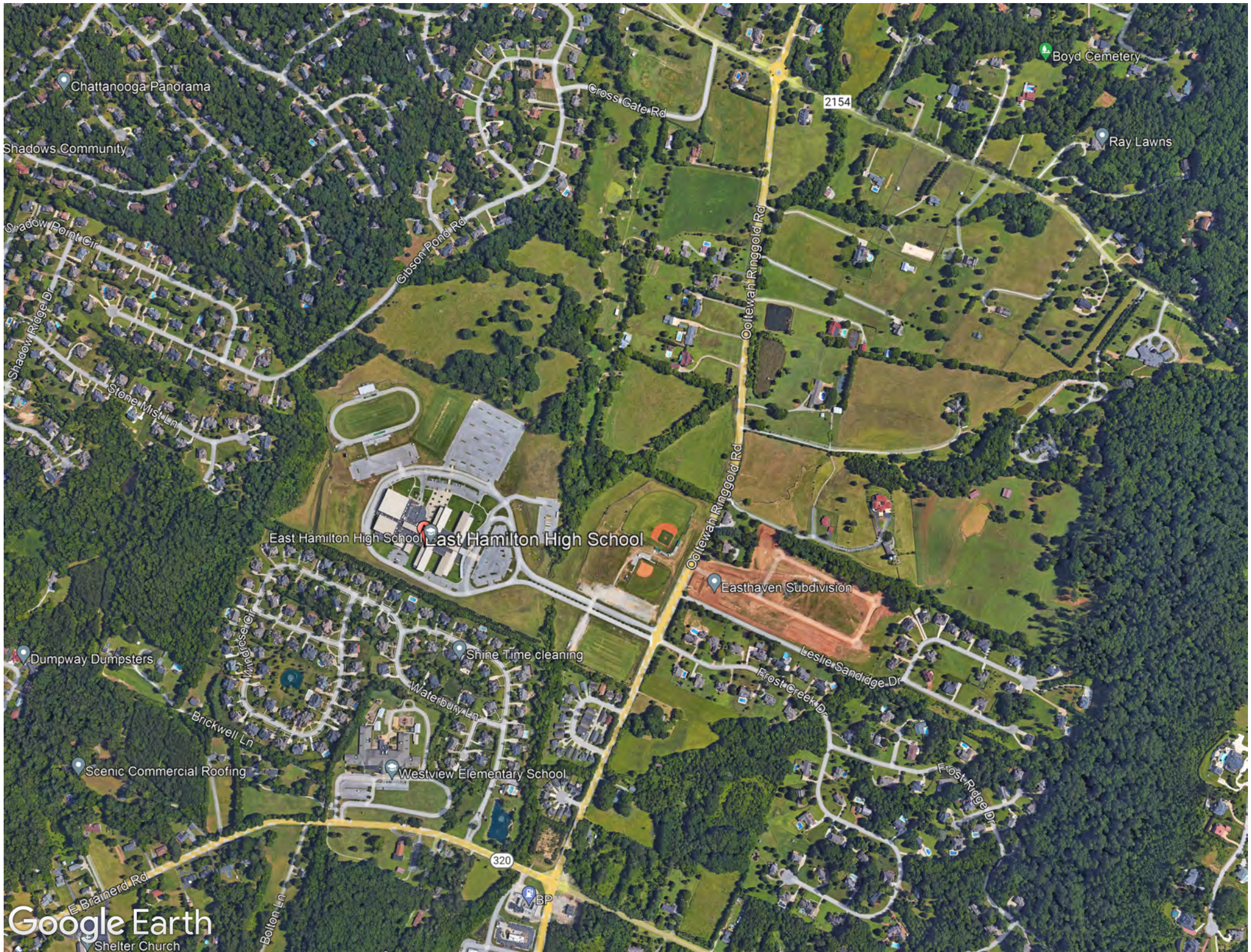
(a) Method of Measurement

1. Concrete sidewalks and concrete driveways will be measured by the square foot, complete-in-place. The area shall be obtained by surface measurements. Where standard widths are constructed, the measurements shall not exceed the standard widths shown on the Plans, unless on written direction of the Engineer. Concrete sidewalks or each thickness, concrete driveways, and concrete median pavement will be measured separately. Concrete median pavement will be measured by the cubic yard, complete-in-place. The volume shall be obtained from the specified thickness shown on the Plans and surface measurements for width and length.

2. No measurement for payment will be made for incidental excavation, preparing the subgrade, for backfill, or expansion joint materials unless otherwise indicated on the Plans, as these are necessary parts of the construction. No additional payment shall be made for construction of handicap curb ramps located as designated by the Engineer in accordance with Tennessee state law. All mineral aggregate base used for fine grading and subgrade preparation as specified in Item 16.04 shall be included in the unit prices of the various items.

END OF SECTION

APPENDIX A
SITE MAP



APPENDIX B
CIVIL



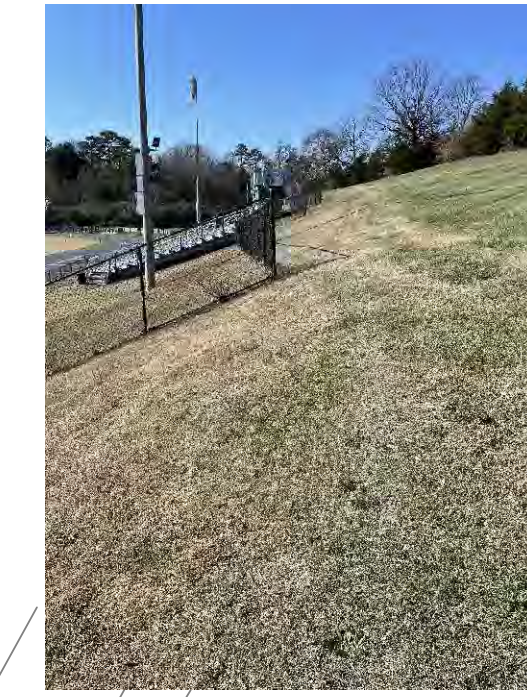
VIEW OF EAST END OF FOOTBALL FIELD SWALE AND TRACK



VIEW OF WEST END OF FOOTBALL FIELD SWALE AND TRACK



EXISTING HOME BLEACHERS



VIEW BEHIND HOME BLEACHERS



SOUNDPOST - NORTH SIDE OF FEILD NEXT TO TRACK



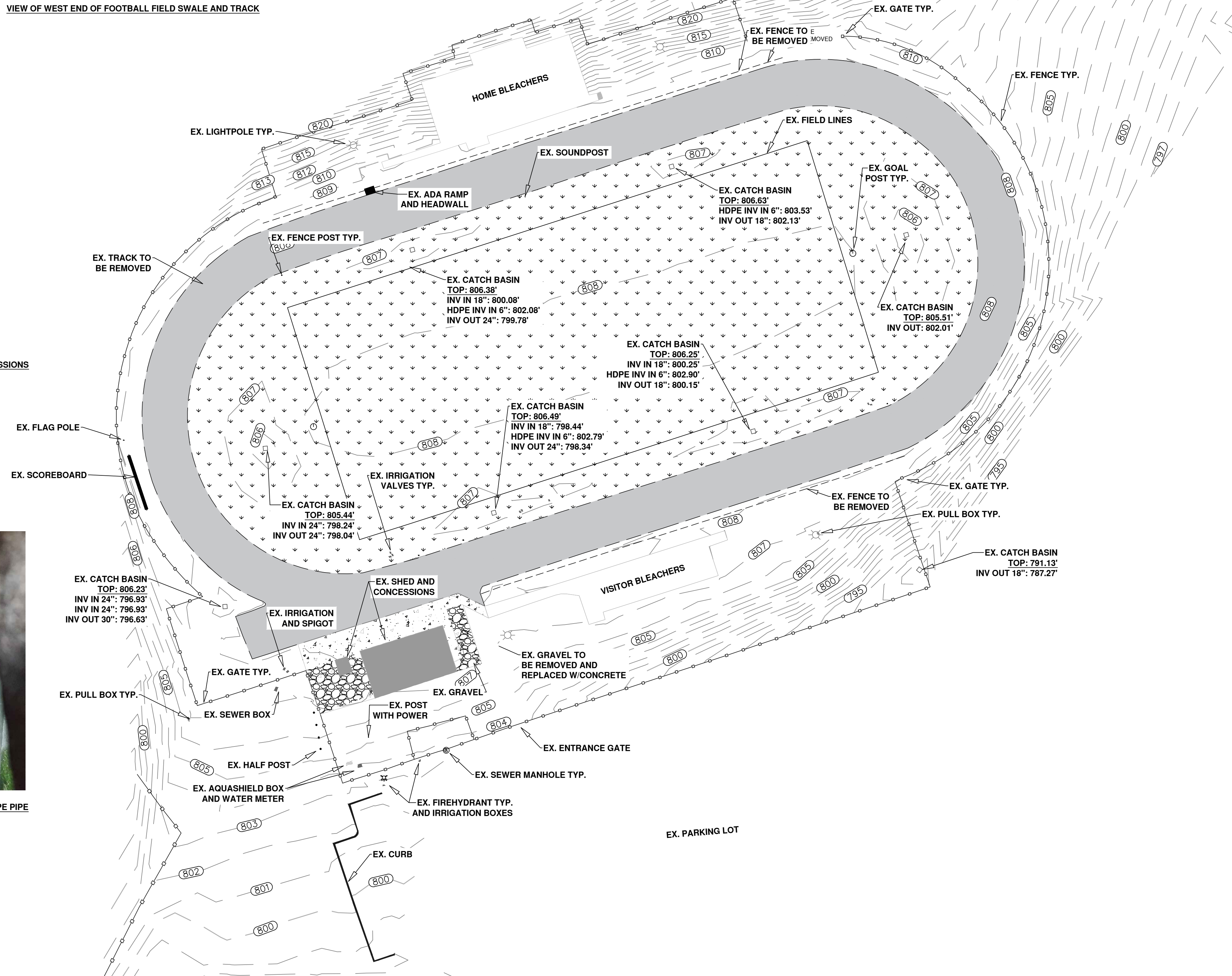
HALFPOSTS AND HOLE WEST OF CONCESSIONS



EXISTING CATCH BASIN - WEST END OF FIELD



INSIDE EXISTING CATCH BASIN WITH HDPE PIPE



CALL BEFORE YOU DIG

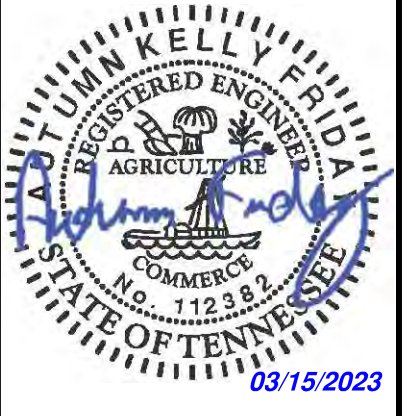
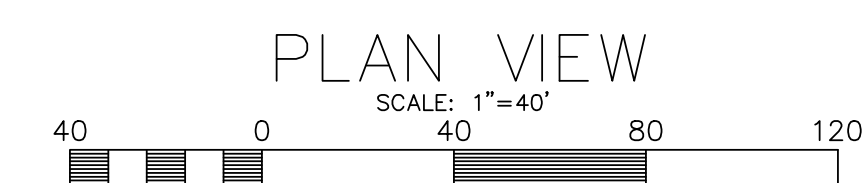
UTILITIES PROTECTION CENTER



TENNESSEE ONE CALL
811
WWW.TNONECALL.COM

THREE WORKING DAYS BEFORE YOU DIG

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.



HAMILTON COUNTY PUBLIC WORKS DIVISION
ENGINEERING DEPARTMENT
1250 Market Street Suite 3046
Chattanooga, Tennessee 37402-2713



NO.	DATE	DESCRIPTION	BY

REVISIONS

East Hamilton High Track Improvements
2015 Ooltawah Ringgold Road
Ooltawah, Tennessee 37363

EXISTING CONDITIONS

DESIGN:	AKF
DRAWN:	JET
CHECKED:	NAG
APPROVED:	AKF
SCALE:	1"=40'
DATE:	03/15/23

SHEET NO. **C-2**
PROJECT NO. 22-07-02.03

GENERAL NOTES:

1. ALL UTILITY LOCATIONS TO BE FIELD VERIFIED BY PROPER AGENCIES BEFORE BEGINNING CONSTRUCTION. ALL UNDERGROUND UTILITIES HAVE NOT BEEN FIELD LOCATED, NOR ARE ALL PURPORTED TO BE SHOWN. INFORMATION SHOWN SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR TO CONTACT ALL UTILITY COMPANIES TO HAVE UTILITIES FIELD LOCATED BEFORE EXCAVATION OR DEMOLITION WORK BEGINS.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH HAMILTON COUNTY REGULATIONS AND CODES OF O.S.H.A. STANDARDS.
3. CONTRACTOR SHALL OBTAIN ALL PERMITS BEFORE CONSTRUCTION BEGINS.
4. NECESSARY AND SUFFICIENT BARRICADES, LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL MEASURES AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE BEGINNING CONSTRUCTION.
6. BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM HAMILTON COUNTY GIS AND ENGINEERING DEPARTMENT.
7. A PORTION OF THIS PROPERTY LIES IN ZONE AE (SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD) WHERE BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED PER HAMILTON CO. FLOOD INSURANCE RATE MAP 47065C0388G
8. THE CONTRACTOR SHALL FULL DEPTH SAW-CUT TO PROVIDE SMOOTH TRANSITIONS AT TIE-INS TO EXISTING EDGES OF PAVEMENT.
9. CONTRACTOR SHALL VERIFY ALL UTILITIES AND COORDINATE WITH UTILITY COMPANIES AND HAMILTON COUNTY DEPARTMENT OF EDUCATION.

NOTE: CONTRACTOR SHALL COORDINATE WITH HAMILTON DEPARTMENT OF EDUCATION FOR ALL EXISTING UTILITY LOCATIONS AND ANY UTILITY BOXES THAT NEED TO BE RELOCATED

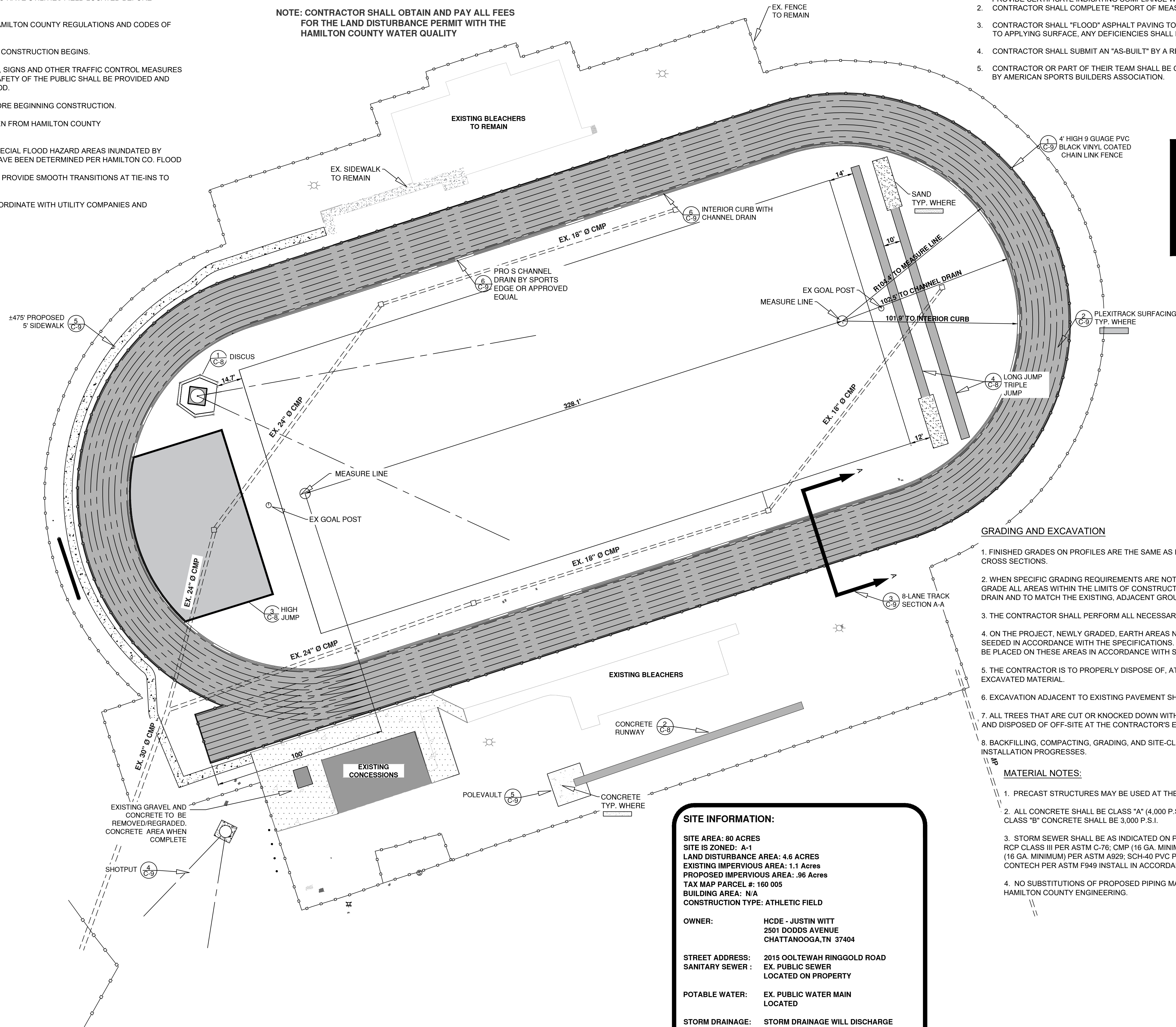
NOTE: CONTRACTOR SHALL COORDINATE EXACT FENCE LOCATIONS WITH HAMILTON COUNTY DEPARTMENT OF EDUCATION.

NOTE: CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR THE LAND DISTURBANCE PERMIT WITH THE HAMILTON COUNTY WATER QUALITY

GENERAL NOTES:

1. CONTRACTOR SHALL LAYOUT AND CONSTRUCT A 8-LANE EQUAL QUADRANT, 400M TRACK. STRIPE ALL TRACK LANE AND MARKINGS, IN ACCORDANCE WITH THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATION STANDARDS(NFHS) AND TSSAA REGULATIONS, AND PROVIDE CERTIFICATE INDICATING COMPLIANCE WITH NFHS & TSSAA REQUIREMENTS.
2. CONTRACTOR SHALL COMPLETE "REPORT OF MEASUREMENT" (INCLUDED IN SPECIFICATIONS).
3. CONTRACTOR SHALL "FLOOD" ASPHALT PAVING TO LOCATE ANY LOW AREA/BIRD BATHS PRIOR TO APPLYING SURFACE, ANY DEFICIENCIES SHALL BE CORRECTED AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL SUBMIT AN "AS-BUILT" BY A REGISTERED LAND SURVEYOR.
5. CONTRACTOR OR PART OF THEIR TEAM SHALL BE CERTIFIED AS A "CERTIFIED TRACK BUILDER" BY AMERICAN SPORTS BUILDERS ASSOCIATION.

NOTE: CONTRACTOR TO REMOVE EXISTING GRASSED AREAS AS REQUIRED TO FILL "D" ZONES AND INSTALL CHANNEL DRAIN. SEED AND STRAW SHALL BE PUT ON DISTURBED AREA.



GRADING AND EXCAVATION

1. FINISHED GRADES ON PROFILES ARE THE SAME AS FINISHED GRADES SHOWN ON TYPICAL SECTIONS AND ON CROSS SECTIONS.
2. WHEN SPECIFIC GRADING REQUIREMENTS ARE NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL GRADE ALL AREAS WITHIN THE LIMITS OF CONSTRUCTION, OR OTHERWISE DISTURBED BY CONSTRUCTION TO DRAIN AND TO MATCH THE EXISTING, ADJACENT GROUND.
3. THE CONTRACTOR SHALL PERFORM ALL NECESSARY STRIPPING OF EXISTING TOPSOIL ON THE JOBSITE.
4. ON THE PROJECT, NEWLY GRADED, EARTH AREAS NOT TO BE PAVED, RIP-RAPPED, OR STABILIZED, SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS. PRIOR TO SEEDING, A FOUR INCH LAYER OF TOPSOIL SHALL BE PLACED ON THESE AREAS IN ACCORDANCE WITH SAID SPECIFICATIONS.
5. THE CONTRACTOR IS TO PROPERLY DISPOSE OF, AT HIS OWN EXPENSE, ALL UNSUITABLE AND/OR SURPLUS, EXCAVATED MATERIAL.
6. EXCAVATION ADJACENT TO EXISTING PAVEMENT SHALL BE MADE TO A NEAT LINE.
7. ALL TREES THAT ARE CUT OR KNOCKED DOWN WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE REMOVED AND DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. BURNING IS NOT PERMITTED.
8. BACKFILLING, COMPACTING, GRADING, AND SITE-CLEANUP SHALL OCCUR DAILY AS THE FORCE MAIN INSTALLATION PROGRESSES.

MATERIAL NOTES:

1. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTOR'S OPTION.
2. ALL CONCRETE SHALL BE CLASS "A" (4,000 P.S.I.) UNLESS OTHERWISE NOTED ON THE DRAWINGS. CLASS "B" CONCRETE SHALL BE 3,000 P.S.I.
3. STORM SEWER SHALL BE AS INDICATED ON PLANS PER THE FOLLOWING MINIMUM REQUIREMENTS: RCP CLASS III PER ASTM C-76; CMP (16 GA. MINIMUM) PER ASTM A444; ULTRA FLOW GALVANIZED STEEL (16 GA. MINIMUM) PER ASTM A929; SCH-40 PVC PER ASTM D1782; A-2000 PVC AS MANUFACTURED BY CONTECH PER ASTM F949 INSTALL IN ACCORDANCE WITH ASTM D2321 OR APPROVED EQUAL.
4. NO SUBSTITUTIONS OF PROPOSED PIPING MATERIAL IS ALLOWED UNLESS APPROVED IN WRITING BY HAMILTON COUNTY ENGINEERING.

SITE INFORMATION:

SITE AREA: 80 ACRES
SITE IS ZONED: A-1
LAND DISTURBANCE AREA: 4.6 ACRES
EXISTING IMPERVIOUS AREA: 1.1 Acres
PROPOSED IMPERVIOUS AREA: .96 Acres
TAX MAP PARCEL #: 160 005
BUILDING AREA: N/A
CONSTRUCTION TYPE: ATHLETIC FIELD

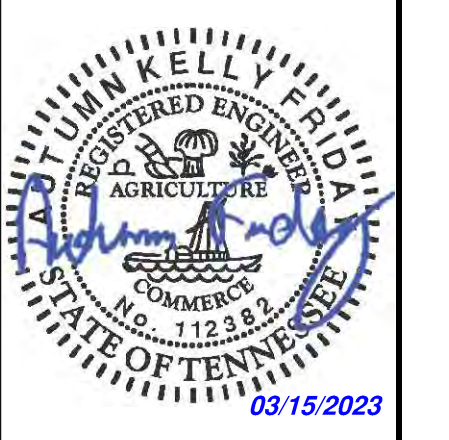
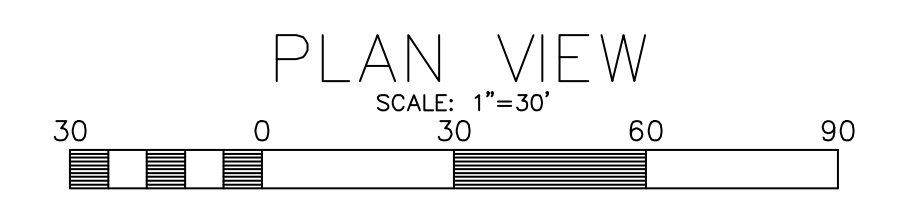
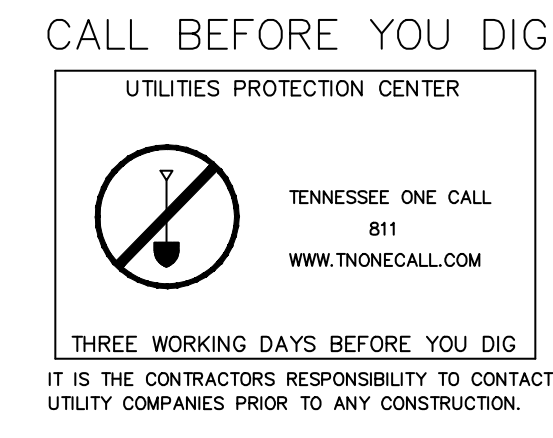
OWNER: HCDE - JUSTIN WITT
 2501 DODDS AVENUE
 CHATTANOOGA, TN 37404

STREET ADDRESS: 2015 OOLTEWAH RINGGOLD ROAD
SANITARY SEWER: EX. PUBLIC SEWER LOCATED ON PROPERTY

POTABLE WATER: EX. PUBLIC WATER MAIN LOCATED

STORM DRAINAGE: STORM DRAINAGE WILL DISCHARGE INTO EXISTING STORMWATER SYSTEM

FLOODZONE: THIS PROPERTY IS LOCATED IN ZONE X



HAMILTON COUNTY PUBLIC WORKS DIVISION
 ENGINEERING DEPARTMENT
 1250 Market Street Suite 3046
 Chattanooga, Tennessee 37402-2713



NO.	DATE	DESCRIPTION	BY

East Hamilton High Track Improvements
 2015 Ooltewah Ringgold Road
 Ooltewah, Tennessee 37363

DESIGN:	AKF
DRAWN:	NAG
CHECKED:	AKF
APPROVED:	AKF
SCALE:	1"=30'
DATE:	03/15/23

SHEET NO. **C-3**
 PROJECT NO. 22-07-02.03

SITE PLAN

GRADING AND EXCAVATION

1. FINISHED GRADES ON PROFILES ARE THE SAME AS FINISHED GRADES SHOWN ON TYPICAL SECTIONS AND ON CROSS SECTIONS.
2. WHEN SPECIFIC GRADING REQUIREMENTS ARE NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL GRADE ALL AREAS WITHIN THE LIMITS OF CONSTRUCTION, OR OTHERWISE DISTURBED BY CONSTRUCTION TO DRAIN AND TO MATCH THE EXISTING, ADJACENT GROUND.
3. THE CONTRACTOR SHALL PERFORM ALL NECESSARY STRIPPING OF EXISTING TOPSOIL ON THE JOBSITE.
4. ON THE PROJECT, NEWLY GRADED, EARTH AREAS NOT TO BE PAVED, RIP-RAPPED, OR STABILIZED, SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS. PRIOR TO SEEDING, A FOUR INCH LAYER OF TOPSOIL SHALL BE PLACED ON THESE AREAS IN ACCORDANCE WITH SAID SPECIFICATIONS.
5. THE CONTRACTOR IS TO DISPOSE OF, AT HIS OWN EXPENSE, ALL UNSUITABLE AND/OR SURPLUS, EXCAVATED MATERIAL.
6. EXCAVATION ADJACENT TO EXISTING PAVEMENT SHALL BE MADE TO A NEAT LINE.
7. ALL TREES THAT ARE CUT OR KNOCKED DOWN WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE REMOVED AND DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. BURNING IS NOT PERMITTED.
8. BACKFILLING, COMPACTING, GRADING, AND SITE-CLEANUP SHALL OCCUR DAILY AS THE FORCE MAIN INSTALLATION PROGRESSES.

GENERAL NOTES:

1. THE SLOPE OF THE TRACK OVAL SHALL BE NO GREATER THAN 0.10" IN THE RUNNING DIRECTION.
2. CONTRACTOR SHALL REMOVE EXISTING PAVEMENT AND BASE, AND PROPERLY DISPOSE.
3. TRACK SHALL BE LASER GRADED TO PROVE A 1.0% CROSS-SLOPE TOWARDS FIELD.
4. CONTRACTOR SHALL PROVIDE A CHANNEL DRAIN SYSTEM. CONTRACTOR SHALL SUBMIT DESIGN FOR APPROVAL AND CONNECT TO EXISTING STORM DRAINAGE SYSTEM.

MATERIAL NOTES:

1. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTORS OPTION.
2. ALL CONCRETE SHALL BE CLASS "A" (4,000 P.S.I.) UNLESS OTHERWISE NOTED ON THE DRAWINGS. CLASS "B" CONCRETE SHALL BE 3,000 P.S.I.
3. STORM SEWER SHALL BE AS INDICATED ON PLANS PER THE FOLLOWING MINIMUM REQUIREMENTS: RCP CLASS III PER ASTM C-76; CMP (16 GA. MINIMUM) PER ASTM A444; ULTRA FLOW GALVANIZED STEEL (16 GA. MINIMUM) PER ASTM A929; SCH-40 PVC PER ASTM D1782; A-2000 PVC AS MANUFACTURED BY CONTECH PER ASTM F949 INSTALL IN ACCORDANCE WITH ASTM D2321 OR APPROVED EQUAL.
4. NO SUBSTITUTIONS OF PROPOSED PIPING MATERIAL IS ALLOWED UNLESS APPROVED IN WRITING BY HAMILTON COUNTY ENGINEERING.

CONTRACTOR SHALL REMOVE ALL ASPHALT AND BASE ON THE TRACK CHANNEL DRAIN COLLECTOR SYSTEM TO CONNECT TO EX. STORMSEWER

APPROXIMATE GRADING LIMITS

EXISTING CATCH BASIN TO BE RAISED EX. TOP=805.5± NEW TOP=806.9± CONTRACTOR SHALL FABRICATE REMOVABLE SOLID LID WITH TRACK SURFACING

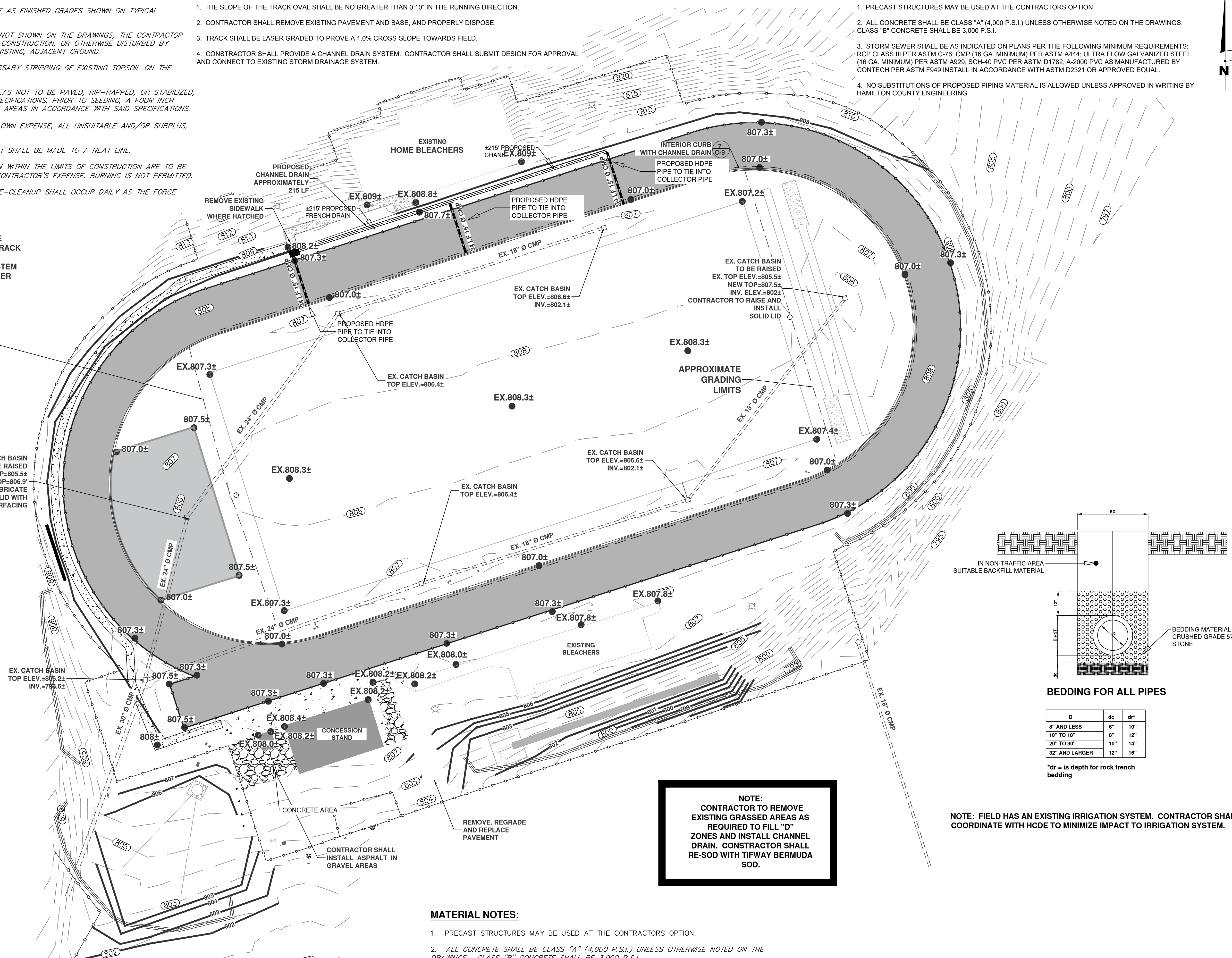
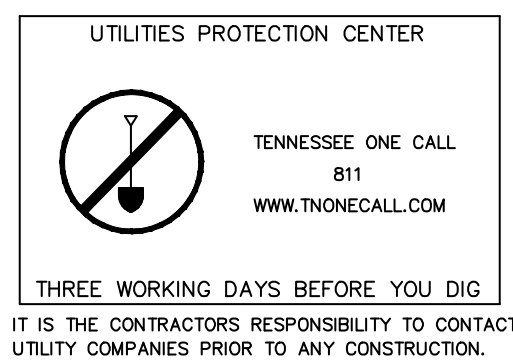
EX. CATCH BASIN TOP ELEV.=806.2± INV.=798.6±

CONTRACTOR SHALL INSTALL ASPHALT IN GRAVEL AREAS

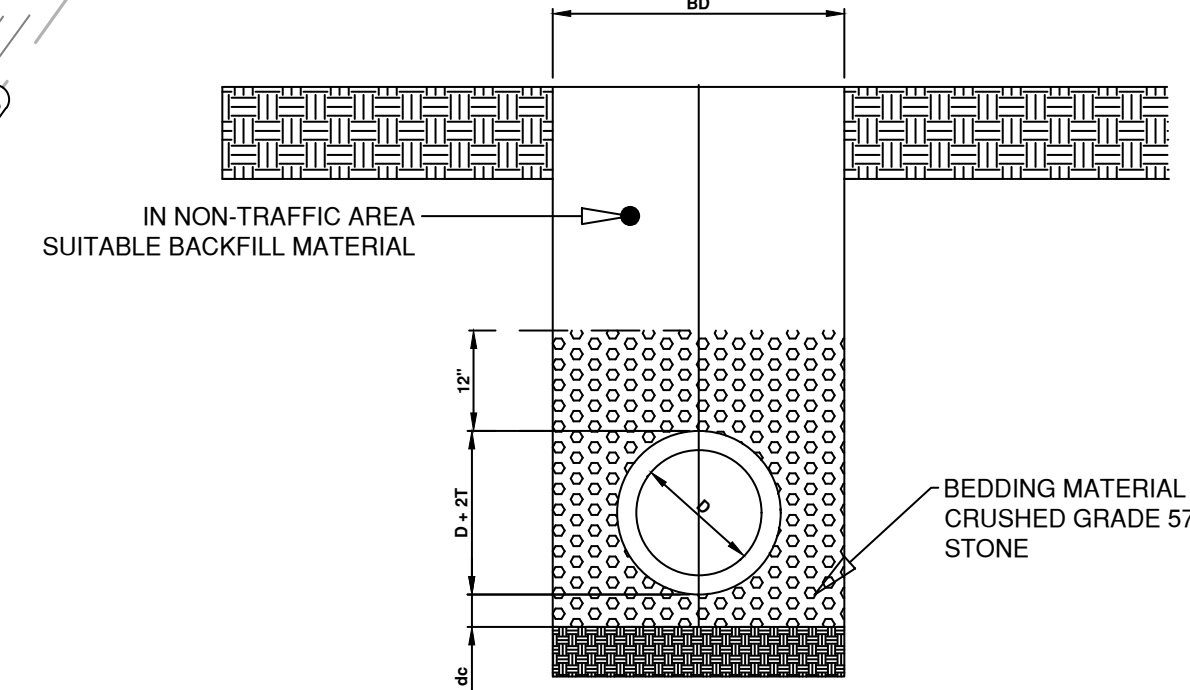
MATERIAL NOTES:

1. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTORS OPTION.
2. ALL CONCRETE SHALL BE CLASS "A" (4,000 P.S.I.) UNLESS OTHERWISE NOTED ON THE DRAWINGS. CLASS "B" CONCRETE SHALL BE 3,000 P.S.I.
3. STORM SEWER SHALL BE AS INDICATED ON PLANS PER THE FOLLOWING MINIMUM REQUIREMENTS: RCP CLASS III PER ASTM C-76; CMP (16 GA. MINIMUM) PER ASTM A444; ULTRA FLOW GALVANIZED STEEL (16 GA. MINIMUM) PER ASTM A929; SCH-40 PVC PER ASTM D1782; A-2000 PVC AS MANUFACTURED BY CONTECH PER ASTM F949 INSTALL IN ACCORDANCE WITH ASTM D2321 OR APPROVED EQUAL.
4. NO SUBSTITUTIONS OF PROPOSED PIPING MATERIAL IS ALLOWED UNLESS APPROVED IN WRITING BY HAMILTON COUNTY ENGINEERING.

CALL BEFORE YOU DIG



NOTE: CONTRACTOR TO REMOVE EXISTING GRASSED AREAS AS REQUIRED TO FILL "D" ZONES AND INSTALL CHANNEL DRAIN. CONTRACTOR SHALL RE-SOD WITH TIFWAY BERMUDA SOD.

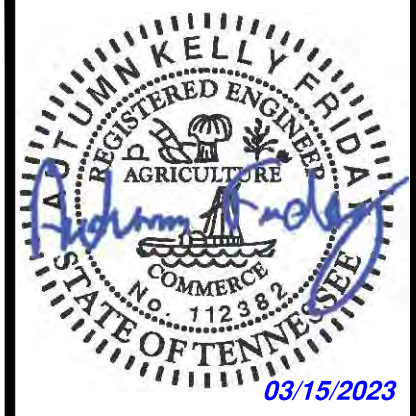
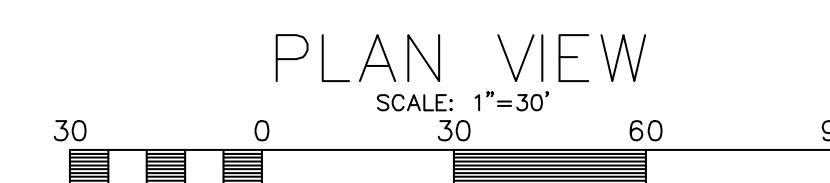


BEDDING FOR ALL PIPES

D	dc	dr*
8" AND LESS	6"	10"
10" TO 18"	8"	12"
20" TO 30"	10"	14"
32" AND LARGER	12"	16"

*dr = is depth for rock trench bedding

NOTE: FIELD HAS AN EXISTING IRRIGATION SYSTEM. CONTRACTOR SHALL COORDINATE WITH HCDE TO MINIMIZE IMPACT TO IRRIGATION SYSTEM.



HAMILTON COUNTY PUBLIC WORKS DIVISION
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1250 Market Street Suite 3046
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NO.	DATE	DESCRIPTION	BY
REVISIONS			

East Hamilton High Track Improvements
2015 Ooltawah Ringgold Road
Ooltawah, Tennessee 37363

DESIGN:	AKF
DRAWN:	NAG
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SCALE:	1"=30'
DATE:	03/15/23

SHEET NO. **C-3**
PROJECT NO. 22-07-02.03

GRADING

LAND DISTURBING ACTIVITY NOTES:

VEGETATION: TOP SOIL WILL BE SALVAGED, STOCK PILED AND SPREAD ON AREAS TO BE VEGETATED. TREES OUTSIDE OF THE CLEARING LINE WILL BE PROTECTED FROM DAMAGE BY APPROPRIATE MARKINGS. SUPPLEMENTAL VEGETATION WILL BE ESTABLISHED.

EROSION CONTROL PROGRAM: CLEARING WILL BE KEPT TO A MINIMUM. VEGETATION AND MULCH WILL BE APPLIED TO APPLICABLE AREAS IMMEDIATELY AFTER GRADING IS COMPLETED. LAND DISTURBING WILL BE EMPLOYED TO PREVENT EROSION IN AREAS OF CONCENTRATED WATER FLOWS. EROSION AT THE EXITS OF ALL STORM WATER STRUCTURES WILL BE PREVENTED BY THE INSTALLATION OF STORM DRAIN OUTLET PROTECTION DEVICES.

SEDIMENT CONTROL PROGRAM: SEDIMENT CONTROL WILL BE ACCOMPLISHED BY THE INSTALLATION OF SEDIMENT BASINS, SEDIMENT FENCES, AND ADDITIONAL MEASURES AS REQUIRED. DIVERSIONS AND DIKES WILL BE INSTALLED TO DIVERT SEDIMENT LADEN RUNOFF INTO THE SEDIMENT BASINS AND TO PROTECT CUT AND FILL SLOPES FROM EROSION. A TEMPORARY CONSTRUCTION EXIT WILL BE EMPLOYED TO PREVENT THE TRANSPORT OF SEDIMENT FROM SITE BY VEHICULAR TRAFFIC.

STANDARDS AND SPECIFICATIONS: ALL DESIGNS WILL CONFORM TO AND ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICS OF THE PUBLICATION ENTITLED "MANUAL FOR EROSION AND SEDIMENT CONTROL IN TENNESSEE."

SAFETY PROTECTION: CONSTRUCTION ACTIVITIES WILL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS. PERMANENT STORM WATER DETENTION STRUCTURES WILL BE POSTED AND FENCED TO EXCLUDE CHILDREN.

MAINTENANCE PROGRAM: SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSPECTED DAILY. ANY DAMAGES OBSERVED WILL BE REPAIRED BY THE END OF THAT DAY. CLEAN OUT OF SEDIMENT CONTROL STRUCTURES WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE SPECIFICATIONS AND SEDIMENT DISPOSAL ACCOMPLISHED BY SPREADING ON THE SITE. SEDIMENT BASINS AND BARRIERS WILL REMAIN IN PLACE UNTIL SEDIMENT CONTRIBUTING AREAS ARE STABILIZED. SEDIMENT BASINS, THE SEDIMENT FENCES, AND THE BARRIERS WILL THEN BE REMOVED AND THE AREAS OCCUPIED BY THESE STRUCTURES VEGETATED. GUIDELINES FOR THE MAINTENANCE OF ESTABLISHED VEGETATION WILL BE PROVIDED TO THE OWNER WHEN ALL DISTURBED AREAS ARE STABILIZED.

NOTE: EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE CONTROL. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

SITE AND CONTACT NOTES:

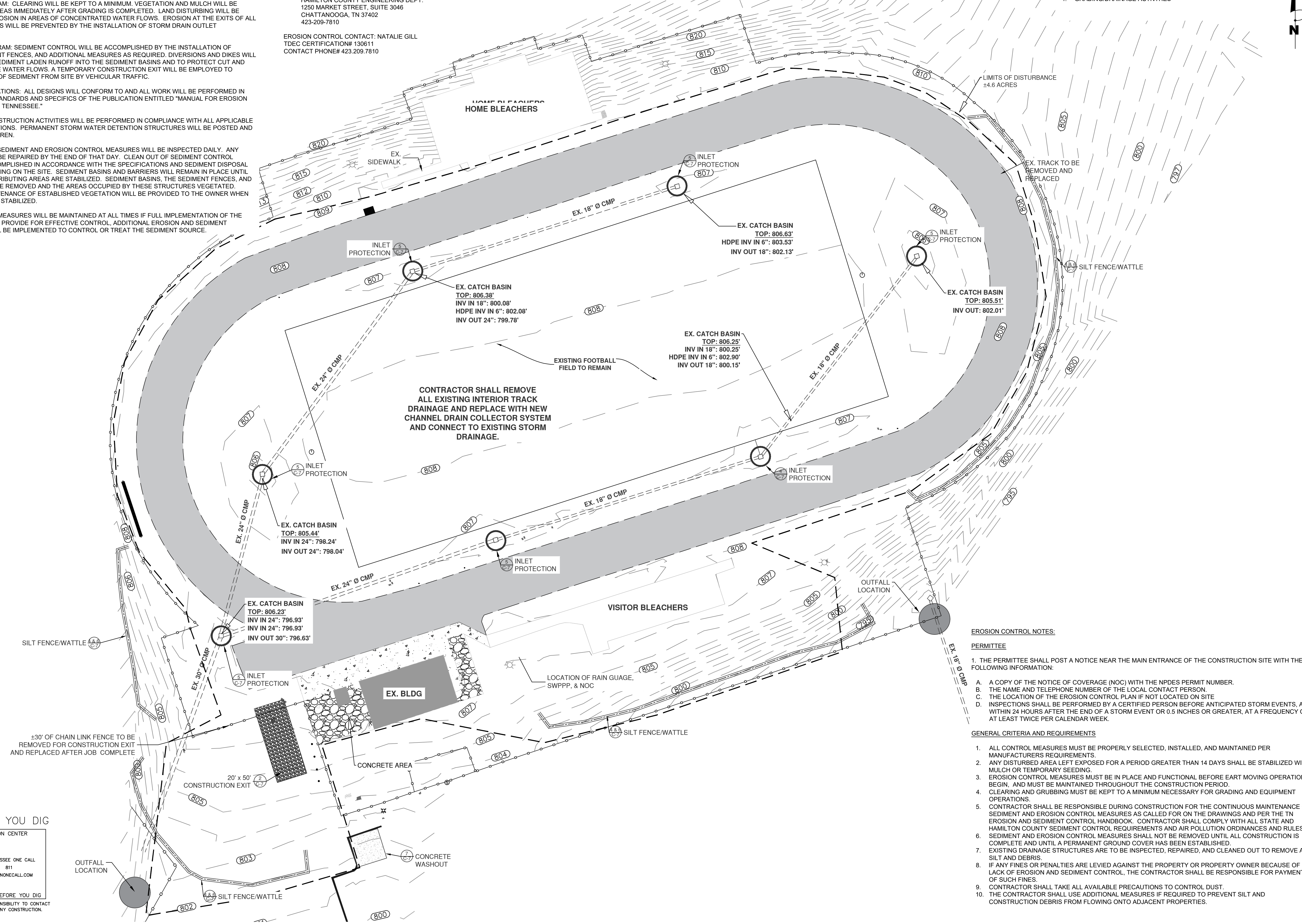
SITE ADDRESS: 2015 Ooltewah Ringgold Road
Ooltewah, TN 37363
AREA DISTURBED: APPROXIMATELY 4.3± ACRES
OWNER:
HAMILTON COUNTY ENGINEERING DEPT.
1250 MARKET STREET, SUITE 3046
CHATTANOOGA, TN 37402
423-209-7810

EROSION CONTROL CONTACT: NATALIE GILL
TDEC CERTIFICATION# 130611
CONTACT PHONE# 423.209.7810

NOTE: TWICE WEEKLY INSPECTIONS SHOULD BE 72 HOURS APART AND THE INSPECTOR MUST BE TNEPSC LEVEL 1 CERTIFIED

CONSTRUCTION ACTIVITIES PHASE 1

1. INSTALL ALL PERIMETER EROSION CONTROL MEASURES.
2. REMOVE EXISTING TRACK AND SUBBASE/DEMOLITION
3. CLEAR AND GRUB ALL DISTURBED AREAS.
4. GRADING/DRAINAGE ACTIVITIES



EROSION CONTROL NOTES:

PERMITTEE

1. THE PERMITTEE SHALL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION:
 - A. A COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER.
 - B. THE NAME AND TELEPHONE NUMBER OF THE LOCAL CONTACT PERSON.
 - C. THE LOCATION OF THE EROSION CONTROL PLAN IF NOT LOCATED ON SITE
 - D. INSPECTIONS SHALL BE PERFORMED BY A CERTIFIED PERSON BEFORE ANTICIPATED STORM EVENTS, AND WITHIN 24 HOURS AFTER THE END OF A STORM EVENT OR 0.5 INCHES OR GREATER, AT A FREQUENCY OF AT LEAST TWICE PER CALENDAR WEEK.

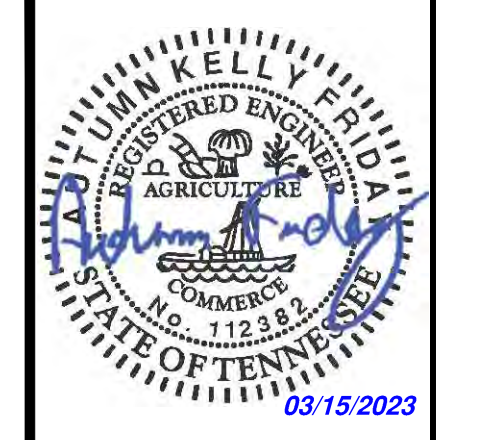
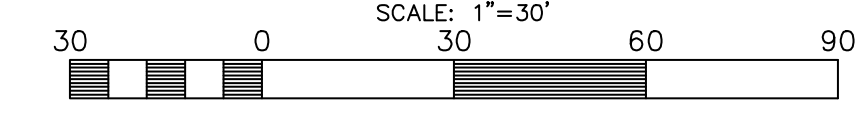
GENERAL CRITERIA AND REQUIREMENTS

1. ALL CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED PER MANUFACTURERS REQUIREMENTS.
2. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
3. EROSION CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. CLEARING AND GRUBBING MUST BE KEPT TO A MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATIONS.
5. CONTRACTOR SHALL BE RESPONSIBLE DURING CONSTRUCTION FOR THE CONTINUOUS MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES AS CALLED FOR ON THE DRAWINGS AND PER THE TN EROSION AND SEDIMENT CONTROL HANDBOOK. CONTRACTOR SHALL COMPLY WITH ALL STATE AND HAMILTON COUNTY SEDIMENT CONTROL REQUIREMENTS AND AIR POLLUTION ORDINANCES AND RULES.
6. SEDIMENT AND EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL CONSTRUCTION IS COMPLETE AND UNTIL A PERMANENT GROUND COVER HAS BEEN ESTABLISHED.
7. EXISTING DRAINAGE STRUCTURES ARE TO BE INSPECTED, REPAIRED, AND CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
8. IF ANY FINES OR PENALTIES ARE LEVIED AGAINST THE PROPERTY OR PROPERTY OWNER BECAUSE OF LACK OF EROSION AND SEDIMENT CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENTS OF SUCH FINES.
9. CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST.
10. THE CONTRACTOR SHALL USE ADDITIONAL MEASURES IF REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES.

CALL BEFORE YOU DIG

UTILITIES PROTECTION CENTER
TENNESSEE ONE CALL
811
WWW.TNONECALL.COM
THREE WORKING DAYS BEFORE YOU DIG
IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

PLAN VIEW



HAMILTON COUNTY PUBLIC WORKS DIVISION
ENGINEERING DEPARTMENT
1250 Market Street Suite 3046
Chattanooga, Tennessee 37402-2713



NO.	DATE	DESCRIPTION	BY
REVISIONS			

East Hamilton High Track Improvements
2015 Ooltewah Ringgold Road
Ooltewah, Tennessee 37363

EROSION CONTROL PHASE I

DESIGN:	NAG
DRAWN:	JET
CHECKED:	AKF
APPROVED:	AKF
SCALE:	1"=30'
DATE:	03/15/23
SHEET NO.	C-3
PROJECT NO.	22-07-02.03

EROSION CONTROL NOTES:

PERMITTEE

1. THE PERMITTEE SHALL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION:

- A. A COPY OF THE NOTICE OF COVERAGE (NOC) WITH THE NPDES PERMIT NUMBER.
- B. THE NAME AND TELEPHONE NUMBER OF THE LOCAL CONTACT PERSON.
- C. THE LOCATION OF THE EROSION CONTROL PLAN IF NOT LOCATED ON SITE
- D. INSPECTIONS SHALL BE PERFORMED BY A CERTIFIED PERSON BEFORE ANTICIPATED STORM EVENTS, AND WITHIN 24 HOURS AFTER THE END OF A STORM EVENT OR 0.5 INCHES OR GREATER, AT A FREQUENCY OF AT LEAST TWICE PER CALENDAR WEEK.

GENERAL CRITERIA AND REQUIREMENTS

- 1. ALL CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED PER MANUFACTURERS REQUIREMENTS.
- 2. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
- 3. EROSION CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- 4. CLEARING AND GRUBBING MUST BE KEPT TO A MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATIONS.
- 5. CONTRACTOR SHALL BE RESPONSIBLE DURING CONSTRUCTION FOR THE CONTINUOUS MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES AS CALLED FOR ON THE DRAWINGS AND PER THE TN EROSION AND SEDIMENT CONTROL HANDBOOK. CONTRACTOR SHALL COMPLY WITH ALL STATE AND HAMILTON COUNTY SEDIMENT CONTROL REQUIREMENTS AND AIR POLLUTION ORDINANCES AND RULES.
- 6. SEDIMENT AND EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL CONSTRUCTION IS COMPLETE AND UNTIL A PERMANENT GROUND COVER HAS BEEN ESTABLISHED.
- 7. EXISTING DRAINAGE STRUCTURES ARE TO BE INSPECTED, REPAIRED, AND CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- 8. IF ANY FINES OR PENALTIES ARE LEVIED AGAINST THE PROPERTY OR PROPERTY OWNER BECAUSE OF LACK OF EROSION AND SEDIMENT CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENTS OF SUCH FINES.
- 9. CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST.
- 10. THE CONTRACTOR SHALL USE ADDITIONAL MEASURES IF REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES.

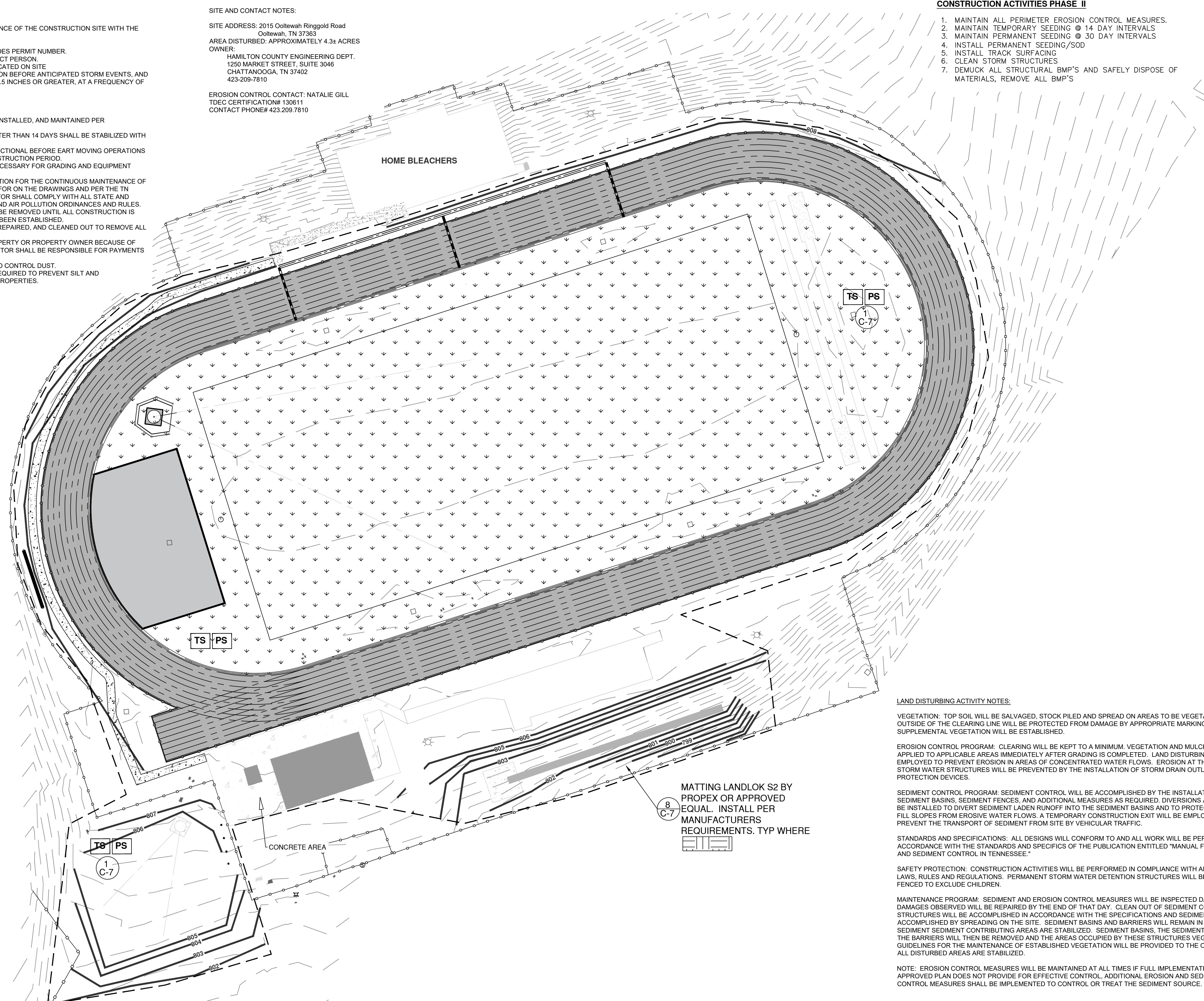
SITE AND CONTACT NOTES:

SITE ADDRESS: 2015 Ooltewah Ringgold Road
Ooltewah, TN 37363
AREA DISTURBED: APPROXIMATELY 4.3+ ACRES
OWNER:
HAMILTON COUNTY ENGINEERING DEPT.
1250 MARKET STREET, SUITE 3046
CHATTANOOGA, TN 37402
423-209-7810

EROSION CONTROL CONTACT: NATALIE GILL
TDEC CERTIFICATION# 130611
CONTACT PHONE# 423.209.7810

CONSTRUCTION ACTIVITIES PHASE II

- 1. MAINTAIN ALL PERIMETER EROSION CONTROL MEASURES.
- 2. MAINTAIN TEMPORARY SEEDING @ 14 DAY INTERVALS
- 3. MAINTAIN PERMANENT SEEDING @ 30 DAY INTERVALS
- 4. INSTALL PERMANENT SEEDING/SOD
- 5. INSTALL TRACK SURFACING
- 6. CLEAN STORM STRUCTURES
- 7. DEMUCK ALL STRUCTURAL BMP'S AND SAFELY DISPOSE OF MATERIALS, REMOVE ALL BMP'S



LAND DISTURBING ACTIVITY NOTES:

VEGETATION: TOP SOIL WILL BE SALVAGED, STOCK PILED AND SPREAD ON AREAS TO BE VEGETATED. TREES OUTSIDE OF THE CLEARING LINE WILL BE PROTECTED FROM DAMAGE BY APPROPRIATE MARKINGS. SUPPLEMENTAL VEGETATION WILL BE ESTABLISHED.

EROSION CONTROL PROGRAM: CLEARING WILL BE KEPT TO A MINIMUM. VEGETATION AND MULCH WILL BE APPLIED TO APPLICABLE AREAS IMMEDIATELY AFTER GRADING IS COMPLETED. LAND DISTURBING WILL BE EMPLOYED TO PREVENT EROSION IN AREAS OF CONCENTRATED WATER FLOWS. EROSION AT THE EXITS OF ALL STORM WATER STRUCTURES WILL BE PREVENTED BY THE INSTALLATION OF STORM DRAIN OUTLET PROTECTION DEVICES.

SEDIMENT CONTROL PROGRAM: SEDIMENT CONTROL WILL BE ACCOMPLISHED BY THE INSTALLATION OF SEDIMENT BASINS, SEDIMENT FENCES, AND ADDITIONAL MEASURES AS REQUIRED. DIVERSIONS AND DIKES WILL BE INSTALLED TO DIVERT SEDIMENT LADEN RUNOFF INTO THE SEDIMENT BASINS AND TO PROTECT CUT AND FILL SLOPES FROM EROSION. A TEMPORARY CONSTRUCTION EXIT WILL BE EMPLOYED TO PREVENT THE TRANSPORT OF SEDIMENT FROM SITE BY VEHICULAR TRAFFIC.

STANDARDS AND SPECIFICATIONS: ALL DESIGNS WILL CONFORM TO AND ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE PUBLICATION ENTITLED "MANUAL FOR EROSION AND SEDIMENT CONTROL IN TENNESSEE."

SAFETY PROTECTION: CONSTRUCTION ACTIVITIES WILL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS. PERMANENT STORM WATER DETENTION STRUCTURES WILL BE POSTED AND FENCED TO EXCLUDE CHILDREN.

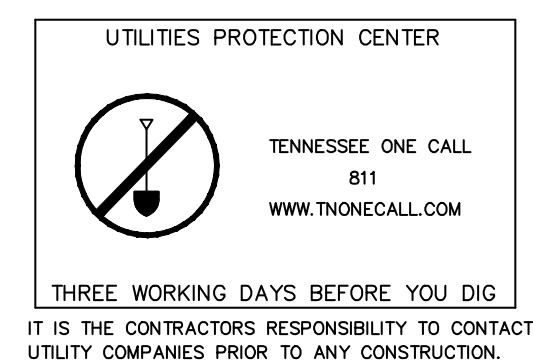
MAINTENANCE PROGRAM: SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSPECTED DAILY. ANY DAMAGES OBSERVED WILL BE REPAIRED BY THE END OF THAT DAY. CLEAN OUT OF SEDIMENT CONTROL STRUCTURES WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE SPECIFICATIONS AND SEDIMENT DISPOSAL ACCOMPLISHED BY SPREADING ON THE SITE. SEDIMENT BASINS AND BARRIERS WILL REMAIN IN PLACE UNTIL SEDIMENT CONTRIBUTING AREAS ARE STABILIZED. SEDIMENT BASINS, THE SEDIMENT FENCES, AND THE BARRIERS WILL THEN BE REMOVED AND THE AREAS OCCUPIED BY THESE STRUCTURES VEGETATED. GUIDELINES FOR THE MAINTENANCE OF ESTABLISHED VEGETATION WILL BE PROVIDED TO THE OWNER WHEN ALL DISTURBED AREAS ARE STABILIZED.

NOTE: EROSION CONTROL MEASURES IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

MATting LANDLOK S2 BY PROPEX OR APPROVED EQUAL. INSTALL PER MANUFACTURERS REQUIREMENTS. TYP WHERE

8
C-7

CALL BEFORE YOU DIG



PLAN VIEW

SCALE: 1"=30'
30 0 30 60 90



HAMILTON COUNTY PUBLIC WORKS DIVISION
ENGINEERING DEPARTMENT
1250 Market Street Suite 3046
Chattanooga, Tennessee 37402-2713



NO.	DATE	DESCRIPTION	BY

East Hamilton High Track Improvements
2015 Ooltewah Ringgold Road
Ooltewah, Tennessee 37363

EROSION CONTROL PHASE II

DESIGN:	NAG
DRAWN:	JET
CHECKED:	AKF
APPROVED:	AKF
SCALE:	1"=30'
DATE:	03/15/23

SHEET NO. **C-3**
PROJECT NO. 22-07-02.03

SPECIES	BROADCAST PER 1000 SF		RESOURCE AREA	PLANTING DATES												REMARKS	
	PER ACRE	PER 1000 SF		J	F	M	A	M	J	J	A	S	O	N	D		
BARLEY (Hordeum vulgare) alone in mixtures	144 LB	3.3 LB	M-L P C														14,000 SEED PER POUND. WATERHARDY. USE ON PRODUCTIVE SOILS.
LESPEDEZA, ANNUAL (Lespedeza striata) alone in mixtures	40 LB	0.9 LB	M-L P C														200,000 SEED PER POUND. MAY VOLUNTARILY FLOW FOR SEVERAL YEARS. USE INOCULANT EL.
LOVEGRASS, WEEPING (Eragrostis curvula) alone in mixtures	4 LB	0.1 LB	M-L P C														150,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS. MIX WITH SERICEA LESPEDEZA.
MILLET, BROWNTOP (Panicum fasciculatum) alone in mixtures	40 LB	0.9 LB	M-L P C														137,000 SEED PER POUND. QUICK DENSE COVER. WILL PRODUCE TOO MUCH COMPETITION IN MIXTURES IF SEEDS AT HIGH RATES.
RYE (Secale cereale) alone in mixtures	168 LB	3.9 LB	M-L P C														18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WATERHARDY.
RYEGRASS, ANNUAL (Lolium temulentum) alone	168 LB	3.9 LB	M-L P C														227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS BEST TO BE USED IN MIXTURES.

SOLID LINES INDICATE OPTIMUM DATES. DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.

TS DISTURBED AREA STABILIZATION - TEMPORARY SEEDING

SPECIES	BROADCAST PER 1000 SF		RESOURCE AREA	PLANTING DATES												REMARKS	
	PER ACRE	PER 1000 SF		J	F	M	A	M	J	J	A	S	O	N	D		
BERMUDA, COMMON (Cynodon dactylon) Hulled seed alone with other perennials	10 LB	0.2 LB	P C														1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOFT FERNING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON (Cynodon dactylon) Unhulled seed alone with other perennials	10 LB	0.2 LB	P C														PLANT WITH WINTER ANNUALS. PLANT WITH FALL FESCUE.
CETIPEDE (Eremochloa ophiuroides)	BLOCK SOD ONLY		P C														DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE AGAINST TOXICITY AND IN CONCENTRATED FLOW AREAS. RESEEDING IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PAVED AREAS, WATERWAYS OR FAR NORTH AS ATHENS AND ATLANTA.
CROWNVECH (Coronilla varia) with winter annuals or cool season grasses	15 LB	0.3 LB	M-L P														100,000 SEED PER POUND. DENSE GROWTH. DROUGHT TOLERANT AND FIRE RESISTANT. ATTRACTIVE ROSE, PINK, AND WHITE. BLOSSOMS SPRING TO LATE FALL. MIX W/ 50 LBS OF TALL FESCUE OR 10 LBS OF RYE. INOCULATE SEED W/ M INOCULANT. USE FROM N. ATLANTA AND NORTHWARD.
FESCUE, TALL (Festuca arundinacea) alone with other perennials	50 LB	1.1 LB	M-L P														227,000 SEED PER POUND. USE ALONE ON VERY BETTER SITES. NOT FOR PRODUCTION. USE WITH PERENNIAL LESPEDEZA OR CROWNVECH. APPLY TOPDRESSING IN SPRING FOLLOWING FALL PLANTING. NOT FOR HEAVY USE AREAS OF ATHLETIC FIELDS.
LESPEDEZA, SERICEA (Lespedeza cuneata) scarified annuals or cool	60 LB	1.4 LB	M-L P C														350,000 SEED PER POUND. WIDELY ACQUIRED. LOW MAINTENANCE. MIX W/ RESISTANT LEGUMES. COMMON BERMUDA OR TALL FESCUE. TAKES 2-3 YRS TO SCOUR. FULLY ESTABLISHED. EXCELLENT ON ROADSIDE. INOCULATE SEED WITH EL INOCULANT.
	75 LB	1.7 LB	M-L P C														MIX WITH TALL FESCUE OR WINTER ANNUALS.

SOLID LINES INDICATE OPTIMUM DATES. DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.

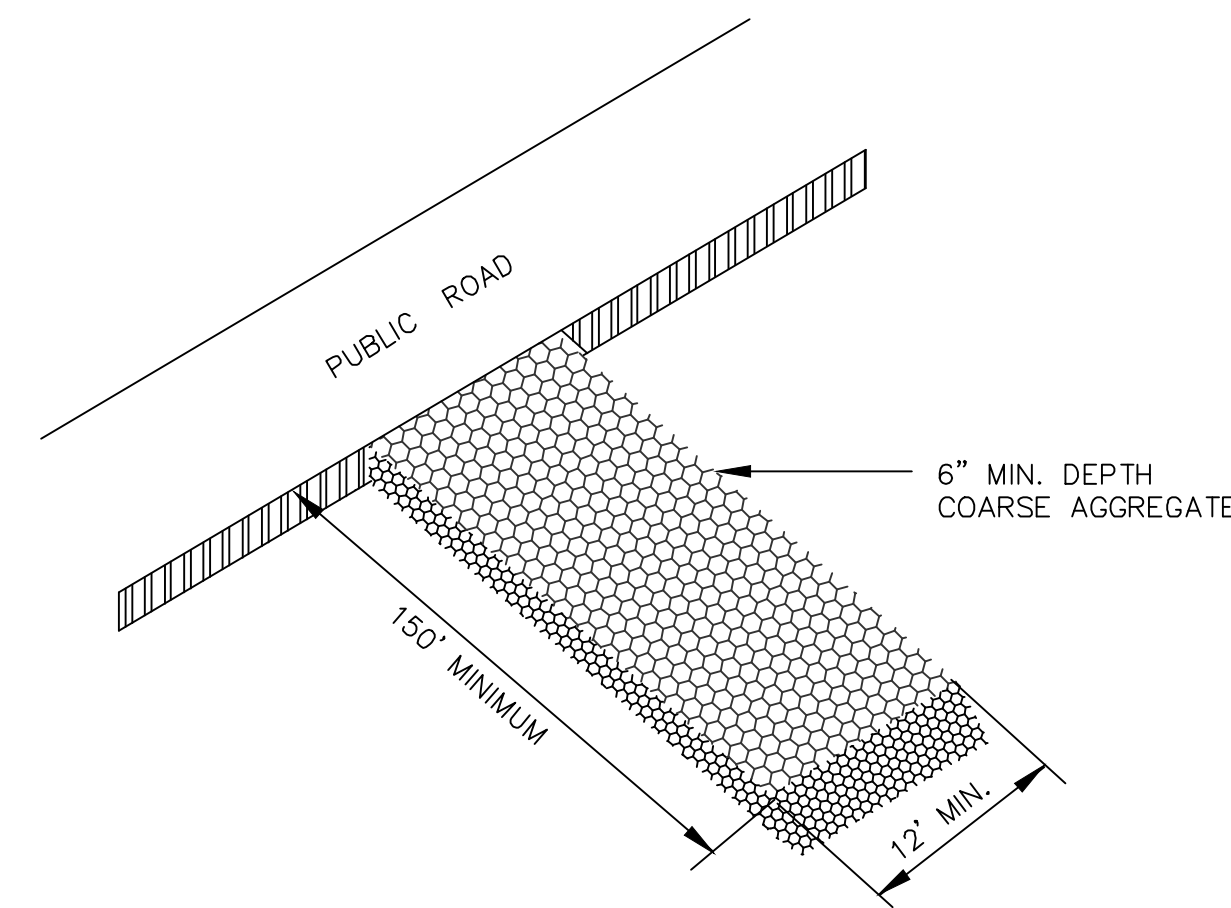
PS DISTURBED AREA STABILIZATION - PERMANENT SEEDING

SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N	
				TOP DRESSING RATE	1/2/30
COOL SEASON GRASSES	First	6-12-12	1500 LB/AC	50-100 LB/AC	1/2/30
	Second	6-12-12	1000 LB/AC	---	---
	Maintenance	10-10-10	400 LB/AC	---	---
COOL SEASON GRASSES AND LEGUMES	First	6-12-12	1500 LB/AC	0-50 LB/AC	1/2/30
	Second	0-10-10	1000 LB/AC	---	---
	Maintenance	0-10-10	400 LB/AC	---	---
GROUND COVERS	First	10-10-10	1300 LB/AC	3/30	---
	Second	10-10-10	1300 LB/AC	3/30	---
	Maintenance	10-10-10	1100 LB/AC	---	---
PINE SEEDLINGS	First	20-10-5	one 21-gram pellet per seedling placed in the closing hole	---	---
SHRUB LESPEDEZA	First	0-10-10	700 LB/AC	---	---
	Maintenance	0-10-10	700 LB/AC	4/---	---
TEMPORARY COVER CROPS SEEDS ALONE	First	10-10-10	500 LB/AC	30 LB/AC	5/---
WARM SEASON GRASSES	First	6-12-12	1500 LB/AC	50-100 LB/AC	2/6/30
	Second	6-12-12	800 LB/AC	50-100 LB/AC	2/30
	Maintenance	10-10-10	400 LB/AC	---	---
WARM SEASON GRASSES AND LEGUMES	First	6-12-12	1500 LB/AC	50 LB/AC	6/---
	Second	0-10-10	1000 LB/AC	---	---
	Maintenance	0-10-10	400 LB/AC	---	---

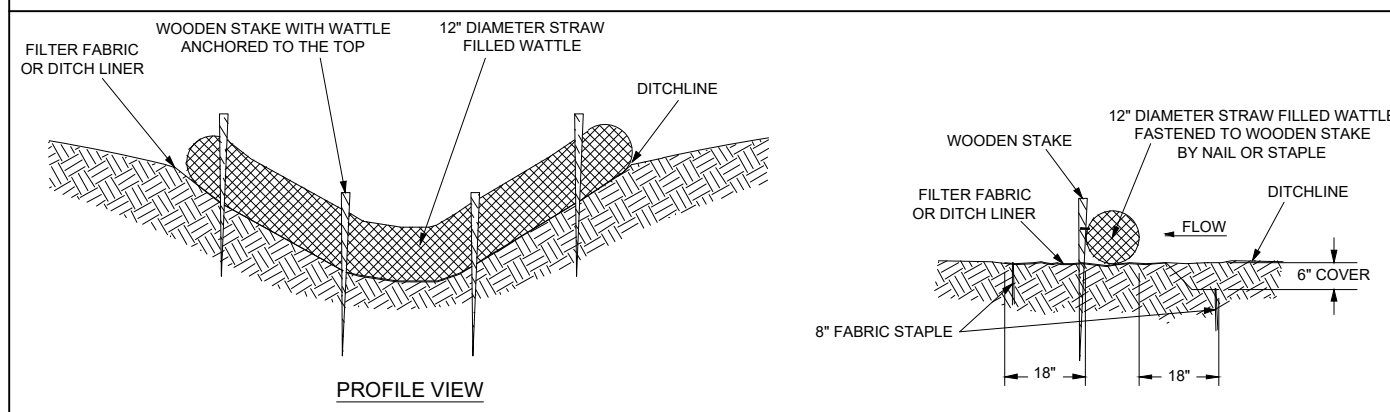
- 1/ APPLY IN SPRING FOLLOWING SEEDING
- 2/ APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED
- 3/ APPLY IN 3 SPLIT APPLICATIONS
- 4/ APPLY WHEN PLANTS ARE PRUNED
- 5/ APPLY TO GRASS SPECIES ONLY
- 6/ APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES

FM FERTILIZER REQUIREMENTS

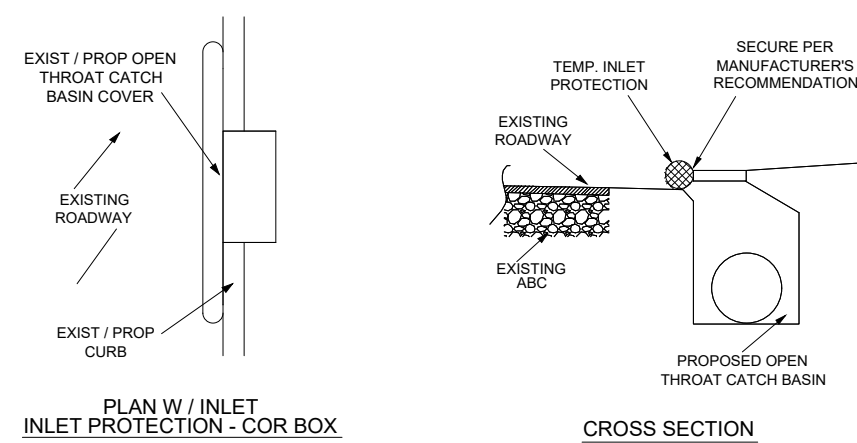
1 SEEDING CHARTS



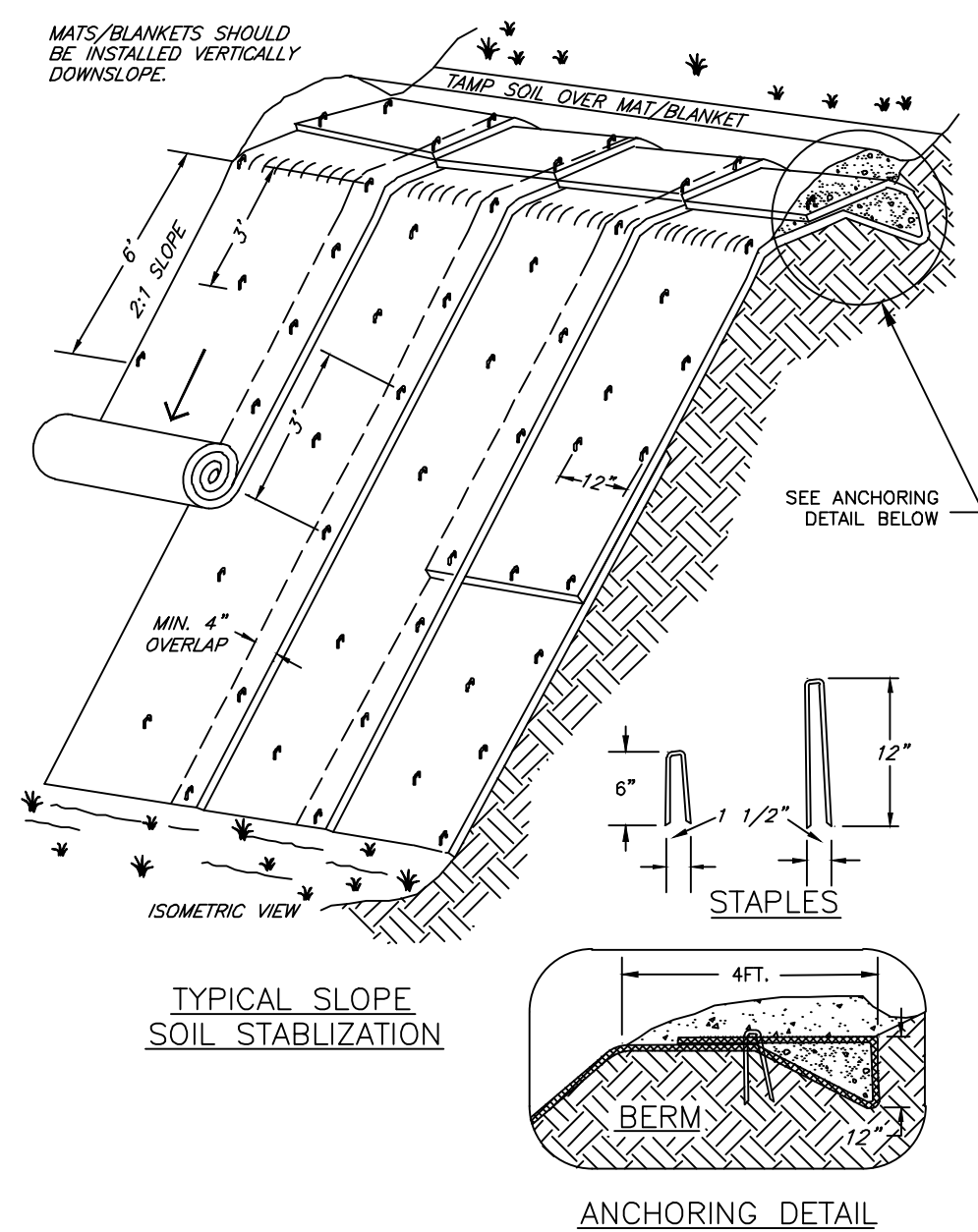
2 TEMPORARY CONSTRUCTION ENTRANCE



- NOTES:
1. WATTLES SHALL BE FILLED WITH STRAW OR OTHER APPROVED MATERIAL.
 2. SPACING FOR WATTLES SHALL BE DETERMINED BY THE SITE ENGINEER.
 3. WATTLES MAY BE USED FOR PROTECTION OF CATCH BASINS AND DRAIN INLETS WITH APPROVAL BY THE STORMWATER PROGRAM MANAGER OR DESIGNER.

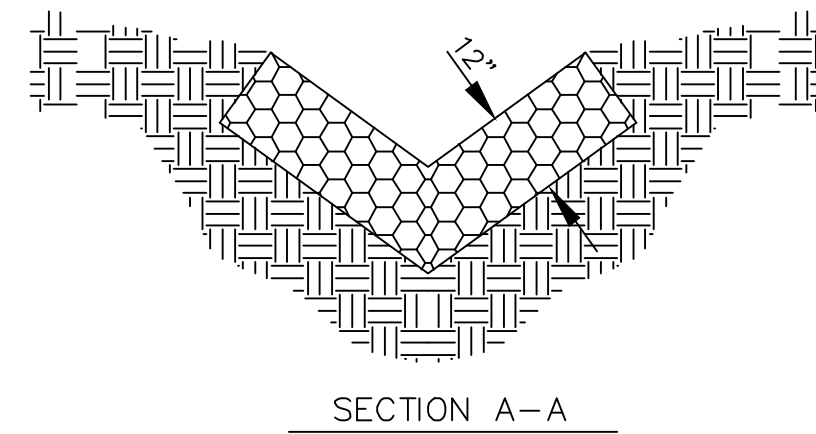
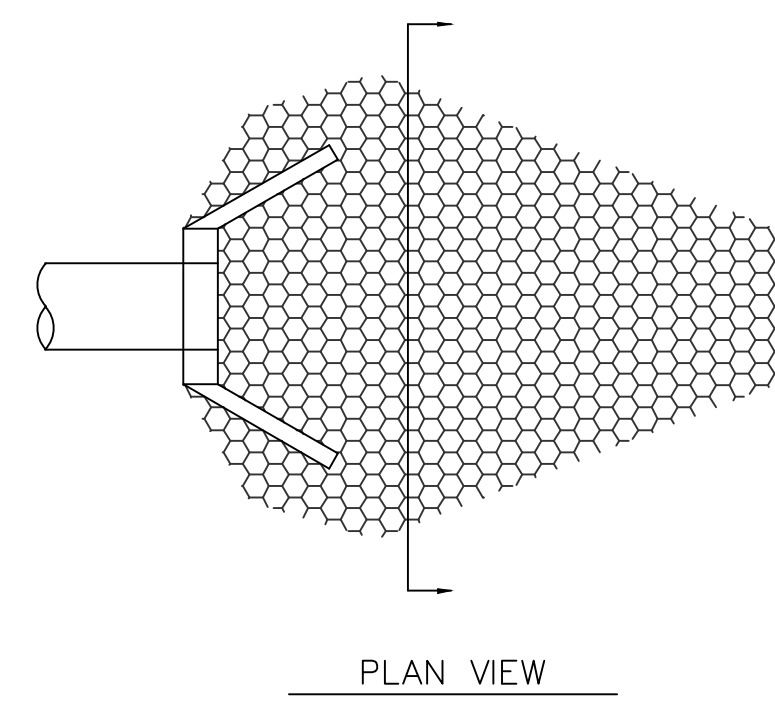


5 INLET PROTECTION

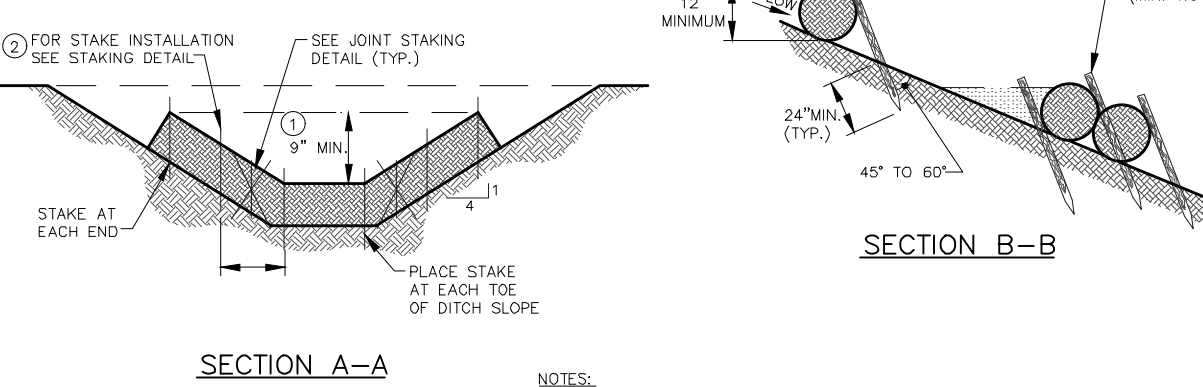
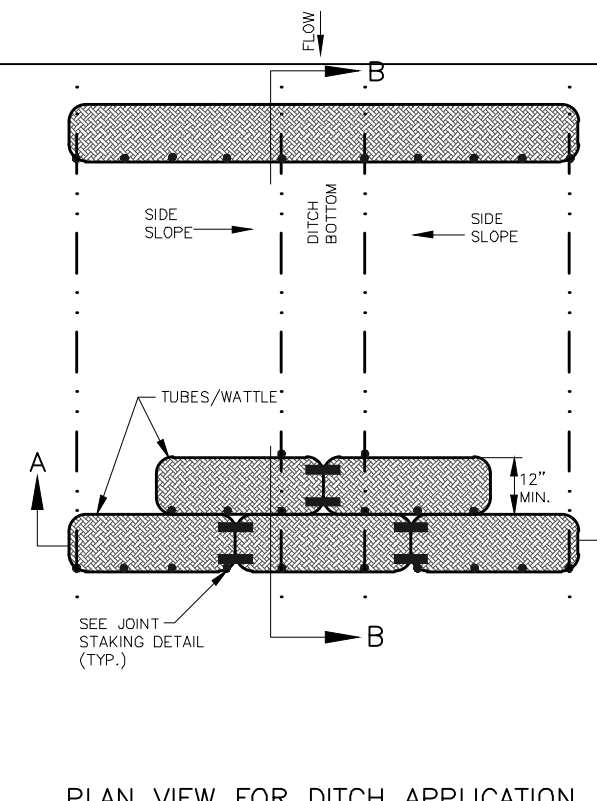


8 MATTING

- NOTES:
1. RIPRAP OUTLET PROTECTION TO BE PLACED IN WELL DEFINED OUTLET CHANNEL.
 2. THE APRON SHALL BE LOCATED SO THAT THERE ARE NO BENDS IN HORIZONTAL ALIGNMENT.

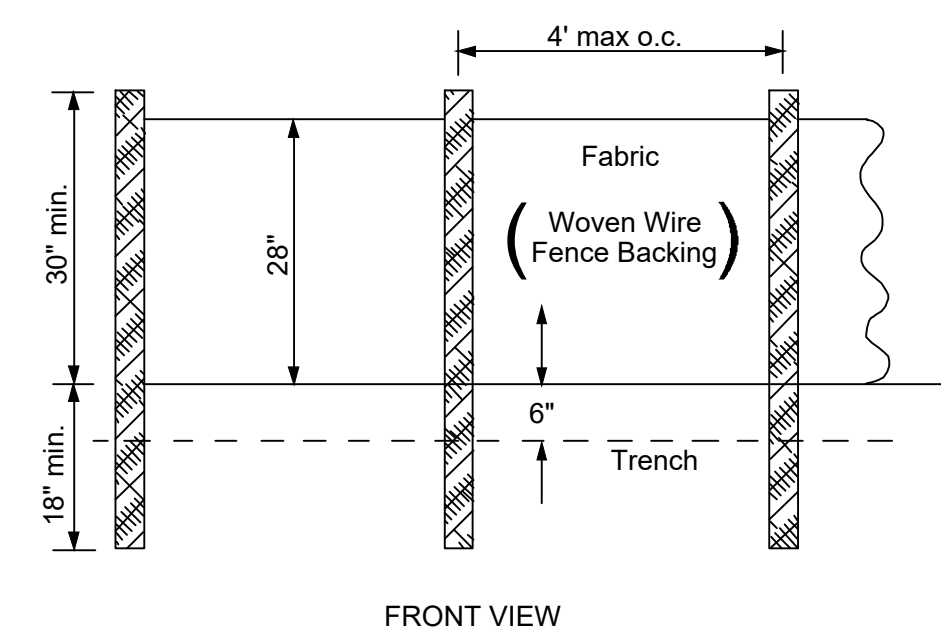
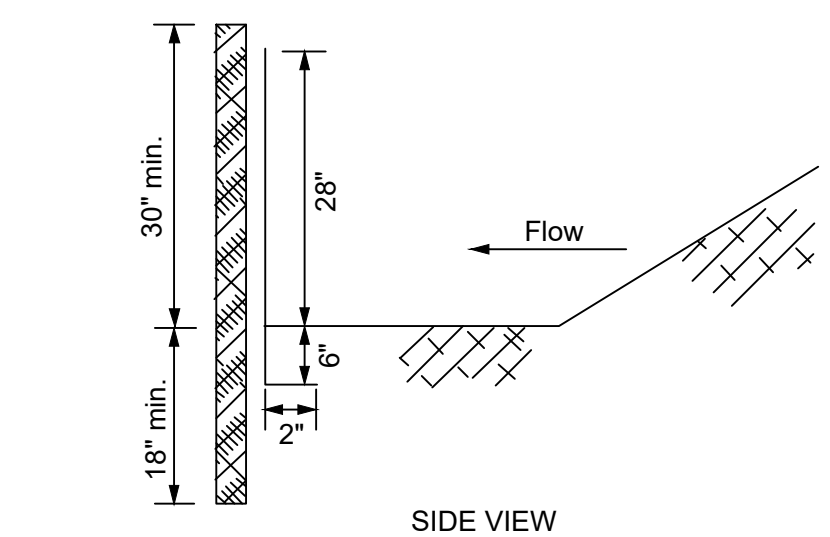


3 RIP RAP OUTLET PROTECTION



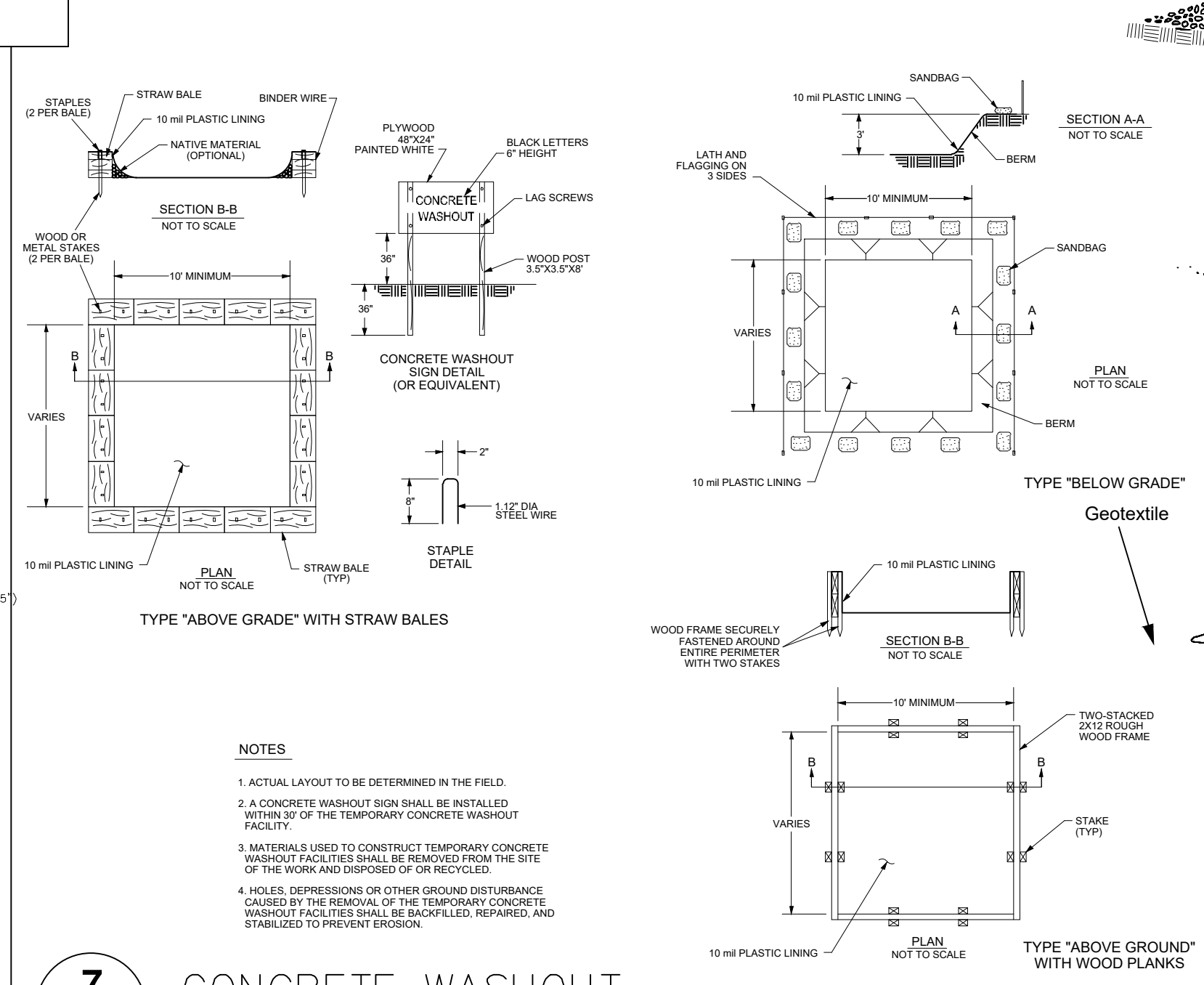
6 WATTLE

- NOTES:
1. THE DEPTH AND WIDTH OF THE WEIR SECTION OF THE WATTLE SHALL BE DESIGNED TO PASS THE 2 1/2" OR 5 1/2" STORM EVENT WITHOUT OVERSPREADING THE CHANNEL.
 2. STAKE PER MANUFACTURERS RECOMMENDATIONS



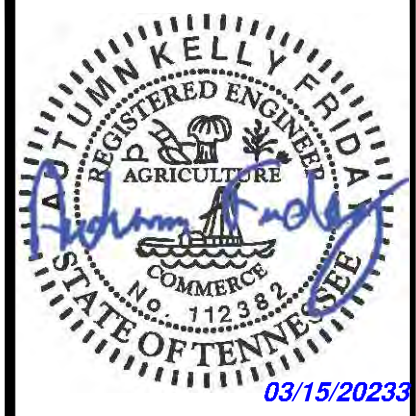
- NOTE:
- Use 36" D.O.T. approved fabric.
 - Use steel posts - only

4 SILT FENCE TYPE C



- NOTES:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
 2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 5' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
 4. HOLES, DEPRESSIONS OR OTHER SURFACE DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REPAIRED, REPAVED, AND STABILIZED TO PREVENT EROSION.

7 CONCRETE WASHOUT



HAMILTON COUNTY PUBLIC WORKS DIVISION
ENGINEERING DEPARTMENT
1250 Market Street Suite 3046
Chattanooga, Tennessee 37402-2713



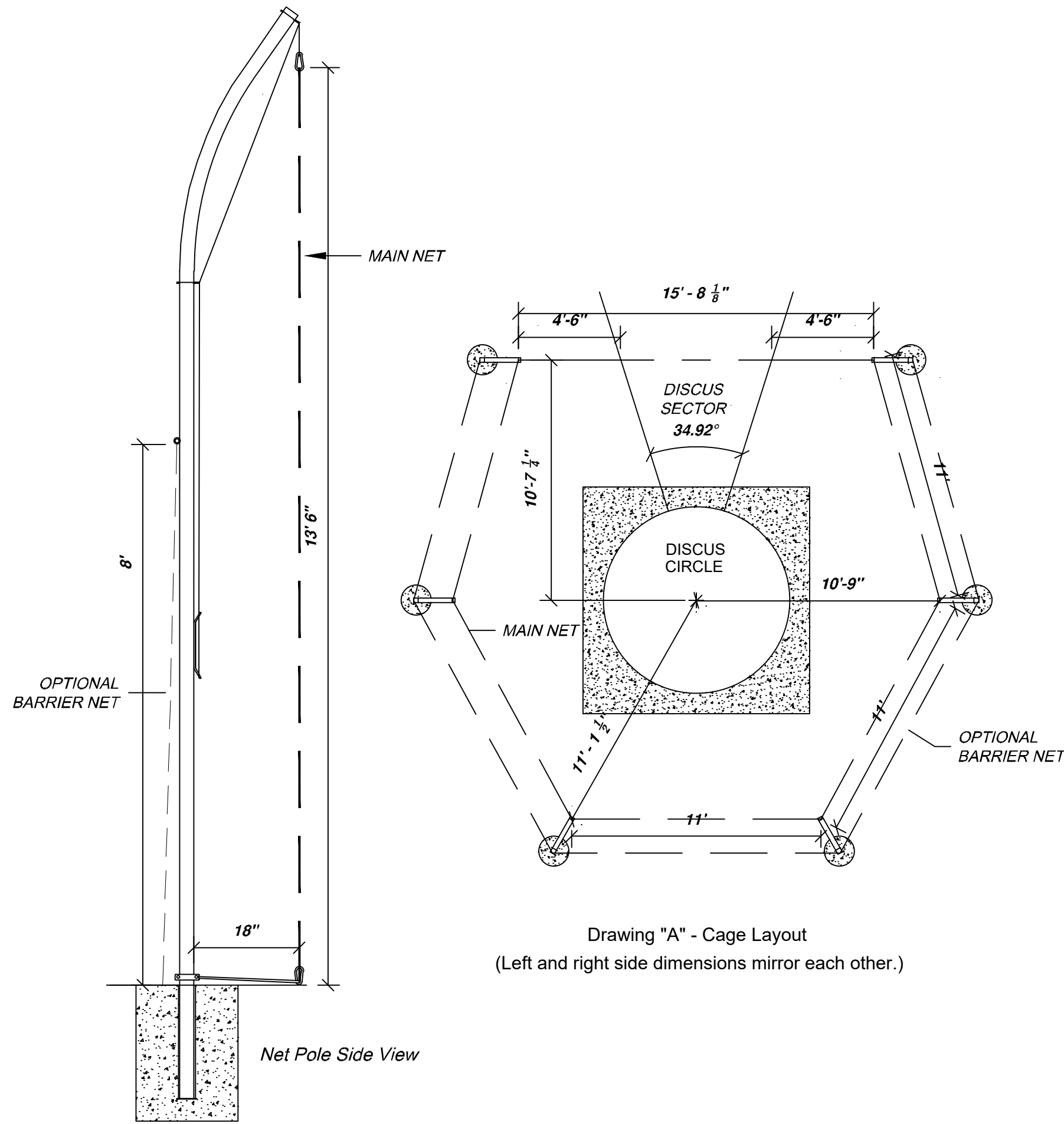
NO.	DATE	DESCRIPTION	BY

East Hamilton High Track Improvements
2015 Ooltewah Ringgold Road
Ooltewah, Tennessee 37363

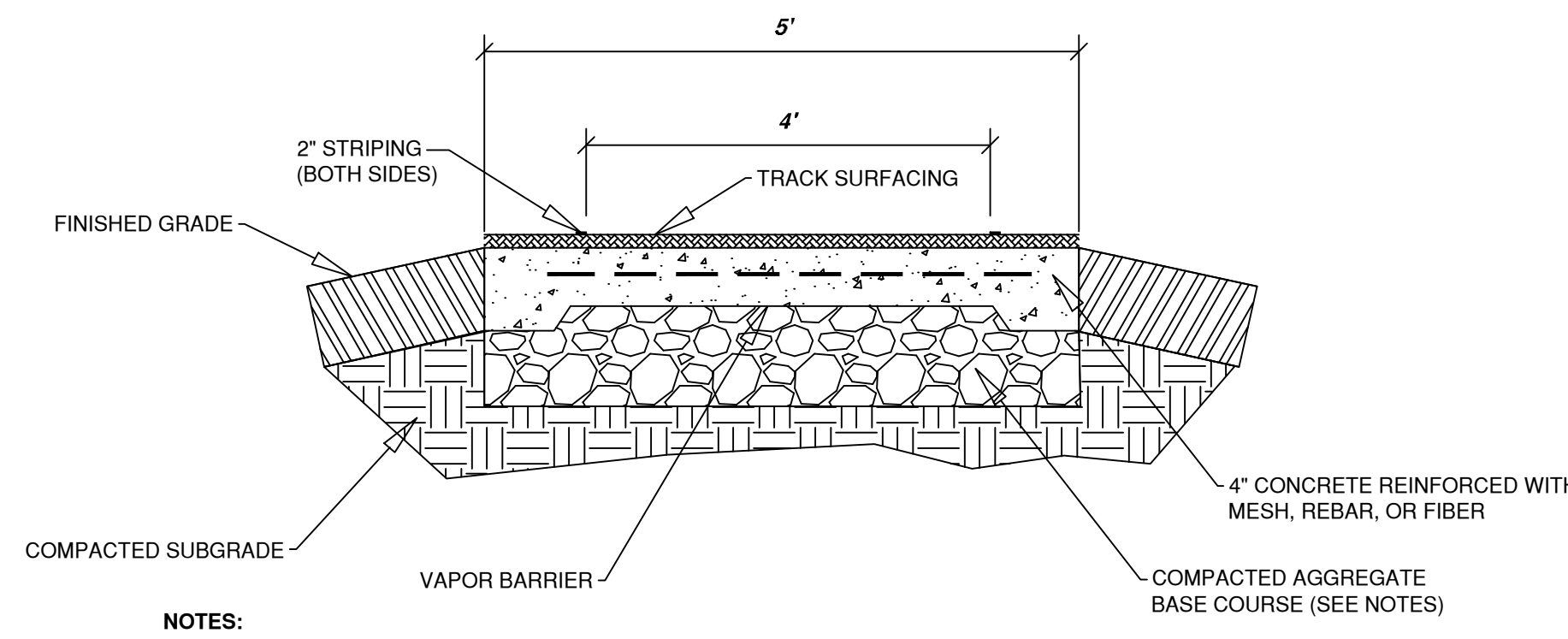
EROSION DETAILS

DESIGN:	AKF
DRAWN:	JET
CHECKED:	NAG
APPROVED:	AKF
SCALE:	NTS
DATE:	03/15/23

SHEET NO. **C-7**
PROJECT NO. 22-07-02.03

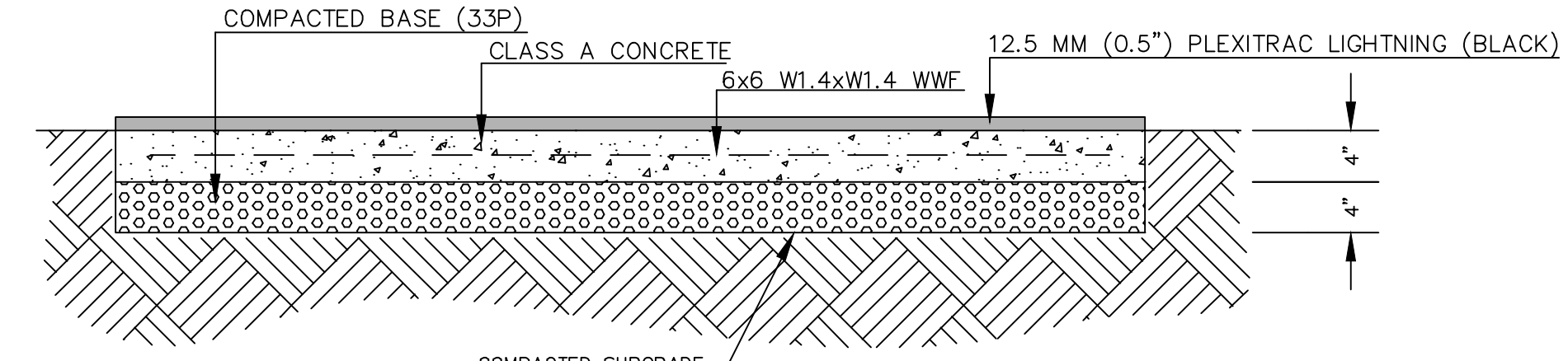
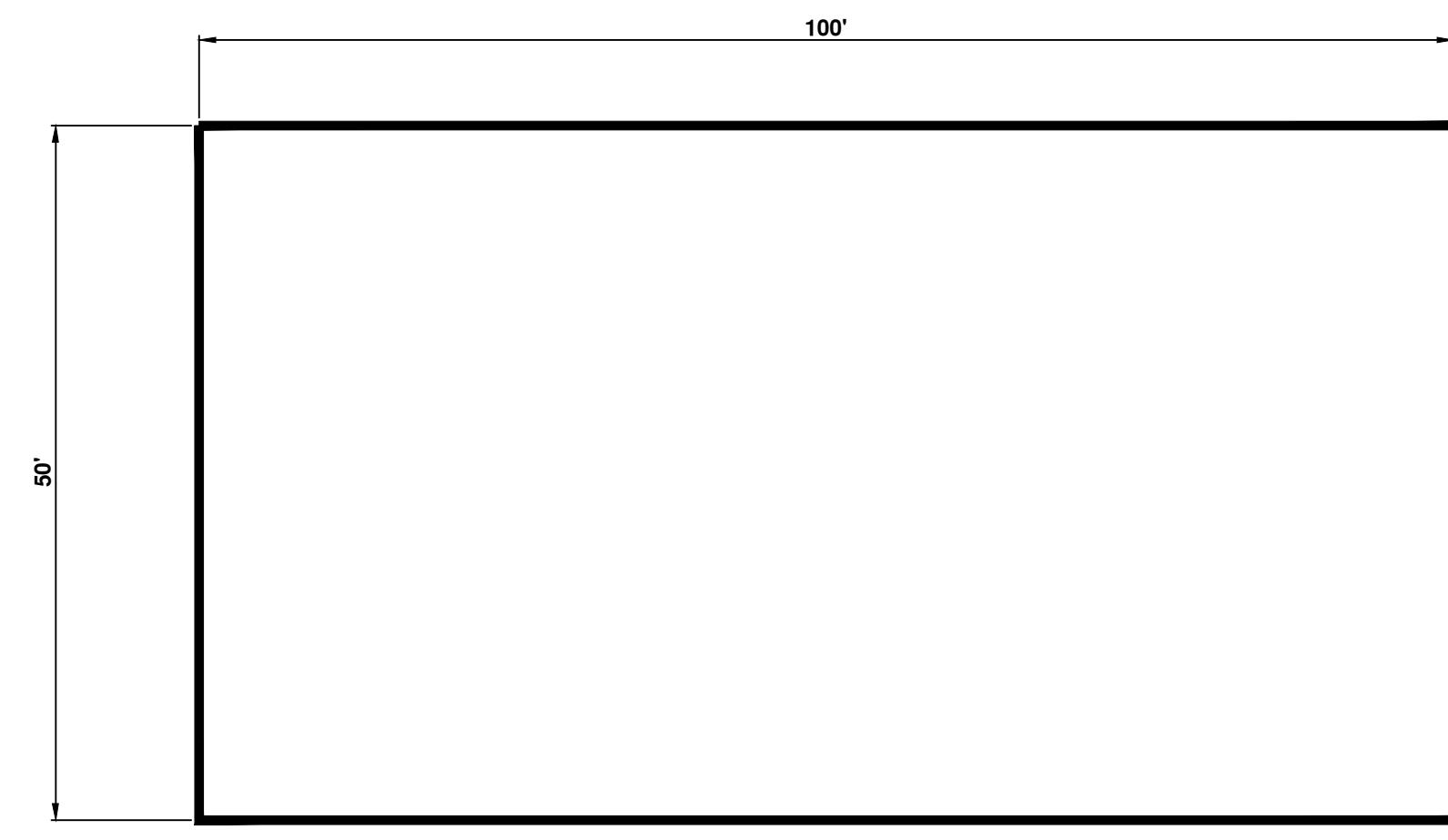


1
C-8 DISCUS/HAMMER TOSS PLAN

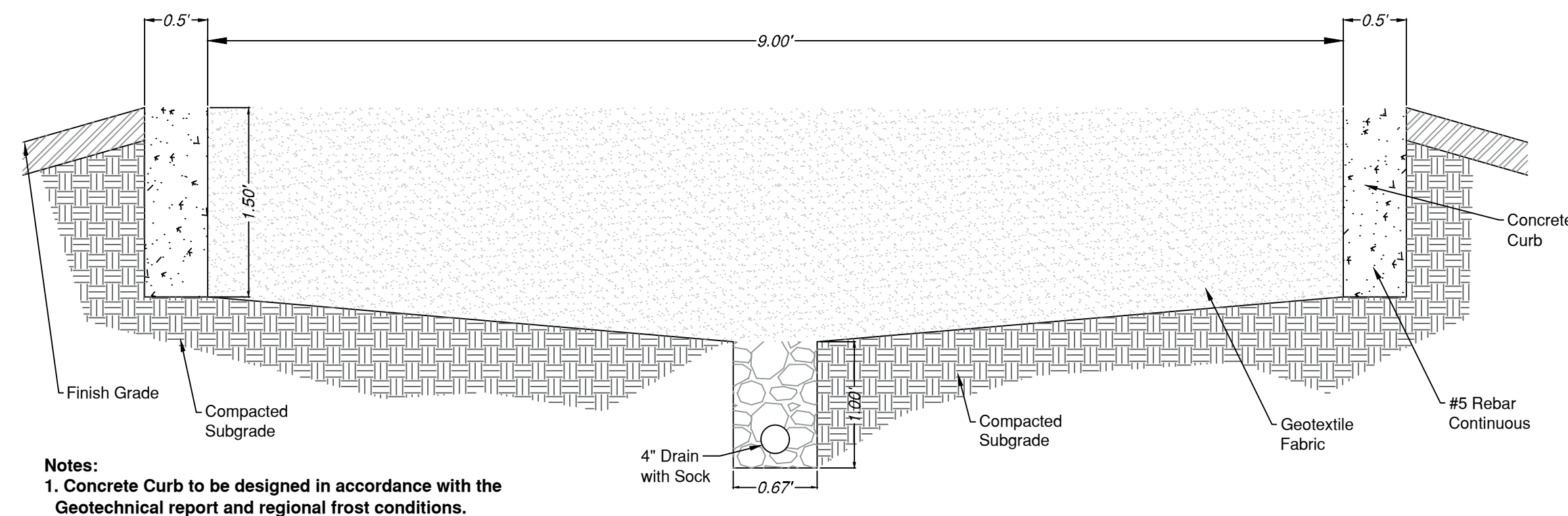


- NOTES:
1. CONCRETE THICKNESS TO BE CONSTRUCTED TO GEOTECHNICAL REPORT RECOMMENDATIONS.
 2. COMPACTED AGGREGATE BASE COURSE MAY BE NECESSARY IN CERTAIN GEOGRAPHICAL LOCATIONS.
 3. IT IS RECOMMENDED TO INSTALL RELIEF JOINTS IN RUNWAY PER ENGINEERS DESIGN.

2
C-8 CONCRETE RUNWAY

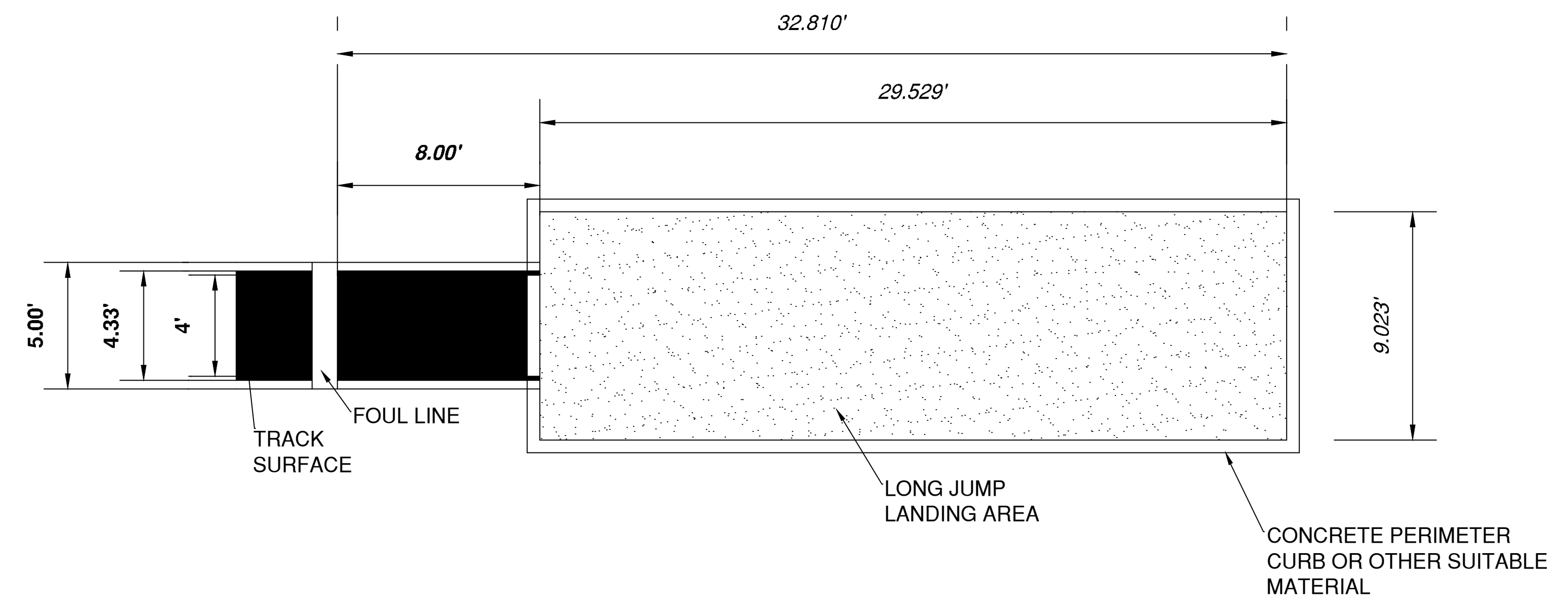


3
C-8 HIGH JUMP

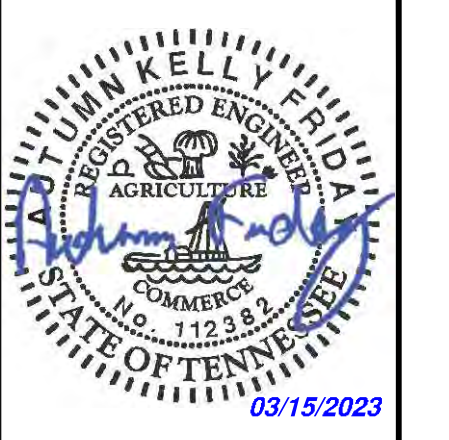


- Notes:
1. Concrete Curb to be designed in accordance with the Geotechnical report and regional frost conditions.
 2. Consult with a certified Track Builder for modified design in heavy rain areas.

4
C-8 LONG JUMP/TRIPLE JUMP PIT SECTION



LONG JUMP/TRIPLE JUMP PIT PLAN



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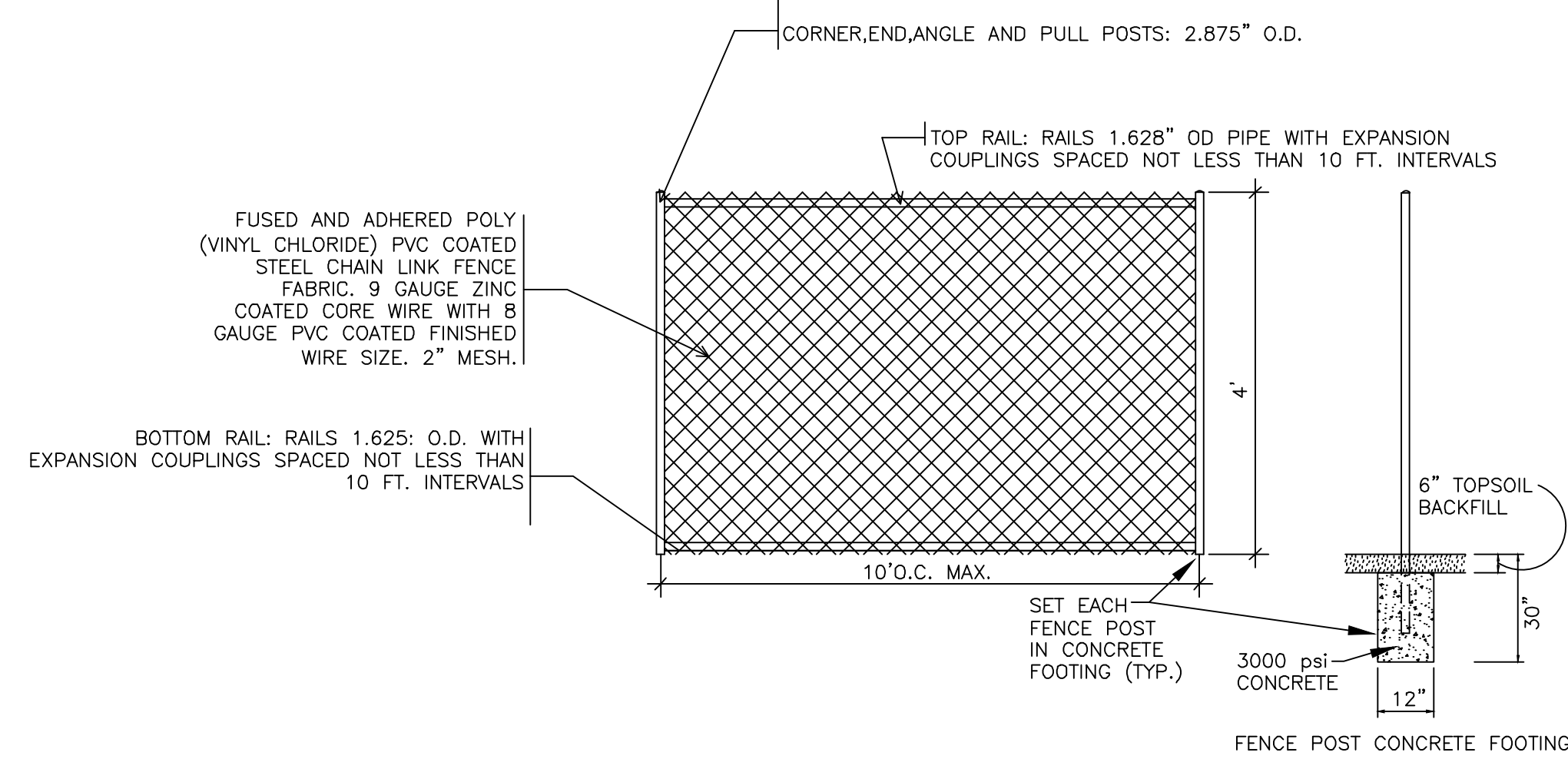


NO.	DATE	DESCRIPTION	BY

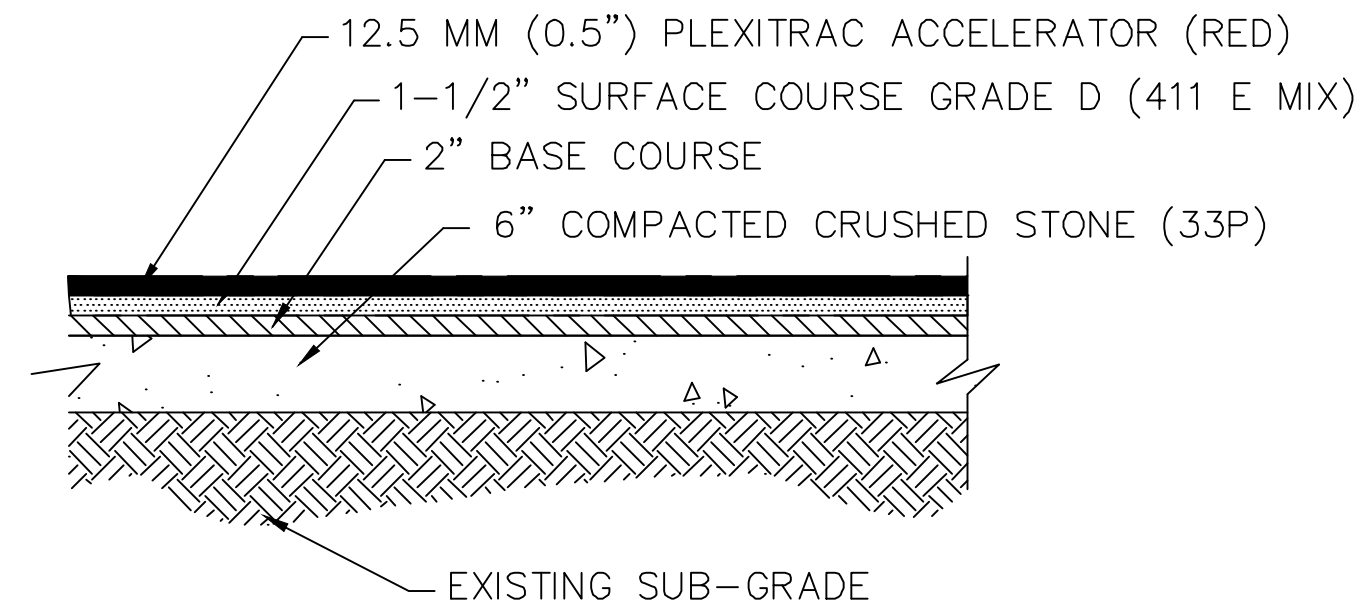
East Hamilton High Track Improvements
2015 Ooltewah Ringgold Road
Ooltewah, Tennessee 37363

DESIGN:	AKF
DRAWN:	JET
CHECKED:	NAG
APPROVED:	AKF
SCALE:	NTS
DATE:	03/15/23
SHEET NO.	C-8

PROJECT NO. 22-07-02.03

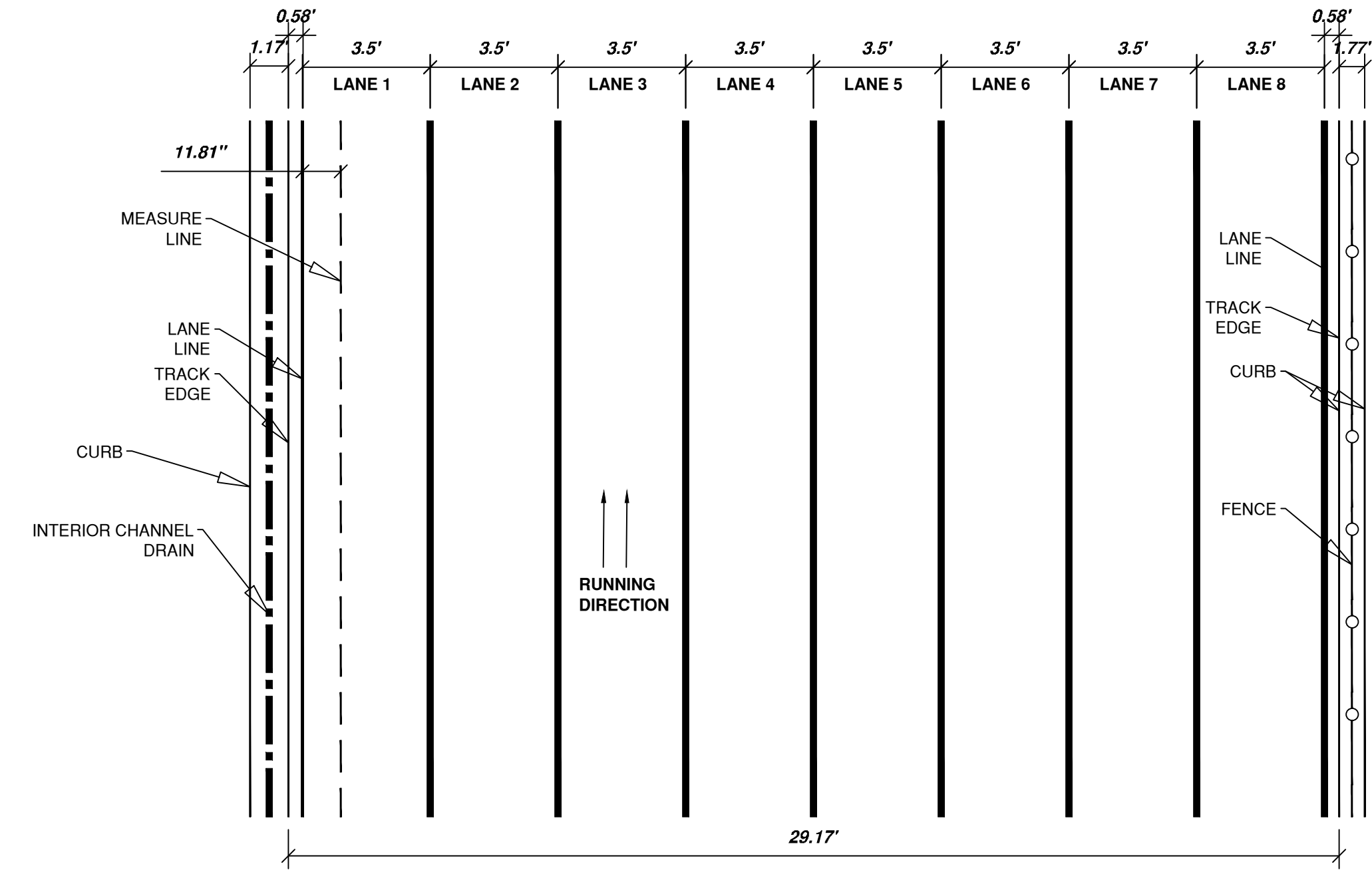


1
C-9 CHAIN LINK FENCE

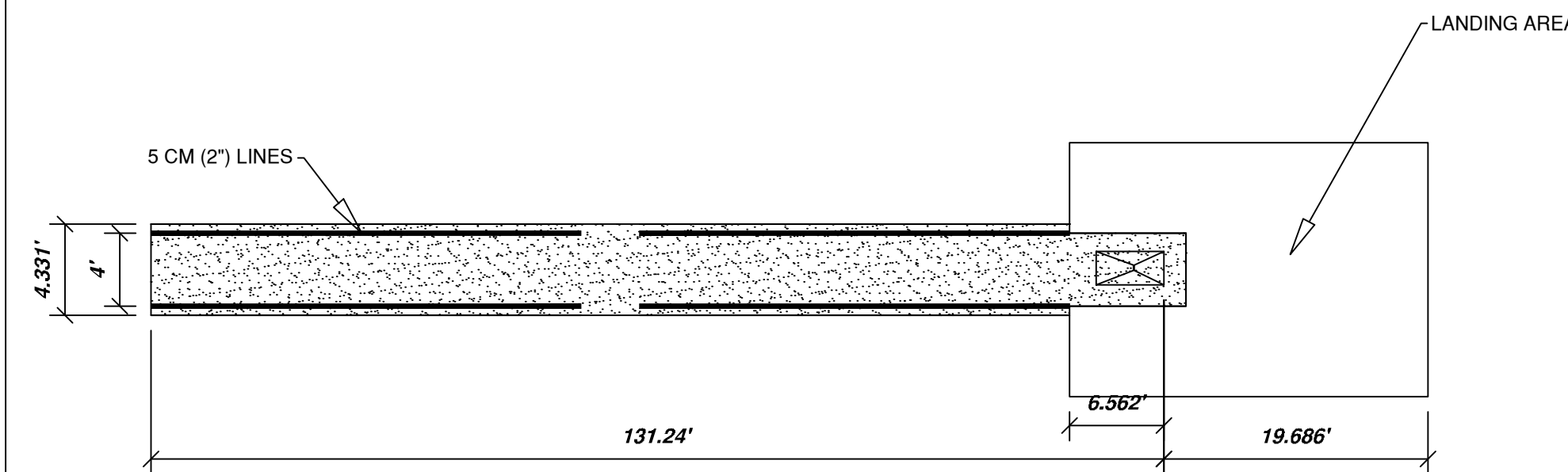


NOTE:
 1. Stone base shall be compressed per American Sports Builders Association
 2. Leveling course shall be 2" of asphalt finished with tolerances not varying more than 1/4" when measured in any 10' direction according to American Sports Builder Association
 3. Asphalt topping shall be 1 1/2" of compacted asphalt with tolerances not varying more than 1/4" when measured in any 10' direction according to the American Sports Builders Association

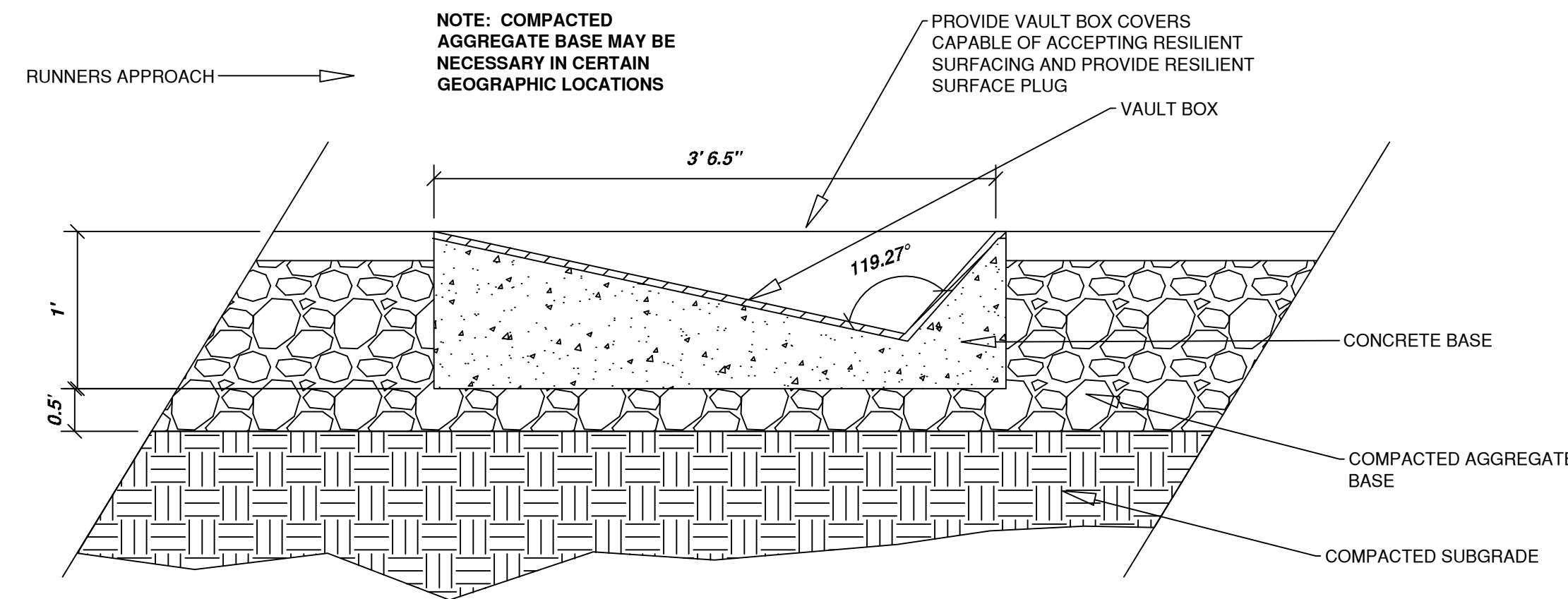
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C-9 TRACK SECTION



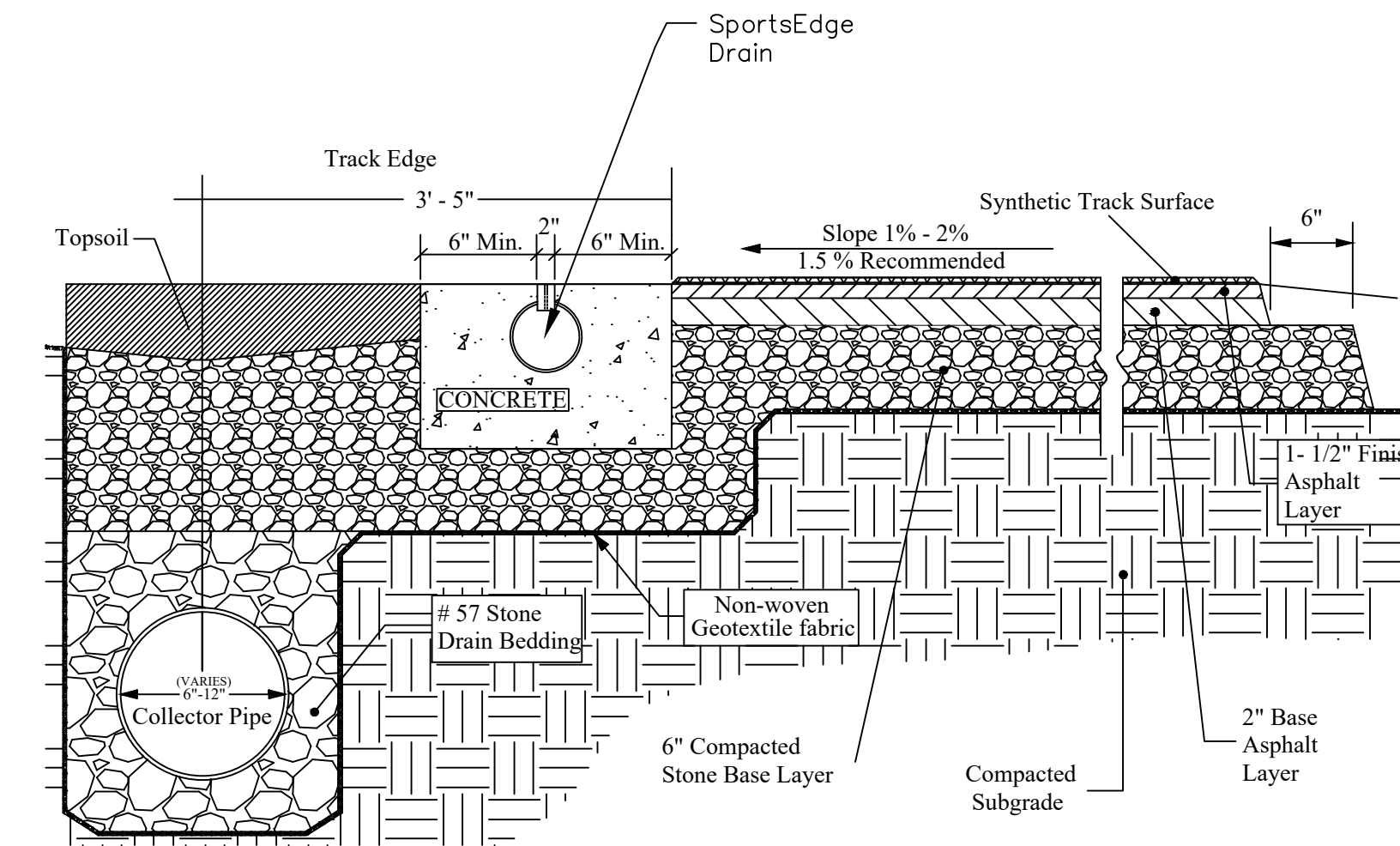
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C-9 LANE LINE/MEASURE LINE TRACK MEASUREMENT



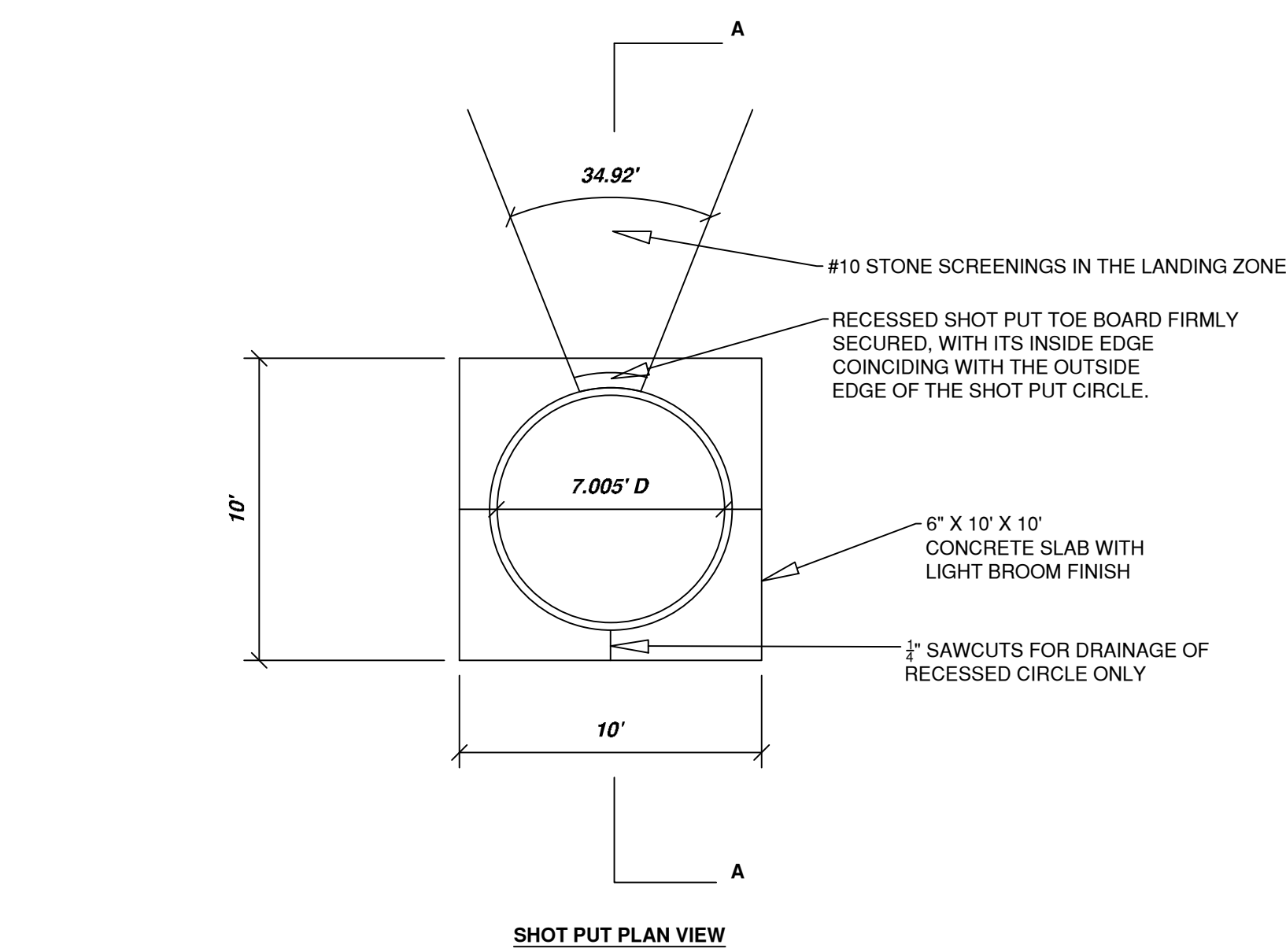
5
9 POLE VAULT EVENT AREA



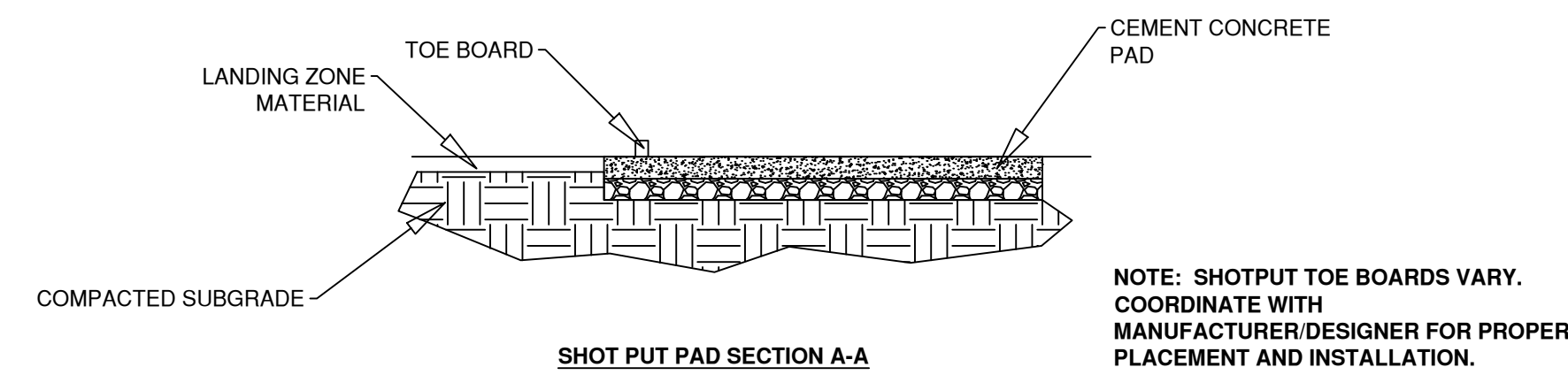
POLE VAULT EVENT SECTION



6
C-9 CHANNEL DRAIN

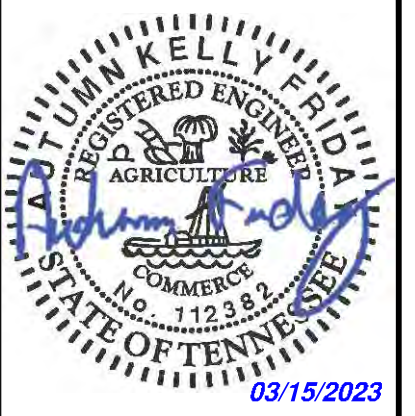


SHOT PUT PLAN VIEW



SHOT PUT PAD SECTION A-A

4
C-9 SHOT PUT PAD



HAMILTON COUNTY PUBLIC WORKS DIVISION
 ENGINEERING DEPARTMENT
 1250 Market Street Suite 3046
 Chattanooga, Tennessee 37402-2713



NO.	DATE	DESCRIPTION	BY

REVISIONS

East Hamilton High Track Improvements
 2015 Ooltewah Ringgold Road
 Ooltewah, Tennessee 37363

DESIGN:	AKF
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SHEET NO.	C-9

DETAILS

APPENDIX C
GEO REPORT