
Request for Proposals for Leachate Storage Tank Liner Project



September 2020

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
ADVERTISEMENT FOR PROPOSALS	iv
ABBREVIATIONS AND REFERENCES	vii
1.0 Request for Proposals (RFP)	1
1.1. Goals	1
1.2. Background	1
1.3. County’s Rights and Conditions	2
2.0 Instructions to Proposers	3
2.1. Defined terms	3
2.2. Copies of Proposal Documents	3
2.3. Date, Location, and Terms of Information Meeting and Pre-Proposal Conference	4
2.4. Site and Other Areas and Existing Site Conditions	4
2.5. Site Visit and Testing by Proposers	5
2.6. Owner’s Safety Program	6
2.7. Other Work at the Site	6
2.8. Proposer’s Representations	6
2.9. Interpretations and Addenda	7
2.10. Proposal Security	8
2.11. Contract Times	8
2.12. Liquidated Damages	8
2.13. Substitute and “Or-Equal” Items	9
2.14. Subcontractors, Suppliers, and Others	9
2.15. Preparation of Proposal	10
2.16. Basis of Proposal	11
2.17. Submittal of Proposal	11
2.18. Modification and Withdrawal of Proposal	11
2.19. Opening of Proposals	12
2.20. Proposals to Remain Subject to Acceptance	12
2.21. Bonds and Insurance	12
2.22. Signing of Agreement	12
2.23. Wage Rates	13
2.24. Sales and Use Taxes	13
2.25. Examination of Contract Documents and Site	13
2.26. Questions and Addenda	14
2.27. Award of Contract	15
2.28. Contract Security	15
2.29. Sales and Use Taxes	16

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
2.30 Notice to Proceed.....	16
2.31 Qualifications of Proposers.....	16
2.32 Evaluation of Proposals	17
3.0 Proposal Requirements.....	18
3.1 RFP Form.....	18
3.2 Required Information	18
4.0 Responsiveness and responsibility for each Proponent	19
4.1 The responsiveness of a Proponent	19
4.2 The responsibility of a Proponent	19
5.0 Contract.....	20
5.1 Scope of Work.....	20
5.2 Performance Specifications	20
5.3 Price Proposal	20
5.4 Contract	20
5.5 Performance Bond	20
5.6 Payment Bond.....	20

Attachments

A. Scope of Work

- Project Management Services
- Design Services
- Permitting Services
- Construction Services

B. Performance Specifications

C. Proposal Checklist

D. Proposal Form

- Attachment B-1 Contractor Disclosure
- Attachment B-2 Certification of Insurance Ability
- Attachment B-3 Certification of Bonding Ability **(Form Attached)**
- Attachment B-4 Evidence of authority for individuals to bind organization to an agreement.
- Attachment B-5 Financial Qualifications - Audited balance sheet for each of the last 3 years
- Attachment B-6 Major Equipment Available **(Form Attached)**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
<ul style="list-style-type: none"> • Attachment B-7 Required safety program submittals • Attachment B- 8 Organization Structure and Management Plan • Attachment B-9 Qualifications of the Firms. Prepare one form each for the Design Firm, Construction Firm, Liner Manufacturer, and Liner Installer. 2 Page limit per firm • Attachment B-9 Experience of the Firms. Prepare one form each for the Design Firm, Construction Firm and Liner installer. (Form Attached) • Attachment B-10 Experience and Qualifications of Key Personnel – Provide a two-page resume of officers and key individuals. • Attachment B-11 Technical Approach - The Proponent shall describe its approach to the Scope of Service • Attachment B-12 Performance on past projects and projects for others - Prepare one form each for the Design Firm, Construction Firm and Liner installer (Form Attached) • Attachment B-13 Schedule Statement of proposed Design/Build Milestones with time schedule. 	
E. Price Proposal Form	
F. Agreement	
G. Performance bond	
H. Payment bond	
I. General Conditions	
J. Supplementary Conditions	
<ul style="list-style-type: none"> • Record Drawings of Leachate Storage Tank • Site Photographs: April 2020 • Permit for Solid Waste Disposal and/or Processing Facility, Form No. 8, Permit No. 100963, Date Issued: April 1, 2020 	

ABBREVIATIONS AND REFERENCES

CCI	Construction Cost Index (ENR)
cfs	Cubic feet per second
EJCDC	Engineers Joint Contract Documents Committee
ENR	Engineering News-Record
EPA	United States Environmental Protection Agency
F	Fahrenheit
gpd	Gallons per day
gpm	Gallons per minute
HDPE	High-density polyethylene
HGL	Hydraulic Grade Line
LF	linear feet
OSR	Owner's Site Representative
PADEP	Pennsylvania Department of Environmental Protection
psig	Pounds per square inch (gauge)
RFP	Request for Proposals
scfm	Standard cubic feet per minute (68 degrees F and 1 atmosphere)

References

This document is a modified version of EJCDC, Copyright © 2016 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in published EJCDC documents remain subject to the copyright.

1.0 REQUEST FOR PROPOSALS (RFP)

The County of Lycoming requests proposals from qualified firms to design, permit and construct a liner system in an existing leachate storage tank at the Lycoming County Landfill near Allenwood, PA.

1.1. Goals

The County's goals for this procurement are:

- Engage a contractor fully responsible for the design, permitting, construction, and certification in order to utilize the existing leachate tank in a manner compliant with the Lycoming County Solid Waste Permit and the conditions established within that permit.
- Incorporate industry-proven and utilized materials for the secure containment of landfill leachate.

1.2. Background

The County operates a lined landfill, in Brady Township near Allenwood, PA. The land on which the facility is located is owned by the United States of America, Federal Bureau of Prisons and is occupied by the County pursuant to a Use Permit which runs through December 31, 2025. The facility is permitted by the Pennsylvania Department of Environmental Protection until April 1, 2030. The landfill has received a mixture of municipal waste, sewage sludge, construction demolition and residual waste since June 1978 and has an estimated 5 additional years of capacity remaining on the existing footprint. A new field is under construction and will add 10 additional years of capacity. During the last 3 years of operation, it has received an average of 900 tons per day. The total acreage of the site is 505 acres of which 98 acres are lined and have received waste.

Construction of the existing leachate storage tank began in January 2012 and continued into January 2014. The Contract Documents required both the concrete walls/floor as secondary containment and the HDPE wall/floor lining to pass separate full depth hydrostatic tests conducted in accordance with American Concrete Institute (ACI) 350.1-01 Tightness Testing of Environmental Concrete Structures at the level of No Meaningful Loss (NML), which is defined by the standard as less than 1/8 inch water level loss in 3 days of observation. In addition, the Contract Documents contained the requirement that the HDPE wall liner and the HDPE floor liner be watertight.

The County and its consultants implemented and managed a field electrical leak location testing program of the leachate storage tank by a subcontracted testing firm to perform field electrical leak location testing. This testing program indicated that leaks still persisted in the tank as of February 20, 2020. The electric leak location testing program was terminated as of February 20, 2020. The tank was subsequently filled, and the detection system performance indicates that leaks persist.

The decision has been made to install a new liner system (with leak detection capability) for all currently lined interior surfaces using a design and build approach. This request for proposal is for a new liner system and not for repair of the existing liner system. The design of the new liner system will consider either the incorporation or abandoning the existing tank leak detection system. While in accordance with Attachment B, Performance Specifications, the new liner must be capable of achieving "ZERO" leakage in all stages of operational use throughout the required lifespan of fifty years, in accordance with DEP's permit condition for the leachate storage tank. This is defined as less than fifteen gallons per day (15 GPD) leakage is the maximum daily discharge rate in all stages of operational use throughout the required lifespan of fifty years.

1.3. County's Rights and Conditions

The County will exercise in its sole discretion all rights and conditions with regard to this RFP. By responding to this RFP, proposers acknowledge and consent to the following conditions relative to this procurement process and the selection of one proposer:

- 1.3.1 This RFP does not obligate the County to contract with any of the proposers.
- 1.3.2 All costs incurred in connection with responding to this RFP will be borne by proposers.
- 1.3.3 The County reserves the right to reject all proposals.
- 1.3.4 All proposals and submissions shall become the property of the County and will not be returned.
- 1.3.5 This procurement shall be subject to all applicable Federal, State and Local laws, regulations, rules and requirements.
- 1.3.6 All rights which County has regarding the operation and continued operation of the landfill facility are limited by and subject to the Use Permit with the United States of America and State and Federal regulatory requirements.
- 1.3.7 All modifications or additions to buildings or buildings constructed pursuant to any agreement shall, at the option of the County, become property of the County upon termination of the agreement.
- 1.3.8 The request may be modified or canceled at the sole discretion of the County.

2.0 INSTRUCTIONS TO PROPOSERS

2.1. Defined terms

- 2.1.1 Design/Builder – A partnership, corporation, or other legal entity that is: certified to engage in contracting through a certified or registered building contractor as the qualifying agent; and, to practice or to offer to practice engineering.
- 2.1.2 Design/Build Contract – A contract with a design/build firm for the design and construction of a public construction project.
- 2.1.3 Evaluation Panel – The County will create an Evaluation Panel (EP) consisting of professional members, its staff, and other agencies, as necessary, to evaluate technical and cost proposals.
- 2.1.4 Owner – The County of Lycoming. The terms “owner” and “County” may be used interchangeably.
- 2.1.5 Owner’s Engineer(s) - Barton & Loguidice, D.P.C., and Civil & Environmental Consultants, Inc.
- 2.1.6 Proposer – The official entity submitting a proposal in response to this RFP (e.g. contractors, consultants, business organizations, firms, or other entities).
- 2.1.7 Proposer/Proponent – Are used interchangeably.
- 2.1.8 Proposal – The Proposer's written response to this RFP offering to provide the specified architecture, engineering, design, permitting, construction and/or services. This includes renderings, drawings, project schedules, reports, and any other documents required for submission by the RFP herein.
- 2.1.9 RPR – Resident Project Representative.
- 2.1.10 Request for Proposals (RFP) – A formal written solicitation for sealed proposals to Design/Build the project stated herein, in which technical presentations, qualifications, experience, and cost are among the main selection criteria.
- 2.1.11 Successful Proposer – The highest, responsible and responsive Proposer who is a qualified provider to whom the County (on the basis of the County's evaluation as hereinafter provided) makes an award.

2.2. Copies of Proposal Documents

- 2.2.1 Complete sets of the Bidding Documents may be obtained from the Issuing Office:

Lycoming County Resource Management Services Department
P.O. Box 187
447 Alexander Drive (U.S. Route 15)
Montgomery, PA 17752
Telephone: (570) 547-2470

- 2.2.2 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.2.3 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.
- 2.2.4 The terms and conditions contained in the General Conditions and Supplementary Conditions shall govern the use of documents released in electronic format.

2.3. Date, Location, and Terms of Information Meeting and Pre-Proposal Conference

- 2.3.1 A **mandatory pre-Proposal conference** will be held at the time and location stated in the advertisement to Proposal. Representatives of Owner and Owner's Engineer(s) will be present to discuss the Project. Owner's Engineer(s) will transmit to all prospective Proposers of record such Addenda as Owner's Engineer considers necessary in response to questions arising at the conference.
- 2.3.2 Oral statements may not be relied upon and will not be binding or legally effective.

2.4. Site and Other Areas and Existing Site Conditions

- 2.4.1 Site and Other Areas. The Site is identified in the RFP Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Design-Builder. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Design-Builder.
- 2.4.2 The Supplementary Conditions identify:
- Those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - Technical Data contained in such reports and drawings.
- 2.4.3 Owner will make copies of reports and drawings referenced above available to any Proposer on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Proposer is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Proposer is responsible for any interpretation or conclusion Proposer draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- 2.4.4 If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- 2.4.5 Owner will make copies of reports and drawings referenced above available to any Proposer on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Proposer is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Proposer is responsible for any interpretation or conclusion Proposer draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
- 2.4.6 Underground Facilities: Information and data shown or indicated in the Proposal Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- 2.4.7 Provisions concerning responsibilities for the adequacy of data furnished to prospective Proposers with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Proposal Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions.

2.5. Site Visit and Testing by Proposers

- 2.5.1 Proposer shall conduct a Site visit, if required, during normal working hours, and shall not disturb any ongoing operations at the Site. Site visit shall be coordinated with Owner prior to arrival.
- 2.5.2 Unless Proposer determines it is unable to prepare a complete and accurate proposal otherwise, Proposer is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- 2.5.3 On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Proposer access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Proposer deems necessary for preparing and submitting a successful Proposal. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- 2.5.4 Proposer shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

2.5.5 Proposer shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

2.6. Owner's Safety Program

2.6.1 Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

2.7. Other Work at the Site

2.7.1 Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these RFP Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Proposer access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

2.8. Proposer's Representations

2.8.1 It is the responsibility of each Proposer before submitting a Proposal to:

2.8.1.1 Examine and carefully study the Proposal Documents, and any data and reference items identified in the Proposal Documents;

2.8.1.2 Visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

2.8.1.3 Become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

2.8.1.4 Carefully study all reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- 2.8.1.5 Consider the information known to Proposer itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Proposal Documents; and the Site-related reports and drawings identified in the Proposal Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Proposer; and (3) Proposer's safety precautions and programs;
- 2.8.1.6 Agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Proposal no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Proposal for performance of the Work at the price Proposal and within the times required, and in accordance with the other terms and conditions of the Proposal Documents;
- 2.8.1.7 Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Proposal Documents;
- 2.8.1.8 Promptly give Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Proposer discovers in the Proposal Documents and confirm that the written resolution thereof by Engineer is acceptable to Proposer;
- 2.8.1.9 Determine that the Proposal Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- 2.8.1.10 Agree that the submission of a Proposal will constitute an incontrovertible representation by Proposer that Proposer has complied with every requirement of this Article, that without exception the Proposal and all prices in the Proposal are premised upon performing and furnishing the Work required by the Proposal Documents.

2.9. Interpretations and Addenda

- 2.8.1 For information concerning the proposed Work, contact John J. Wood, P.E., Barton & Loguidice, D.P.C., 3901 Hartzdale Drive, Suite 101, Camp Hill, PA 17011, jwood@bartonandloguidice.com.
- 2.8.2 Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 2.8.3 Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

- 2.8.4 Addenda will be issued at least five (5) days prior to the date of Proposal opening.
- 2.8.5 Addenda may be issued to clarify, correct, supplement, or change the Proposal Documents.

2.10. Proposal Security

- 2.10.1 Each Proposal must be accompanied by Proposal security made payable to Owner in an amount of 100 percent of Proposer's maximum Proposal price and in the form of a certified or cashier's check or a Surety Bond (on form attached) issued by a surety meeting the requirements of Paragraphs 6.01 of the General Conditions.
- 2.10.2 The Proposal security of Successful Proposer will be retained until such Proposer has executed the Agreement, furnished any required contract security and met the other conditions of the Notice of Award, whereupon the Proposal security will be returned. If the Successful Proposer fails to execute and deliver the Agreement and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Proposal security of that Proposer will be forfeited. The Proposal security of other Proposers that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 61 days after opening of Proposals, whereupon Proposal security furnished by such Proposers will be returned.
- 2.10.3 Proposal security of other Proposers that Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Proposal opening.

2.11. Contract Times

- 2.11.1 Proposer shall set forth in the Proposal the time by which Proposer shall achieve Substantial Completion, subject to the restrictions established in the Agreement in Attachment F. The Owner will take Proposer's time commitment regarding Substantial Completion into consideration during the evaluation of Proposals, and it will be necessary for the apparent Successful Proposer to satisfy Owner that it will be able to achieve Substantial Completion within the time such Proposer has designated in the Proposal. The Successful Proposer's time commitments will be entered into the Agreement (or incorporated in the Agreement by reference to the specific terms of the Proposal).

2.12. Liquidated Damages

- 2.12.1 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

2.13. Substitute and “Or-Equal” Items

- 2.13.1 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Proposal Documents without consideration during the Proposal and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 2.13.2 All prices that Proposer sets forth in its Proposal shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Proposal Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Proposal approvals of “or-equal” or substitution requests are made at Proposer’s sole risk.

2.14. Subcontractors, Suppliers, and Others

- 2.14.1 A Proposer shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Proposal Documents. If a prospective Proposer objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Proposer should refrain from submitting a Proposal.
- 2.14.2 Subsequent to the submittal of the Proposal, Owner may not require the Successful Proposer or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 2.14.3 Any prospective subcontractor, supplier or other party required to be named in the Proposal Form, in the Supplementary Conditions, or in the General Requirements must meet any applicable requirements of the Contract Documents and must be acceptable to the Owner and the Engineer. Detailed experience statements of such parties required to be named in the Proposal Form or required to be identified prior to the Effective Date of the Contract by the Supplementary Conditions or General Requirements shall be submitted with the Proposal (for parties required to be named in the Proposal Form) or within fifteen days after the Notice of Award (for all other parties). The Owner and Engineer will review the qualifications of such parties and the Owner reserves the right to reject any such party, in which case Contractor shall substitute another subcontractor, supplier, or such party at no change in the Contract Price.

2.14.4 If apparent Successful Proposer declines to make any such substitution, Owner may award the Contract to the next highest rated Proposer that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Proposal security of any Proposer. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

2.15. Preparation of Proposal

2.15.1 The Proposal Form is included with the Proposal Documents.

2.15.2 All blanks on the Proposal Form shall be completed in ink and the Proposal Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Proposal Form. A Proposal price shall be indicated for each section, Proposal item, alternate, adjustment unit price item, and unit price item listed therein.

2.15.3 If the Proposal Form expressly indicates that submitting pricing on a specific alternate item is optional, and Proposer elects to not furnish pricing for such optional alternate item, then Proposer may enter the words "No Proposal" or "Not Applicable".

2.15.4 A Proposal by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign and the corporate seal shall be affixed and attested by the corporate secretary or an assistant corporate secretary. The corporate address and state of incorporation shall be shown.

2.15.5 A Proposal by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.

2.15.6 A Proposal by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.

2.15.7 A Proposal by an individual shall show the Proposer's name and address for receiving notices.

2.15.8 A Proposal by a joint venture shall be executed by an authorized representative of each joint venture entity in the manner indicated on the Proposal Form. The joint venture's address for receiving notices shall be shown.

2.15.9 All names shall be printed in ink below the signatures.

2.15.10 The Proposal shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Proposal Form.

- 2.15.11 Postal and e-mail addresses and telephone number for communications regarding the Proposal shall be shown.
- 2.15.12 The Proposal shall contain evidence of Proposer's authority and qualification to do business in the state where the Project is located, or Proposer shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Proposal. Proposer's state contractor license number, if any, shall also be shown on the Proposal Form.

2.16 Basis of Proposal

2.16.1 Lump Sum

Proposers shall submit a Proposal on a lump sum basis as set forth in the Proposal Form.

2.17 Submittal of Proposal

- 2.17.1 Proposals, including all their component parts, shall be submitted no later than the following time, and at the following place: Controller of the County of Lycoming, at Suite 204, Executive Plaza, 330 Pine Street, Williamsport, PA 17701, until **5:00 PM local time on the 30th of October 2020**. The Proposals received will be publicly opened and read at the following regular meeting of the Lycoming County Commissioners at 10:00 AM local time.
- 2.17.2 A Proposal shall be enclosed in a plainly marked package stating the Project title, and the name and address of Proposer. The Price Proposal shall be included in the package, and shall itself be enclosed in a separate sealed envelope marked "Price Proposal." The Proposal be accompanied by the Proposal security and other required documents. If a Proposal is sent by mail or other delivery system, the sealed envelope containing the Proposal shall be enclosed in a separate mailing or delivery package plainly marked on the outside with the notation "PROPOSAL ENCLOSED." A mailed Proposal shall be addressed to Controller of the County of Lycoming, Suite 204, Executive Plaza, 330 Pine Street, Williamsport, PA 17701.
- 2.17.3 Proposals received after the date and time prescribed for the opening of Proposals, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Proposer unopened.

2.18 Modification and Withdrawal of Proposal

- 2.18.1 A Proposal may be withdrawn by an appropriate document duly executed in the same manner that a Proposal must be executed and delivered to the place where Proposals are to be submitted prior to the date and time for the opening of Proposals. Upon receipt of such notice, the unopened Proposal will be returned to the Proposer.

- 2.18.2 If a Proposer wishes to modify its Proposal prior to Proposal opening, Proposer must withdraw its initial Proposal in the manner specified in Paragraph 16.01 and submit a new Proposal prior to the date and time for the opening of Proposals.
- 2.18.3 If within 24 hours after Proposals are opened any Proposer files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Proposal, that Proposer may withdraw its Proposal, and the Proposal security will be returned. Thereafter, if the Work is rebid, that Proposer will be disqualified from further Proposing on the Work.

2.19 Opening of Proposals

- 2.19.1 Proposals will be opened publicly at the time and place where Proposals are to be submitted. An abstract of the amounts of the base Proposals will be made available to Proposers after the opening of Proposals.
- 2.19.2 Final rankings and other established selection criteria will be made available to all Proposers.

2.20 Proposals to Remain Subject to Acceptance

- 2.20.1 All Proposals will remain subject to acceptance for the period of time stated in the Proposal Form, but Owner may, in its sole discretion, release any Proposal and return the Proposal security prior to the end of this period.

2.21 Bonds and Insurance

- 2.21.1 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Design-Builder's requirements as to performance and payment bonds and insurance. When the Successful Proposer delivers the executed Agreement to Owner, it must be accompanied by the required Bonds.

2.22 Signing of Agreement

- 2.22.1 When Owner issues a Notice of Award to the Successful Proposer, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Proposer shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Proposer, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

2.23 Wage Rates

- 2.23.1 The Work under these Proposal Documents is to be paid for by public funds; therefore, minimum prevailing wage rates published by the Pennsylvania State Department of Labor and Industry shall be paid on this project.

2.24 Sales and Use Taxes

- 2.24.1 Owner is exempt from Pennsylvania State sales and use taxes on certain materials and equipment to be incorporated in the Work, sold directly to the Owner. See 61 PA Code, Chapters 31 through 60 and Pennsylvania Department of Revenue Publication 627. Said taxes shall not be included in the Proposal. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

2.25 Examination of Contract Documents and Site.

- 2.25.1 Proposers must satisfy themselves by personal examination of the location of the proposed Work and by thorough examination of the Design Criteria and other related information identified in the Proposal Documents, all requirements of the Work to be performed; and shall not at any time after the submission of a proposal dispute or complain of such estimate or the nature or the amount of Work to be completed. Proposers shall be familiar with, and all work shall comply with, all federal, state and local laws, ordinances, codes, rules and regulations that in any, way affect the cost, progress or performance of the Work. Failure on the part of Proposers to thoroughly familiarize themselves with applicable laws, ordinances, codes, rules and regulations will in no way relieve them from the responsibility included in the applicable laws, ordinances, codes, rules and regulations.
- 2.25.2 Proposers shall be responsible for having investigated to their satisfaction, prior to the submission of proposals, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater and subsurface conditions, the character of equipment and facilities needed preliminary to and during the execution of the Work, the general and local site conditions, any ongoing activities in the project area, and all other matters that can in any way affect the cost, progress; performance; or furnishing of any part of the Work. The price established for the Work will reflect all costs pertaining thereto.
- 2.25.3 By submission of a proposal, the Proposer affirms that:
- 2.25.3.1 It has read and understands the RFP Documents, inclusive of the Design/Build Contract and all design criteria, and the Proposals submitted are made in accordance therewith;

- 2.25.3.2 It has visited the site and familiarized themselves with the local conditions under which the work is to be performed;
- 2.25.3.3 At its own expense performed all examinations, investigations, explorations, tests, or studies and obtained all additional information and data which pertain to the physical conditions (e.g., surface, subsurface and underground utilities) at or contiguous to the site or otherwise, that may affect the cost, progress or performance of the Work and that the Proposer deems necessary to determine its cost to perform the Work in accordance with the terms and conditions of the Contract Documents; and,
- 2.25.3.4 That Proposer has satisfied itself with respect to such conditions and shall make no claims against the County if on carrying out the Work it finds that the actual conditions do not conform to those indicated.

2.26 Questions and Addenda.

- 2.26.1 For information concerning the proposed Work, contact John J. Wood, P.E., Barton & Loguidice, D.P.C., 3901 Hartzdale Drive, Suite 101, Camp Hill, PA 17011, jwood@bartonandloguidice.com.
- 2.26.2 Interpretations or clarifications considered necessary by the County in response to such questions will be issued by Addenda mailed and delivered to all parties recorded by the Lycoming County Resource Management Services as having received the Proposal documents. Questions received less than seven days prior to the date for opening of Proposals may not be answered. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will not be considered and will be without legal effect.
- 2.26.3 Proposers shall carefully examine the Request for Proposal documents. Any ambiguities or inconsistencies shall be brought to the attention of the County in writing prior to the submittal deadline. Failure to do so on the part of the Proposer will constitute an acceptance by the Proposer of any subsequent decision.
- 2.26.4 Any written questions, however, shall not involve the quality or use of products or methods; the County will neither approve nor disapprove particular proposed substitute products prior to the receipt of Technical Proposals. Such products may only be considered when offered by the Proposer for incorporation into the Work after award of the Contract.
- 2.26.5 When solicitation revisions are deemed advisable or become necessary, including changes to the deadline for proposal submission, they shall be answered only in the form of written addenda. All addenda so issued shall become a part of the Contract Documents.

- 2.26.6 All addenda issued must be acknowledged. Prospective Proposers are advised to contact the County prior to the solicitation deadline to ascertain the existence and number of any addenda issued. Failure of any Proposer to receive or to acknowledge receipt of any addenda shall not relieve such Proposer from any terms, conditions and obligations under its proposal as submitted.

2.27 Award of Contract.

- 2.27.1 The County reserves the right to reject any and all Proposals including, without limitation, the right to reject any or all non-conforming, non-responsive, unbalanced or conditional Proposals and to reject the Proposal of any Proposer if the County believes that it would not be in the best interest of the County to make an award to that Proposer, whether because the Proposal is not responsive or the Proposer is unqualified or of a doubtful financial ability or fails to meet any other pertinent standard or criteria established by the County. The County also reserves the right to waive any and all informalities not involving price, time or changes in the work and to negotiate contract terms with the successful Proposer. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 2.27.2 In evaluating Proposals, County will consider the qualifications of the Proposers, whether or not the Proposals comply with the prescribed requirements, and such alternates, unit prices and other data as may be requested in the Proposal form or prior to the notice of award.
- 2.27.3 County may consider the qualifications and experience of subcontractors, suppliers, and other persons and organizations proposed for the portions of the work as to which the identity of subcontractors, suppliers and other persons and organizations must be submitted as provided in the Proposal documents. County may also consider the operating costs, maintenance requirements, performance guaranties of major items of material and equipment proposed for incorporation in the work when such data is required to be submitted prior to the notice of award.
- 2.27.4 County may conduct such investigations as County deems necessary to assist in the evaluation of any proposal and to establish the responsibility, qualifications, and financial ability of Proposers, proposed subcontractors, suppliers and other persons and organizations to perform and furnish the work in accordance with the contract documents to owner's satisfaction within the prescribed time period.
- 2.27.5 If a contract is to be awarded, it will be awarded to the Proposer whose evaluation by owner indicates to the owner that the award will be in the best interest of the County.
- 2.27.6 If a contract is to be awarded, the County will give the successful Proposer a Notice of Award within 60 days after the date of the Proposal opening.

2.28 Contract Security.

- 2.28.1 A successful Proposer must deliver a performance bond guaranteeing the performance of all or parts of the contract and such other security, if any, which is set forth in the Proposal documents.

2.29 Sales and Use Taxes.

- 2.29.1 Any and all taxes now or hereafter imposed on the work to be performed and/or materials to be furnished or upon the contract itself or any matter and in connection therewith shall be paid by the successful Proposer, it being the intention of the parties thereto that in no event shall such taxes be borne by the County.
- 2.29.2 The Commonwealth of Pennsylvania, Department of Revenue Regulation 207 identifies those items which may be exempted from Pennsylvania Sales and Use Tax when purchased by the Proposer. This provision is for informational purposes only and any determination or assessment of liability for sales and use taxes is solely the responsibility of the contractor.

2.30 Notice to Proceed.

- 2.30.1 No work shall begin on the site until execution of the contract documents and issuance of the Notice to Proceed by the County.

2.31 Qualifications of Proposers

- 2.31.1 To demonstrate Proposer's qualifications to perform the Work, Proposer shall submit written evidence establishing its qualifications such as financial data, qualifications, previous experience, and present commitments, etc. This information is defined in the Attachment D Proposal Form.
- 2.31.2 A Proposer's failure to submit required qualification information may disqualify Proposer from receiving an award of the Contract.
- 2.31.3 No requirement in this Article to submit information will prejudice the right of Owner to seek additional pertinent information regarding Proposer's qualifications.
- 2.31.4 The County will consider the Proposer's record in performance of any contracts for the work which it may have entered into with the County, or with any other public bodies or corporations. The County expressly reserves the right to reject the Proposal of any Proposer if the record discloses that Proposer, in the opinion of the County, has not properly performed such contracts or has habitually and without just cause neglected the payment of bills or labor, materials or services, or has otherwise disregarded its obligations to subcontractors, material, or employees.

2.31.5 The County may make such investigations as it deems necessary to determine the ability of the Proposer to perform the work, and the Proposer shall furnish to the owner all such information and data for this purpose in a timely manner as the owner may request. The owner reserves the right to reject any Proposal if the evidence submitted by, or investigation of, such Proposer fails to satisfy the owner that such Proposer is properly qualified by experience and financial status to carry out the obligations of the contract, and to complete the work contemplated therein.

2.32 Evaluation of Proposals

- 2.32.1 Owner reserves the right to reject any or all Proposals, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Proposals. Owner will reject the Proposal of any Proposer that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Proposer purports to add terms or conditions to its Proposal, takes exception to any provision of the Proposal Documents, or attempts to alter the contents of the Contract Documents for purposes of, then the Owner will reject the Proposal as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 2.32.2 In evaluating Proposals, Owner will consider whether or not the Proposals comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Proposal Form or prior to the Notice of Award.
- 2.32.3 All Proposals will be evaluated in accordance with the criteria specified on the Evaluation Form and considering the information required to be submitted in each Proposal. An Evaluation Committee will review the Proposals in accordance with this RFP.

EVALUATION FORM

Weight	Evaluation Item	Score
10	Organization Structure and Management Plan	
25	Experience and Qualifications of the Firm and Key Personnel	
15	Technical Approach	
10	Performance on projects for others	
10	Schedule	
20	Cost Proposal	
5	Financial Qualifications	
5	Safety	
100%	Total Score	

3.0 PROPOSAL REQUIREMENTS

The proposals must include:

3.1 RFP Form.

- 3.1.1 Proposals by corporations must be manually executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or assistant secretary. The corporate address and state of incorporation must be shown below the signature.
- 3.1.2 Proposals by partnership must be manually executed in the partnership name and signed by a partner, his title must appear under the signature and the official address of the partnership must be shown below the signature.
- 3.1.3 All names must be typed or printed in ink below the signature.
- 3.1.4 All Proposals shall contain an acknowledgement of receipt of all addenda.
- 3.1.5 The address, telephone number and email address for communications regarding the Proposal must be shown.
- 3.1.6 Evidence of authority to conduct business as an out-of-state corporation in the state where the work is to be performed shall be provided by all out-of-state corporations.
- 3.1.7 Proposer shall quote prices in both forms and figures.

3.2 Required Information

- 3.2.1 Proposal Checklist
- 3.2.2 Proposal Form
- 3.2.3 Price Proposal Form
- 3.2.4 Agreement
- 3.2.5 Performance bond
- 3.2.6 Payment bond

4.0 RESPONSIVENESS AND RESPONSIBILITY FOR EACH PROPONENT

4.1 The responsiveness of a Proponent

- 4.1.1 Timely and effective delivery of all services, materials, documents, and/or other information required by the County;
- 4.1.2 Completeness of all material, documents and/or information required by the County; and
- 4.1.3 Notification of the County of methods, services, supplies and/or equipment that could reduce cost or increase quality.

4.2 The responsibility of a Proponent

- 4.2.1 Ability, capacity and skill of the Proponent to perform the Agreement or provide the Work required;
- 4.2.2 Capability of the Proponent to perform the Agreement or provide the Work promptly, or within the time specified without delay or interference;
- 4.2.3 Character, integrity, reputation, judgment, experience and efficiency of the Proponent;
- 4.2.4 Quality of performance of previous contracts or work;
- 4.2.5 Previous existing compliance by the Proponent with laws and ordinances relating to the Agreement or Work;
- 4.2.6 Sufficiency of the financial resources and ability of the Proponent to perform Agreement for providing the Work;
- 4.2.7 Quality, availability, and adaptability of the supplies or contractual Work to the particular use required; and
- 4.2.8 The successful Proponent shall assume full responsibility for the conduct of his agents and/or employees during the time such agents or employees are on the premises for the purpose of performing the Work herein specified.

5.0 CONTRACT

5.1 Scope of Work

Attachment A provides the scope of work to the contract.

5.2 Performance Specifications

Attachment B provides the specifications to the contract.

5.3 Price Proposal

Attachment E provides the price proposal form.

5.4 Contract

Attachment F provides the contract.

5.5 Performance Bond

Attachment G provides the performance bond forms to be completed by the Proposer.

5.6 Payment Bond

Attachment H provides the payment bond forms to be completed by the Proposer.

5.7 General Conditions of the Contract (EJCDC)

Attachment I provides the standard general conditions of the contract.

5.8 Supplementary Conditions of the Contract

Attachment J provides the supplementary conditions to the contract.

ATTACHMENTS

- A. Scope of Work
- B. Performance Specifications
- C. Proposal Checklist
- D. Proposal Form
- E. Price Proposal Form
- F. Agreement
- G. Performance Bond
- H. Payment Bond
- I. General Conditions
- J. Supplementary Conditions

ATTACHMENT A

ATTACHMENT A SCOPE OF WORK

1.0 PROJECT MANAGEMENT SERVICES

The Design/Builder will prepare a Project Management Plan (PMP), which will define the project team, project schedule, list of major deliverables, and lines of communication. A draft copy of the PMP will be submitted to the County's Project Manager for review and comment not more than 15 days after Notice to Proceed.

The Design/Builder will participate in a kick-off meeting with the County not more than 25 days after Notice to Proceed (NtP) to review the draft PMP and confirm project objectives. Following the meeting, the PMP will be revised, as appropriate based on County comments, and copies of PMP will be distributed to the County's Project Manager and project team members.

A project schedule will be developed as part of the PMP using Microsoft Project or Primavera. Subtasks, duration for each subtask, milestones, and the inter-relationship of subtasks will be identified in the schedule. Overall project progress will be monitored against this schedule. Progress will be reviewed and recovery action will be recommended by the Design/Builder at monthly status review meetings. The Design/Builder will prepare monthly updates to the schedule.

The Design/Builder and County will conduct monthly status review meetings to discuss project status and matters concerning project accomplishments and scheduling. The Design/Builder will prepare and submit to the County's Project Manager an agenda prior to each meeting and meeting minutes following each meeting. The meeting minutes will document activities and decisions occurring during the meeting, describe current project activities, identify activities planned during the next month, indicate issues requiring the County's attention, and report the status of the project budget and schedule.

Design/Builder will prepare draft minutes and final minutes for all meetings including, but not limited to, kick-off meeting, monthly status review meetings, pre-construction conference and construction progress meetings. Draft minutes will be distributed to meeting attendees and other as deemed appropriate for review and comment. Final wording of the minutes will be discussed and approved at the next scheduled meeting or other time agreed upon by the attendees. Design/Builder shall make the revision agreed upon and distribute final minutes to the attendees.

The Design/Builder will monitor costs versus the approved project cost to complete. Beginning with initial contract award, the cumulative amount of committed funds will be carefully monitored by Design/Builder. Data will be continuously compared to the approved budget and updated by means of a contract cost report, summarizing the current financial status of the project and issued monthly to the County.

2.0 DESIGN SERVICES

The Design/Builder will conduct a project initiation conference with the County, and the Design/Builder's design engineer to discuss and confirm the project approach.

Design/Builder will provide engineering services to the County to finalize current design concepts, materials and equipment specifications, and facility layout. The Design/Builder will prepare Drawings and Specifications for the construction of the liner within the leachate tank.

Design concepts and conditions will need County acceptance prior to incorporation into the final Construction Documents. Plan, cross section, and detail drawings and technical specifications will be prepared for the project. The Drawings and Specifications will address architectural, structural, civil, geotechnical, mechanical, electrical, and instrumentation and control requirements for construction.

Should it be deemed necessary or appropriate, the Design/Builder will support the County and its consultants for meetings with PADEP at the North Central Regional Office in Williamsport, Pennsylvania. The intent of the support would be to provide details regarding the proposed liner system and construction methodologies as may be required to adequately address PADEP questions or concerns.

The Design/Builder will prepare and submit copies of the draft drawings and technical specifications, Acceptance Testing Program, and Operations/Maintenance Plan for County review and comment at the 60% and 90% completion levels. Design/Builder will attend meetings with the County to receive comments on the draft documents. Following receipt of comments, the Design/Builder will revise the drawing and specification as appropriate.

Design/Builder will provide a value engineering/constructability review during the 60% design phase of the project utilizing both engineers and construction personnel. The purpose of this review is to evaluate existing drawings and preliminary construction specifications, to determine whether proposed project details will create construction problems in the field and to determine whether the owner's functional objectives can be met more cost effectively through a different design or construction approach. A value engineering/constructability review, investigating the details of the various infrastructure/building systems can help prevent major delays and expenses due to poor construction sequencing, purchasing procedures, or design problems. A formal report will be prepared and submitted to the County. Cost savings derived through the value engineering/constructability review process shall be shared equally between the Design/Builder and the County. Any change in Contract Price shall be incorporated into the Agreement by a Change Order or written Amendment in accordance with General Conditions, Article 10.

The Design/Builder will prepare an Operating/Maintenance Plan during the 60% design phase of the project to describe the operation of the leachate tank. This document will be used for both permitting purposes as well as of sufficient detail to describe operational and maintenance items associated with the leachate tank liner. At the beginning of plan development, the Design/Builder will meet with the County to discuss the potential operation and maintenance methods and receive input.

The Design/Builder will develop a Facility Acceptance Testing Plan during the 60% design phase of the project that addresses both functional and performance testing. Functional testing will be performed (following manufacturers certification) on individual components of construction to demonstrate all operational features and controls meet the requirements specified, usually for a short period of time. Performance testing will be performed on the entire system to document the facility meets the overall performance requirements. This test protocol will identify measurement and testing methodologies, record keeping and safety programs.

The Design/Builder shall prepare and submit a CQC (Construction Quality Control) Plan. QC and Quality Control refers to measures taken by the Supplier or Contractor to verify that the material has been prepared and the work has been performed in compliance with the requirements for materials and workmanship as stated in the contract documents, permit, specifications and/or design requirements. The QC Plan shall describe the following at a minimum:

- Material(s) manufacturer quality control procedures, frequency and protocol;
- Project management structure, experience, and training of the testing personnel;
- Sampling and testing procedures to be used in the field and in the laboratory;
- Testing frequency;
- Sampling parameters and sample locations;
- Material specifications;
- Procedures to be followed if a test fails;
- Contingency plan for anticipated construction difficulties.

The County's review and acceptance of drawing and specification and related interim design submissions is for the purpose of mutually establishing Construction Documents compatible with the requirements of the Project. Neither County's review nor acceptance of any drawing and specification and related interim design submissions related to the Construction Documents shall be deemed to transfer any design liability from Design/ Builder to the County.

3.0 PERMITTING SERVICES

Under this Task, the Design/Builder will identify, prepare, and obtain all federal, state, and local permit applications or permit modifications required for the construction of the liner within the leachate tank. Activities including contacting regulatory authorities, preparing permit applications, preparing written responses to review comments from regulatory authorities, and attendance at meetings to resolve outstanding issues. This may include, but is not limited to the following permits:

- Minor permit modification from PA DEP
- Local building permit

After completion of the draft plans and details of the proposed tank lining, the County along with the Design/Builder, and the County's Consultants, will conduct a Preapplication Meeting with PADEP in the Northcentral Region Office in Williamsport, Pennsylvania to present the draft plan information and

discuss the proposed general concept for remediation of the leachate tank. The Design/Builder will incorporate PADEP comments and finalize the draft plan.

The Design/Builder shall prepare and provide the County with signed and sealed copies of all permit applications or permit modifications and attachments that are submitted to regulatory agencies for the Project. Design/Builder will pay all permit application fees. The County will review all permit applications prior to submittal.

The Design/Builder shall address and resolve all comments and questions, and provide additional information to the regulatory agencies as needed. The Design/Builder has sole responsibility for obtaining all permits for the project. County will coordinate publications of the Notice of Intent from the permitting agencies, when required.

The County will be named as Permittee on all permits.

4.0 CONSTRUCTION SERVICES

The Design/Builder will provide engineering and construction services during construction activities.

4.1 Pre-Construction Conference

At least 10 days prior to starting construction, the Design/Builder will schedule, attend and conduct a pre-construction conference with the County and the County's Consultants. The conference will be attended by Design/Builder's Project Manager, lead Design Professional, Construction Manager, and others as appropriate and will be held to discuss such topics as may include, but not be limited to: schedules; procedures for handling operation & maintenance manuals and other submittals, and for processing Applications for Payment; maintenance of traffic; initiation of coordination with affected utilities; and to establish a working understanding among the parties as to the Project.

The Design/Builder will provide the County with a completed copy of the Design/Builder/Subcontractor/Supplier Information at or prior to the Pre-Construction Conference.

4.2 Prepare a Revised Project Management Plan

The Design/Builder will revise the PMP to include construction subcontractors, schedule, and address construction health and safety procedures and requirements.

4.3 Construction Services

The Design/Builder shall provide through itself or subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities and other temporary facilities to permit Design/Builder to complete the construction of the transfer station consistent with the Construction Documents. Design/Builder shall perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Construction Documents. Design/Builder shall at all times exercise complete and exclusive control over the means, methods, sequences and techniques of construction.

The Geosynthetics Manufacturer(s) is responsible for the production of geosynthetics that meet the requirements of the CQC Plan. The Geosynthetics Manufacturer is also responsible for providing adequate documentation regarding the characteristics of the resin, the characteristics of the finished product, the testing performed to determine the characteristics and the quality control measures taken during manufacturing.

The Geosynthetics Installer(s) is responsible for unloading, field handling, storing, placing, seaming (where applicable), temporarily anchoring against wind, and other aspects of geosynthetics installation in accordance with the CQC Plan.

Prior to installation, the Geosynthetics Installer is responsible for the preparation of the panel layout drawing identifying field seams, including dimensions and details. Prior to site mobilization, the Geosynthetics Installer is responsible for providing the installation schedule and a list of proposed field personnel and their qualifications.

4.4 Operation & Maintenance (O&M) Manual Review

O&M Manual shall be required for all equipment installed by the Design/Builder prior to startup. The Design/Builder shall be responsible for the review and approval of all O&M manuals submitted by the Design/Builder's construction subcontractor and/or suppliers. The Design/Builder shall notify the County upon receipt of O&M manuals to afford the County the opportunity to perform a concurrent review. Concurrent review by the County shall be solely at the County's discretion and shall be completed within 10 days of the receipt of notice from the Design/Builder. County comments will be provided to the Design/Builder for incorporation into the Design/Builder's response. Any review by the County and the County's Consultants shall be only for general conformance with the intent of the equipment for the Project and for compliance with the information given in the Amendment. The acceptance of a separate item as such will not indicate approval of the assembly in which the item functions.

The County's acceptance of O&M manuals shall not relieve the Design/Builder from its responsibility for any deviations from the requirements of the Construction Documents, unless the Design/Builder has in writing called the County's attention to such deviation, and the County has given written acceptance to the specific deviation; nor shall any acceptance by the County relieve the Design/Builder from responsibility for errors or omissions in the O&M Manuals.

4.5 Field Technical Assistance and Issue Clarifications

The Design/Builder will provide general technical information and additional data or drawings to resolve unforeseen conditions encountered during construction, provide clarifications and interpretations of the Construction Documents, and respond to Subcontractors requests for information.

4.6 Construction Progress Meetings

The Design/Builder will conduct weekly construction progress meetings with construction subcontractors and/or suppliers and County representatives to review Design/Builder's work

progress and scheduled activities, coordination between different contractors on-site, coordination with LCRMS Staff, and discuss and resolve of construction related issues.

4.7 Substantial and Final Inspections

The Design/Builder, in conjunction with the County, will conduct a substantial completion inspection to determine if the Project is substantially complete. The Design/Builder, in conjunction with the County, will conduct a comprehensive final inspection at the end of the Project to determine if the Project is complete in accordance with the requirements of the Construction Documents.

4.8 Facility Acceptance Testing

The Design/Builder will submit the proposed functional and performance testing workplan for the equipment and facility. Following approval of the testing plan, the Design/Builder will conduct functional and performance testing for the equipment and facility.

4.9 Record Drawings

The Design/Builder will maintain certified as-built drawings during construction and prepare record drawings for submittal to the County prior to Final Completion.

4.10 Inspection Services during Construction

The Design/Builder will perform inspection and quality control services during construction to document construction and installation procedures, observe the construction subcontractor's activities, and to verify that the construction of the Project is completed in accordance with the Construction Documents. The Design/Builder will provide the services of a liner/materials testing laboratory to perform field and laboratory materials testing and to monitor quality control, as required by the Amendment and/or Construction Documents. The County will subcontract separately with an engineering firm of their selection to provide independent third-party Construction Quality Assurance services for the duration of the Design/Build project.

4.11 Prepare Certification of Construction Completion

The Design/Builder will compile construction data, as-built drawings, and the Construction Quality Control Report, and support the preparation of the Certification of Construction Completion as required by applicable permits. Design/Builder will respond to agency requests for additional information to obtain the Certifications of Completion.

4.12 Construction Coordination

Design/Builder shall coordinate the activities of all subcontractors. If County performs other work on the Project or at the Site with separate contractors under County's control, Design/Builder agrees to cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

4.13 Scheduling

During the construction phase, Design/Builder will actively manage field construction activities for the project. The Design/Builder will aggressively monitor progress and performance on site to ensure that the master schedule and project specification developed during the design phase is followed.

4.14 Post Construction Warranty

The Design/Builder will provide a warranty for the life of the project (50-years), consistent General Conditions, 7.18 Design-Builder's General Warranty and Guarantee

5.0 DELIVERABLES

See Supplementary Conditions

Design/Builder shall provide two hard copies and an electronic copy of all deliverables to the County. Acceptable formats include Word, Excel, Microsoft Project, and AutoCAD. Other formats may be utilized as mutually agreed by the parties.

ATTACHMENT B

ATTACHMENT B PERFORMANCE SPECIFICATIONS

1. Be compliant with PADEP solid waste regulations that set forth requirements for landfill leachate storage and handling facilities;
2. Be compliant with the Lycoming County Solid Waste Permit and the conditions established within that permit regarding the leachate storage tank that is the subject of this design/build Request For Proposal;
3. The recommended design and construction approach shall consist of a new tank liner system. Repair to the existing liner system is not an acceptable approach;
4. Be capable of achieving "ZERO" leakage in all stages of operational use throughout the required lifespan of 50 years; The PADEP solid waste permit for the leachate storage tank allows a maximum daily discharge rate of 15 Gallons Per Day (GPD) into the tank leak detection system. Leakage rates greater than this will require enhanced monitoring of adjacent groundwater monitoring wells, for which the County would incur additional operating costs for the continued tank operation. The County is specifying a maximum daily discharge rate of 15 Gallons per Day (GPD) as the allowable leakage rate under this contract. The 50 year period includes 20 years of continued permitted operation life plus the mandatory PADEP minimum post-closure care period of 30 years;
5. Include a new complete liner system with leak detection capability for all currently lined interior surfaces;
6. Incorporate state-of-the-art and industry proven engineering design methodology, materials, performance monitoring instrumentation, construction procedures, detailed quality control and quality assurance procedures, and certification of completed construction to PADEP;
7. Incorporate industry-proven and utilized materials for the secure containment capacity of 5.5 million gallons of landfill leachate;
8. Preferably incorporate geosynthetic materials that are currently approved by PADEP. However, if alternate materials are judged to be superior and recommended to meet the project specifications, any additional geosynthetic material not currently approved by PADEP shall be evaluated for leachate compatibility in accordance with the existing Permit and shall be demonstrated to have acceptable engineering properties for use in the tank liner system. Written approval must be received from PADEP prior to using the alternate geosynthetic in the liner system. The approved list of materials is included herein;
9. Incorporate components that will function as new primary liner containment; composite liner containment; leak detection system for monitoring, collection, and conveyance to the detection zone collection manhole; cushion/protection of the primary geomembrane; and other features deemed to be critical to achieve the overall performance standards;
10. New geomembrane shall have the capability of incorporating leak detection technology and testing (such as conductive geomembrane, electronic leak detection instrumentation built into the new system, or other measures identified and recommended by the Design/Builder and deemed appropriate, etc.) over the entire surface of the new geomembrane as a component of installation process, to certify leak proof system at the completion of construction. The testing capability must be available both during construction and operation of the tank;

11. Fusion welding shall be the primary method of joining panel seams, when required, and the utilization of extrusion welding shall be absolutely minimized as much as possible;
12. Incorporate design features and construction procedures that minimize the number of panels and minimize the welding for seaming of panels;
13. Incorporate design features and construction measures that avoid “sharp angle” connections between panels: at the four (4) tank wall corners; and, at the floor and wall liners panels interconnection, preferably to be located on the floor of the tank;
14. Incorporate construction details that provide for liner system anchorage on the tank wall surfaces and at the termination of the liner system at the top of the tank walls, and provides for uplift resistance from buoyancy across the tank floor, while resulting in a finished product that will meet the “zero” leakage performance requirement;
15. The proposed new geomembrane and complete liner system shall be robust and have physical properties sufficient to guarantee that the required performance standards are provided long term in the varying and seasonal “exposed” weather conditions that the system will experience during its operational life;
16. Design, as part of the new liner system, a leak detection system that will consider (provide details on how to incorporate or abandon) the existing tank leak detection system along with details for the design, construction, monitoring and operation of a proposed new leak detection system;
17. Evaluate the necessity of retaining the existing east and west stairway structures and detail liner installation methods and procedures to account for: the condition of retaining these stairways; or, the condition of removal of these structures and their replacement with an alternate method of ingress and egress for the tank by LCRMS personnel;
18. Evaluate the current leachate inflow piping and outflow pump structure and piping and make recommendation on retaining the existing system or replacing with an alternate system;
19. Provide a detailed step by step construction sequence schedule;
20. Develop operational and maintenance protocol for putting the new tank into service considering the new liner system and appurtenances in their totality;
21. Long term protection of the tank liner system and appurtenances in their totality; The Design/Builder shall incorporate components, measures and methods into the design of the tank replacement liner system that will ensure that the new system will operate as required for its design lifetime under the operational and environmental conditions to which it will be exposed.
22. The design shall include an allowance for a 2-foot freeboard below the top of the relined concrete tank wall while providing the required 5.5 million gallons of capacity below this freeboard. Design features shall accommodate this requirement.
23. A Geosynthetic Clay Liner (GCL), or another material judged to be equal for the intended function, shall be incorporated as a composite layer below the geomembrane liner of the tank. The liner system shall be a composite with the low permeability layer located below the geomembrane.
24. Electric and Flood testing – Final acceptance of the reconstructed tank and liner system shall be based on the results of two mandatory types of testing of the replacement liner system:
 - a. Electric Leak Location dipole, arc and spark testing in accordance with ASTM D 7953;

- b. Flood testing of the completed tank in its entirety. The tank shall be filled in a controlled manner to maximum design level and the detection system monitored for flow on a daily basis for a minimum period of fourteen (14) days.

Both test methods will be documented and submitted by the Design/Builder in a detailed report to accompany certification of the completed construction.

- 25. Construction procedures shall include consideration of and allowances for management of thermal expansion and contraction of all materials during and post construction.

ATTACHMENT C

**ATTACHMENT C
PROPOSAL CHECKLIST**

Proposal Form. All blanks appropriately filled in ink with both words and figures, and signed where applicable.

Proposal Bond. Execute and attach Proposal security.

Price Proposal Form

Agreement

Performance Bond

Payment Bond

Consent of Surety

ATTACHMENT D

**ATTACHMENT D
PROPOSAL FORM**

LYCOMING COUNTY LANDFILL – LEACHATE STORAGE TANK LINER

SUBMITTED BY:

PROPOSAL RECIPIENT

1.01 This Proposal is submitted to:

**Controller of the County of Lycoming
Suite 204
Executive Plaza
330 Pine Street
Williamsport, Pennsylvania 17701**

1.02 The undersigned Proposer proposes and agrees, if this Proposal is accepted, to enter into an Agreement with Owner in the form included in the Proposal Documents to perform all Work as specified or indicated in the Proposal Documents for the prices and within the times indicated in this Proposal and in accordance with the other terms and conditions of the Proposal Documents.

PROPOSER’S ACKNOWLEDGEMENTS

1.03 Proposer accepts all of the terms and conditions of the Instructions to Proposers, including without limitation those dealing with the disposition of Proposal security. This Proposal will remain subject to acceptance for 45 days after the Proposal opening, or for such longer period of time that Proposer may agree to in writing upon request of Owner.

PROPOSER’S REPRESENTATIONS

1.04 In submitting this Proposal, Proposer represents that:

A. Proposer has examined and carefully studied the Proposal Documents, and any data and reference items identified in the Proposal Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Proposer has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Proposer is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Proposer has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Proposer has considered the information known to Proposer itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Proposal Documents; and any Site-related reports and drawings identified in the Proposal Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Proposer; and (3) Proposer's safety precautions and programs.
- F. Proposer agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Proposal for performance of the Work at the price Proposal and within the times required, and in accordance with the other terms and conditions of the Proposal Documents.
- G. Proposer is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Proposal Documents.
- H. Proposer has given Designer written notice of all conflicts, errors, ambiguities, or discrepancies that Proposer has discovered in the Proposal Documents, and confirms that the written resolution thereof by Designer is acceptable to Proposer.
- I. The Proposal Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Proposal constitutes an incontrovertible representation by Proposer that Proposer has complied with every requirement of this Article, and that without exception the Proposal and all prices in the Proposal are premised upon performing and furnishing the Work required by the Proposal Documents.

PROPOSER'S CERTIFICATION

1.05 Proposer certifies that:

- A. This Proposal is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Proposer has not directly or indirectly induced or solicited any other Proposer to submit a false or sham Proposal;

- C. Proposer has not solicited or induced any individual or entity to refrain from Proposal;
- D. Proposer has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 1.05.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the Proposal process;
“fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the Proposal process to the detriment of Owner, (b) to establish Proposal prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 2. “collusive practice” means a scheme or arrangement between two or more Proposers, with or without the knowledge of Owner, a purpose of which is to establish Proposal prices at artificial, non-competitive levels;
 - 3. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the Proposal process or affect the execution of the Contract.

TIME OF COMPLETION

- 1.06 Proposer agrees that the Work and Milestones, will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.03 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 1.07 Proposer accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work, and any specified Milestones, within Contract Times.

DEFINED TERMS

- 1.08 The terms used in this Proposal with initial capital letters have the meanings stated in the Instructions to Proposers, the General Conditions, and the Supplementary Conditions.

PROPOSAL SUBMITTAL

PROPOSER: *[Indicate correct name of Proposal entity]*

By: _____
[Signature]

[Printed name] _____
(If Proposer is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
[Signature]

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Proposer's License No.: _____
(where applicable)

PROPOSER'S CAPACITY TO PERFORM

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

SUBMITTED BY:

Official Name of Firm: _____

Address: _____

SUBMITTED TO:

SUBMITTED FOR:

Owner: _____

Project Name: _____

TYPE OF WORK:

CONTRACTOR'S CONTACT INFORMATION

Contact Person: _____

Title: _____

Phone: _____

Email: _____

AFFILIATED COMPANIES:

Name: _____

Address: _____

TYPE OF ORGANIZATION:

SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

PARTNERSHIP

Date of Organization: _____

Type of Partnership: _____

Name of General Partner(s): _____

CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

- President: _____

- Vice President(s): _____

- Treasurer: _____

- Secretary: _____

LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

Managers: _____

JOINT VENTURE

State of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

LICENSING

Jurisdiction: _____

Type of License: _____

License Number: _____

Jurisdiction: _____

Type of License: _____

License Number: _____

CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____

Minority Business Enterprise: _____

Woman Owned Enterprise: _____

Small Business Enterprise: _____

Other (_____): _____

BONDING INFORMATION

Bonding Company: _____

Address: _____

Bonding Agent: _____

Address: _____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

Account Manager: _____

Phone: _____

Include an audited balance sheet for each of the last 3 years in **Attachment B-5**.

DESIGN EXPERIENCE:

Relevant Previous Experience:

List on **Attachment B-10** relevant projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a design contract awarded to it?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a design contract awarded to them in their name or when acting as a principal of another entity?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

CONSTRUCTION EXPERIENCE:

Relevant Previous Experience:

List on **Attachment B-10** relevant projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

SAFETY PROGRAM:

Name of Contractor's Safety Officer: _____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Proposal) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Proposal) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Proposal) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Proposal) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Proposal) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

MAJOR EQUIPMENT:

List on **Attachment B-6** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF __, 20__

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

Attachment B-1 Contractor Disclosure

Attachment B-2 Certification of Insurance Ability

Attachment B-3 Certification of Bonding Ability

Attachment B-4 Evidence of authority for individuals to bind organization to an agreement.

Attachment B-5 Financial Qualifications - Audited balance sheet for each of the last 3 years

Attachment B-6 Major Equipment Available **(Form Attached)**

Attachment B-7 Required safety program

Attachment B- 8 Organization Structure and Management Plan **4 Page limit**

Attachment B-9 Qualifications of the Firms. Prepare one form each for the Design Firm, Construction Firm and Liner installer. **3 Page limit per firm**

Attachment B-10 Experience of the Firms. Prepare one form each for the Design Firm, Construction Firm and Liner installer. **(Form Attached)**

Attachment B-11 Experience and Qualifications of Key Personnel – Provide a **two-page resume** of officers and key individuals (including Principal-in Charge, Project Manager, Lead Engineer, Certifying Engineer, Construction Site Superintendent, Lead Liner Installer, Liner Installer, and Construction Safety Officer).

Attachment B-12 Technical Approach - The Proponent shall describe its approach to the Scope of Service presented in Attachment A.

Attachment B-13 Performance on past projects and projects for others - Prepare one form each for the Design Firm, Construction Firm and Liner installer **(Form Attached)**

Attachment B-14 Schedule. Statement of proposed Design/Build Milestones with time schedule.

Attachment B-3 Certification of Bonding Ability

CONSENT OF SURETY

The undersigned consents and agrees that if a Contract for the Project identified below and for which Proposer has submitted a Proposal to the Owner, is awarded to the Proposer, the undersigned identified below as Surety, will become bound as surety and Guarantor for its faithful performance, and will execute a bond for performance of the Contract in the form included in these Bidding Documents, said bond to be in the amount equal to 100 percent of the Contract price and to be conditioned so as to indemnify the COUNTY OF LYCOMING (OWNER) against loss due to the bond; and will execute a bond for payment for materials and labor to guarantee payment of all persons performing or furnishing materials or labor for performance of said Contract, said bond be in the form included in these Bidding Documents, to be in the amount equal to 100 percent of the Contract Price and to be conditioned so as to indemnify the OWNER against loss due to failure of the Contractor to meet stipulations of the bond.

IN WITNESS WHEREOF, said corporation has set its seal and caused these presents to be signed by its authorized officers this _____ day of _____, 2020.

For Proposal Submitted by: _____ .
(Name of Proposer)

For Project identified as: **Lycoming County Landfill – Leachate Storage Tank Liner**

BY: _____ (Seal)
(Signature of Surety)

(Printed or Typed Name of Surety) (Date)

(TITLE)

(WITNESS)

[NOTE: In lieu of submitting this form, Proposers may submit a signed letter of the Surety on Surety's letterhead containing the above statement.]

Attachment B-6 Major Equipment Available -

ITEM	PURCHASE DATE	CONDITION	ACQUIRED VALUE

Attachment B-8 Organizational and Management Structure

4 Page limit

The Proponent's Organizational and Management Structure Section shall:

- Provide the Proponent's Organizational Chart graphically
- Describe the relationship of its Key Personnel roles, including the Principal-in Charge, Project Manager, Lead Engineer, Certifying Engineer, Construction Site Superintendent, Construction Safety Officer, Key Subcontractors and other members of the team;
- Provide a description of how this organizational structure will facilitate managing the Services requested; and
- Provide a description on how Proposer will provide the Services, and describe its management process and how it will be implemented to ensure all work and services performed are to the highest quality. The approach should include a description of the Proponent's process as it pertains to methods, techniques and procedures used to manage both the design and construction process.

Attachment B- 9 Qualifications**Geosynthetics Manufacturer Qualifications**

- The geosynthetics manufacturer shall have manufactured a minimum of 3,000,000 square feet of similar material during the last five years.

Liner Installer Qualifications

- Installing contractor (installer) shall be trained to install the specified materials for the project. Installer shall be an approved and/or licensed installer of the specified materials for the project.
- The installation shall be performed under the direction of a Field Installation Supervisor who shall be responsible throughout the installation for liner layout, seaming, patching, testing, repairs, and all other activities of the Installer. Field Installation Supervisor shall have installed or supervised the installation and seaming of a minimum of ten projects involving a total of 2,000,000 square feet of geomembrane.
- Field seaming shall be performed under the direction of a Master Seamer (who may also be the Field Installation Supervisor or Crew Foreman) who has seamed a minimum of 1,000,000 square feet of structured geomembrane or similar product, using the type of seaming apparatus to be used in the current project.
- All seaming, patching, other welding operations, and testing shall be performed by qualified technicians employed by the Installer.
- The installation contractor shall have an indoor fabrication shop with a minimum of 20,000 square feet at its primary location to allow for prefabrication of materials in a controlled environment as required for the project. The fabrications capabilities shall include HDPE structures, concrete protective liners, CNC machining, thermoplastic pipe and fittings fabrication, rigid thermoplastic sheet butt fusion, destructive and nondestructive testing and be designated as a fabrication division of the contractor.
- The installation contractor shall have a minimum of 20 years' experience of geosynthetics installation and fabrication as the company's primary business activity.

Attachment B- 10 Relevant Project Experience

Copy form and complete for at least five projects for each the Design Firm, Construction Firm and Liner Installer (a minimum of fifteen projects).

Firm	
Role (circle one)	Designer Construction Liner Installer
Name and location of project	
Client and owner	
Client contact including address, email and phone number	
Applicability and relevance of referenced project	
Description of Proposer’s scope of responsibility	
Contract value	
Key Personnel involved	
Date of construction	
Dates/Duration of contract	
Major accomplishments	
Other technical information to demonstrate relevance to proposed project/ approach	

Attachment B-13 Performance on past projects and projects for others

Prepare one form each for the Design Firm, Construction Firm and Liner installer.

Performance on past projects and projects for others

Firm				
Role (circle one)	Designer	Construction	Liner Installer	
Project Name and Description	Owner's Contact	Contract Dates	Status	Cost of Work
	Name: Address: Telephone: Email:			
	Name: Address: Telephone: Email:			
	Name: Address: Telephone: Email:			
	Name: Address: Telephone: Email:			
	Name: Address: Telephone: Email:			

ATTACHMENT E

**ATTACHMENT E
PRICE PROPOSAL FORM**

ARTICLE 1 - PRICE PROPOSAL RECIPIENT

1.09 This Price Proposal is submitted to:

Lycoming County Resource Management Services Department
P.O. Box 187
447 Alexander Drive (U.S. Route 15)
Montgomery, PA 17752

1.10 The undersigned Proposer proposes and agrees, if this Price Proposal is accepted and Owner awards the design-build contract to Proposer, to enter into the design-build contract with Owner in the form included in the RFP Documents, to perform all Work as specified or indicated in the RFP Documents for the prices and within the times indicated in this Price Proposal and in accordance with the other terms and conditions of the RFP Documents.

ARTICLE 2 – PROPOSER’S ACKNOWLEDGEMENTS

2.01 Proposer accepts all of the terms and conditions of the Request for Proposals, including without limitation those dealing with the disposition of Price Proposal security. This Price Proposal will remain subject to acceptance for 60 days after the Price Proposal opening, or for such longer period of time that Proposer may agree to in writing upon request of Owner.

ARTICLE 3 – PROPOSER’S REPRESENTATIONS

3.01 In submitting this Price Proposal, Proposer represents that:

A. Proposer has examined and carefully studied the RFP Documents, and any data and reference items identified in the RFP Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
---------------------	----------------------

B. Proposer has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Proposer is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. Proposer has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site, and all drawings (if any) of physical conditions relating to existing surface or subsurface structures at the Site, that Owner has identified or made available to Proposer, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that Owner has identified or made available to Proposer, especially with respect to Technical Data in such reports and drawings.
- E. Proposer has considered the information known to Proposer itself, and to members of Proposer's design-build team; information commonly known to design professionals, design-builders, and contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the RFP Documents; and the Site-related reports and drawings (if any) identified in the RFP Documents or otherwise made available to Proposer, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the project design; (3) the means, methods, techniques, sequences, and procedures of construction to be employed by Proposer; and (4) Proposer's safety precautions and programs.
- F. Proposer agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the preparation of its Proposal for performance of the Work at the prices stated and within the times required, and in accordance with the other terms and conditions of the RFP Documents.
- G. Proposer is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the RFP Documents.
- H. Proposer has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Proposer has discovered in the RFP Documents, and confirms that the written response from Owner is acceptable to Proposer.
- I. The RFP Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Price Proposal constitutes an incontrovertible representation by Proposer that Proposer has complied with every requirement of this Article, and that without exception the Price Proposal and all prices in the Price Proposal are premised upon performing and furnishing the Work required by the RFP Documents.

ARTICLE 4 – PROPOSER'S CERTIFICATION

4.01 Proposer certifies that:

- A. This Price Proposal is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Proposer has not directly or indirectly induced or solicited any other Proposer to submit a false or sham Price Proposal;
- C. Proposer has not solicited or induced any individual or entity to refrain from submitting a Price Proposal; and
- D. Proposer has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

- 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the proposal process to the detriment of Owner, (b) to establish prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
- 3. "collusive practice" means a scheme or arrangement between two or more Proposers, with or without the knowledge of Owner, a purpose of which is to establish prices at artificial, non-competitive levels; and
- 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the proposal process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF PRICE PROPOSAL

5.01 Proposer will complete the Work in accordance with the Contract Documents for the following price(s):.

A. Stipulated Price	\$
---------------------	----

Proposer to include in other Price Proposal item(s) the other costs (if any) associated with accepting such assignment and administering the assigned contract.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Proposer agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Proposer accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS PRICE PROPOSAL

- 7.01 The following documents are submitted with and made a condition of this Price Proposal:
 - A. Required Price Proposal security

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Price Proposal with initial capital letters have the meanings stated in the RFP, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – PRICE PROPOSAL SUBMITTAL

PROPOSER: *[Indicate correct name of proposing entity]*

By:
Signature: _____

Printed name: _____

(If Proposer is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
Signature: _____

Printed name: _____

Title: _____

Submittal Date: _____

Address for giving notices: _____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail
address: _____

Proposer's License No.: _____

ATTACHMENT F

**ATTACHMENT F
AGREEMENT BETWEEN OWNER AND DESIGN-BUILDER
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between County of Lycoming (“Owner”), and [] (“Design-Builder”).

PROJECT INFORMATION

Project: Leachate Storage Tank Liner

Design-Build Contract: *[name, Owner’s identification number]* (“Contract”)

Owner’s Consultant: Barton & Loguidice, D.P.C. (B&L), and Civil & Environmental Consultants, Inc., (CEC)

Engineer: Design-Builder has retained [] (“Engineer”) for the performance of professional engineering services under this Contract.

Authorized Representatives: Owner and Design-Builder each hereby designates a specific individual authorized to act as representative with respect to the performance of responsibilities under this Contract. Such an individual shall have authority to transmit instructions, receive formal notices, receive information, and render decisions relative to this Contract on behalf of the respective party that the individual represents.

1. Owner’s Authorized Representative:

Michael D. Hnatin, P.E.
Lycoming County Resource Management Services (LCRMS)
447 Alexander Drive, Montgomery, PA 17752
Email: michael.hnatin@lcrms.com
Telephone: (570) 547-2470

2. Design-Builder’s Authorized Representative:

[]

Owner and Design-Builder further agree as follows:

ARTICLE 1 – THE WORK

1.01 General Description of Work

- A. Design-Builder shall complete all Work as specified or indicated in the Contract. The Work is generally described as the design and construction of the following:
 - 1. Design and permitting of existing leachate storage tank;
 - 2. Construction of modifications to leachate storage tank.

ARTICLE 2 – CONTRACT TIMES

2.01 Time of the Essence

- A. All time limits for Design-Builder's attainment of Milestones, if any, Substantial Completion, and completion and readiness for final payment, as stated in the Contract, are of the essence of the Contract.

2.02 Contract Times: Days

- A. Design-Builder will substantially complete the Work within 150 days after the Effective Date.
- B. Design-Builder will have the Work completed and ready for final payment, in accordance with Paragraph 14.06 of the General Conditions, within 200 days after the Effective Date.

2.03 Liquidated Damages; Early Completion Bonus

- A. Design-Builder and Owner recognize that time is of the essence as stated in Paragraph 2.01 above, and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 2.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving, in a lawsuit or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Design-Builder agree that as liquidated damages for delay (but not as a penalty):
 1. Substantial Completion: Design-Builder shall pay Owner Two Thousand Dollars (\$2,000.00) for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 2.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Design-Builder shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Design-Builder shall pay Owner One Thousand Dollars (\$1,000.00) for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion, final completion, and Milestones (if applicable) are not additive, and will not be imposed concurrently. Liquidated damages for failing to attain Substantial Completion shall take precedence.

ARTICLE 3 – CONTRACT PRICE

3.01 Stipulated Sums

- A. Owner shall pay Design-Builder for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:
 1. For all Work other than Unit Price Work, a lump sum of: \$[].

3.02 Changes in Contract Price Based on Cost of the Work

- A. If the price of Design Professional Services covered by a Change Order or an adjustment in the Contract Price is determined on the basis of Cost of the Work, then for such Design Professional Services (exclusive of reimbursable expenses, if any) the Engineer, Project Design Professional, or other design entity performing the Design Professional Services (regardless of tier) may invoice no more than the direct labor cost of each employee providing services multiplied by a factor of 2.8, which covers labor costs, overhead, and profit.
- B. If the value of Work covered by a Change Order or an adjustment in the Contract Price is determined on the basis of Cost of the Work, and involves Work performed under Construction Subcontracts or

Design Agreements, the allowable mark-ups on lower tier invoices shall be limited as stated in Paragraph 11.05.D.2.c and d of the General Conditions.

ARTICLE 4 – PAYMENT PROCEDURES

4.01 Submittal and Processing of Payments

- A. Design-Builder shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Owner will process Applications for Payment as provided in the General Conditions.

4.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Design-Builder’s Applications for Payment on or about the 20th day of each month during performance of the Work as provided in Paragraph 4.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

- 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

- a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Owner, and if the character and progress of the Work have been satisfactory to Owner, then as long as the character and progress of the Work remain satisfactory to Owner, there will be no additional retainage; and
- b. 75 percent of cost of materials and equipment not incorporated in the Work but delivered, suitably stored, and accompanied by documentation satisfactory to Owner as provided in Paragraph 14.01.B of the General Conditions (with the balance being retainage).

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Design-Builder to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 14.01.G of the General Conditions, and less 200 percent of Owner’s estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

- C. Notwithstanding the provisions above, no retainage shall be withheld with respect to the portion of a payment application pertaining to engineering, design, and other professional services.

4.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.06 of the General Conditions, Owner shall pay the remainder of the Contract Price.

ARTICLE 5 – INTEREST

5.01 Interest Rate

- A. All amounts not paid when due shall bear interest at the rate of 1.5 percent per annum, or if applicable at the rate stated in a governing prompt payment statute.

ARTICLE 6 – DESIGN-BUILDER’S REPRESENTATIONS

6.01 Representations

- A. Design-Builder makes the following representations for Owner’s reliance:

1. Design-Builder has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
2. Design-Builder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Design-Builder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Design-Builder has carefully studied all: (a) reports of explorations and tests of subsurface conditions at or adjacent to the Site, and all drawings of physical conditions relating to existing surface or subsurface structures at the Site, if any, that Owner has identified or made available to Design-Builder, especially with respect to Technical Data in such reports and drawings, and (b) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site, that Owner has identified or made available to Design-Builder, especially with respect to Technical Data in such reports and drawings.
5. Design-Builder has considered the information known to Design-Builder itself, and to Construction Subcontractors and Project Design Professionals that Design-Builder has selected as of the Effective Date; information commonly known to design professionals, design-builders, and contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings (if any) identified in the Contract Documents or otherwise made available to Design-Builder, with respect to the effect of such information, observations, and documents on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Design-Builder; and (c) Design-Builder's safety precautions and programs.
6. Based on the information and observations referred to in the preceding paragraph, Design-Builder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary prior to entry into the Contract at the Contract Price, subject to the Contract Times.
7. Design-Builder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
8. Design-Builder has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Design-Builder has discovered in the Contract Documents, and the written response from Owner is acceptable to Design-Builder.
9. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
10. Design-Builder's entry into this Contract constitutes an incontrovertible representation by Design-Builder that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 7 – CONTRACT DOCUMENTS

7.01 Contents

- A. The Contract Documents consist of the following:
 1. This Agreement (pages 1 to 8, inclusive).
 2. Performance bond (pages 1 to 4, inclusive).

3. Payment bond (pages 1 to 4, inclusive).
 4. General Conditions (pages 1 to 60, inclusive).
 5. Supplementary Conditions (pages 1 to 14, inclusive).
 6. Scope of Work (pages 1 to 7, inclusive).
 7. Performance Specifications (pages 1 to 3, inclusive).
 8. Addenda (numbers [] to [], inclusive).
 9. Design-Builder’s Proposal
 10. Proposal Amendment
 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Work Change Directives.
 - b. Change Orders.
 - c. Record Drawings and Record Specifications
- B. The documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 8 – MISCELLANEOUS

8.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and Supplementary Conditions.

8.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on the other party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

8.03 Successors and Assigns

- A. Owner and Design-Builder each binds itself, its successors, assigns, and legal representatives to the other party hereto, and its successors, assigns, and legal representatives, in respect to all covenants, agreements, and obligations contained in the Contract.

8.04 Severability

- A. Any provision or part of the Contract held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Design-Builder, who agree that the Contract shall be reformed to replace such stricken

provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

8.05 Design-Builder's Certifications

- A. Design-Builder certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Design-Builder have signed this Agreement.

This Agreement will be effective on the date last executed below (which is the Effective Date of the Contract).

OWNER:

DESIGN-BUILDER:

County of Lycoming

(date executed)

(date executed)

Scott L. Metzger, Chairperson

By:

(signature)

Tony R. Mussare, Vice Chairperson

(Name)

Matthew McDermott, Chief Clerk

(Title)

Richard Mirabito, Secretary

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.:

(where applicable)

ATTACHMENT G

ATTACHMENT G DESIGN-BUILD PERFORMANCE BOND

DESIGN-BUILDER (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

County of Lycoming
48 West Third Street
Williamsport, PA 17701

DESIGN-BUILD CONTRACT

Effective Date of the Contract:
Amount:
Description (name and location):

BOND

Bond Number:
Date (not earlier than the Effective Date of the Contract):
Amount:
Modifications to this Bond Form: None See Paragraph 16

Surety and Design-Builder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Design-Build Performance Bond to be duly executed by an authorized officer, agent, or representative. *[Note: Provide supplemental execution by any additional parties, such as joint ventures.]*

DESIGN-BUILDER AS PRINCIPAL

SURETY

Design-Builder's Name

Surety's Name

By: _____
Signature

By: _____
Signature (attach power of attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

1. The Design-Builder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Design-Build Contract, which is incorporated herein by reference.

2. If the Design-Builder performs the Design-Build Contract, the Surety and the Design-Builder shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Design-Build Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Design-Builder and the Surety that the Owner is considering declaring a Design-Builder Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Design-Builder, and Surety to discuss the Design-Builder's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Design-Builder, and the Surety agree, the Design-Builder shall be allowed a reasonable time to perform the Design-Build Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Design-Builder Default;

3.2 The Owner declares a Design-Builder Default, terminates the Design-Build Contract, and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Design-Build Contract Price in accordance with the terms of the Design-Build Contract to the Surety, or to a design-builder or contractor selected to perform the Design-Build Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its

obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Design-Builder, with the consent of the Owner, to perform and complete the Design-Build Contract;

5.2 Undertake to perform and complete the Design-Build Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified design-builders or contractors acceptable to the Owner for a contract for performance and completion of the Design-Build Contract, arrange for a contract to be prepared for execution by the Owner and a design-builder or contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Design-Build Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Design-Build Contract Price incurred by the Owner as a result of the Design-Builder Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new design-builder or contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner

refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Design-Builder under the Design-Build Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Design-Build Contract. Subject to the commitment by the Owner to pay the Balance of the Design-Build Contract Price, the Surety is obligated, without duplication, for:

7.1 the responsibilities of the Design-Builder for correction of defective work and completion of the Design-Build Contract;

7.2 additional legal, design professional, and delay costs resulting from the Design-Builder's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Design-Build Contract, actual damages caused by delayed performance or non-performance of the Design-Builder.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Design-Builder that are unrelated to the Design-Build Contract, and the Balance of the Design-Build Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Design-Build Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction where the construction portion of the Project is located, and shall be instituted within two years after a declaration of Design-Builder Default, or within two years after the

Design-Builder ceased working, or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice under this Bond to the Surety, the Owner, or the Design-Builder shall be in writing, and mailed or delivered to the recipient's address as shown in this Bond.

13. When this Bond has been furnished to comply with a statutory or other legal requirement where the construction portion of the Project is located, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted from this Bond and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Design-Build Contract Price: The total amount payable by the Owner to the Design-Builder under the Design-Build Contract after all proper adjustments have been made including allowance for the Design-Builder for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Design-Builder is entitled, reduced by all valid and proper payments made to or on behalf of the Design-Builder under the Design-Build Contract.

14.2 Design-Build Contract: The agreement between the Owner and Design-Builder identified as such in this Bond, including all Contract Documents and changes duly made to such Design-Build Contract.

14.3 Design-Builder Default: Failure of the Design-Builder, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Design-Build Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Design-Builder as required under the Design-Build Contract, or to perform and complete or comply with the other material terms of the Design-Build Contract.

14.5 Contract Documents: All the documents that comprise the contract between the Owner and Design-Builder.

15. Any singular reference to Design-Builder, Surety, Owner, or other party shall be considered plural where applicable.

16. Modifications to this Bond are as follows:

In the event of any dispute or claim between the Owner, the Design-Builder and/or the Surety, the Surety agrees that it shall not be represented by the same lawyer(s) or law firm as the Design-Builder in any such dispute or claim.

ATTACHMENT H

**ATTACHMENT H
DESIGN-BUILD PAYMENT BOND**

DESIGN-BUILDER (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

County of Lycoming
48 West Third Street
Williamsport, PA 17701

DESIGN-BUILD CONTRACT

Effective Date of the Contract:

Amount:

Description (name and location):

BOND

Bond Number:

Date (not earlier than the Effective Date of the Contract):

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Design-Builder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative. **[Note: Provide supplemental execution by any additional parties, such as joint ventures.]**

DESIGN-BUILDER AS PRINCIPAL

SURETY

Design-Builder's Name

Surety's Name

By: _____
Signature

By: _____
Signature (attach power of attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title	Title
<p>1. The Design-Builder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, services, materials, and equipment furnished for use in the performance of the Design-Build Contract, which is incorporated herein by reference, subject to the following terms.</p>	<p>within ninety (90) days after having last performed labor or services, or last furnished materials or equipment included in the Claim; and</p>
<p>2. If the Design-Builder promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, services, materials, or equipment furnished for use in the performance of the Design-Build Contract, then the Surety and the Design-Builder shall have no obligation under this Bond.</p>	<p>5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).</p> <p>5.2 Claimants who are employed by or have a direct contract with the Design-Builder have sent a Claim to the Surety (at the address described in Paragraph 13).</p>
<p>3. If there is no Owner Default under the Design-Build Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Design-Builder and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, services, materials, or equipment furnished for use in the performance of the Design-Build Contract, and tendered defense of such claims, demands, liens, or suits to the Design-Builder and the Surety.</p>	<p>6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Design-Builder, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.</p>
<p>4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.</p>	<p>7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:</p>
<p>5. The Surety's obligations to a Claimant under this Bond shall arise after the following:</p>	<p>7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and</p> <p>7.2 Pay or arrange for payment of any undisputed amounts.</p> <p>7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Design-Builder may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.</p>
<p>5.1 Claimants that do not have a direct contract with the Design-Builder,</p> <p>5.1.1 have furnished a written notice of non-payment to the Design-Builder, stating with substantial accuracy the amount claimed and the name of the party to which the materials were, or equipment was, furnished or supplied, or for which the labor was done or performed,</p>	

8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Design-Builder under the Design-Build Contract shall be used for the performance of the Design-Build Contract and to satisfy claims, if any, under any design-build performance bond. By the Design-Builder furnishing and the Owner accepting this Bond, they agree that all funds earned by the Design-Builder in the performance of the Design-Build Contract are dedicated to satisfy obligations of the Design-Builder and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Design-Builder that are unrelated to the Design-Build Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Design-Build Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction where the construction portion of the Project is located, or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Design-Build Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Design-Builder shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement where the construction portion of the Project is located, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted from this Bond and provisions conforming to such statutory or other legal requirement shall be deemed incorporated here. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Design-Builder and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the individual or entity for which the labor or services were done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, services, materials, or equipment were furnished for use in the performance of the Design-Build Contract;
4. A brief description of the labor, services, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or services, or last furnished materials or equipment, for use in the performance of the Design-Build Contract;
6. The total amount earned by the Claimant for labor, services, materials,

- or equipment furnished as of the date of the Claim;
 - 7. The total amount of previous payments received by the Claimant; and
 - 8. The total amount due and unpaid to the Claimant for labor, services, materials, or equipment furnished as of the date of the Claim.
- 16.2 **Claimant:** An individual or entity having a direct contract with the Design-Builder or with a subcontractor of the Design-Builder to furnish labor, services, materials, or equipment for use in the performance of the Design-Build Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms “labor, services, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Design-Build Contract, architectural and engineering services required for performance of the work of the Design-Builder and the Design-Builder’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3 **Design-Build Contract:** The agreement between the Owner and Design-Builder identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Design-Builder as required under the Design-Build Contract, or to perform and complete or comply with the other material terms of the Design-Build Contract.

- 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Design-Builder.
17. Any singular reference to Design-Builder, Surety, Owner, or other party shall be considered plural where applicable.
18. Modifications to this Bond are as follows:
- In the event of any dispute or claim between the Owner, the Design-Builder and/or the Surety, the Surety agrees that it shall not be represented by the same lawyer(s) or law firm as the Design-Builder in any such dispute or claim

ATTACHMENT I

**ATTACHMENT I
GENERAL CONDITIONS
OF THE CONTRACT BETWEEN OWNER AND DESIGN-BUILDER**

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology	85
1.01 Defined Terms.....	85
1.02 Terminology	90
Article 2 – Preliminary Matters	91
2.01 Delivery of Bonds and Evidence of Insurance	91
2.02 Copies of Documents.....	91
2.03 Conceptual Documents	91
2.04 Before Starting the Work.....	92
2.05 Authorized Representatives.....	92
2.06 Initial Conference	92
2.07 Review of Schedules	92
2.08 Electronic Transmittals	93
Article 3 – Documents: Intent, Amending, Reuse	93
3.01 Contract Documents.....	93
3.02 Reference Standards	93
3.03 Resolving Discrepancies.....	94
3.04 Ownership and Reuse of Documents	94
Article 4 – Commencement and Progress of the Work.....	95
4.01 Commencement of Contract Times	95
4.02 Starting the Work	95
4.03 Progress Schedule	95
4.04 Delays in Design-Builder’s Progress	95
Article 5 – SITE; Subsurface and Physical conditions; Hazardous Environmental Conditions	96
5.01 Availability of Lands.....	96
5.02 Use of Site and Other Areas.....	96
5.03 Reference Points	97
5.04 Differing Site Conditions.....	97
5.05 Underground Facilities	98
5.06 Hazardous Environmental Conditions at Site	100
Article 6 – Bonds and Insurance.....	101
6.01 Performance, Payment, and Other Bonds.....	101
6.02 Insurance—General Provisions.....	102

6.03 Design-Builder’s Insurance 103

6.04 Owner’s Liability Insurance..... 106

6.05 Property Insurance 106

6.06 Waiver of Rights 108

6.07 Receipt and Application of Property Insurance Proceeds 109

Article 7 – Design-Builder’s Responsibilities 110

7.01 Design Professional Services..... 110

7.02 Construction..... 110

7.03 Supervision and Superintendence of Construction..... 110

7.04 Labor; Working Hours..... 110

7.05 Services, Materials, and Equipment..... 111

7.06 “Or Equals” and Substitutions..... 111

7.07 Concerning Project Design Professionals, Construction Subcontractors, Suppliers, and Others 112

7.08 Patent Fees and Royalties..... 113

7.09 Permits and Utility Charges 114

7.10 Taxes..... 114

7.11 Laws and Regulations 114

7.12 Record Documents 114

7.13 Safety and Protection 115

7.14 Safety Representative..... 116

7.15 Hazard Communication Programs 116

7.16 Emergencies..... 116

7.17 Post-Construction Phase..... 116

7.18 Design-Builder’s General Warranty and Guarantee..... 116

7.19 Indemnification 117

Article 8 – submittals..... 117

8.01 Design-Builder’s Preparation of Submittals..... 117

8.02 Owner’s Review of Submittals 118

Article 9 – Other Construction 120

9.01 Other Work 120

9.02 Coordination 120

9.03 Legal Relationships..... 121

Article 10 – Owner’s Responsibilities 122

10.01 General 122

10.02 Insurance 123

10.03 Limitations on Owner’s Responsibilities..... 123

10.04 Undisclosed Hazardous Environmental Condition..... 123

10.05 Owner’s Site Representative..... 123

10.06 Owner’s Consultants and Managers 124

10.07	Safety Programs	124
10.08	Permits and Approvals.....	124
Article 11	– Amending the contract documents; Changes in the Work	124
11.01	Amending and Supplementing Contract Documents.....	124
11.02	Authorized Changes in the Work	125
11.03	Unauthorized Changes in the Work	125
11.04	Changes Involving the Design	125
11.05	Change of Contract Price	125
11.06	Change of Contract Times.....	127
11.07	Execution of Change Orders	127
11.08	Notice to Sureties.....	127
Article 12	– Cost of the Work Adjustments; Unit Price Work.....	127
12.01	Cost of the Work	127
12.02	Unit Price Work.....	130
Article 13	– Tests and Inspections; Correction, Removal, or Acceptance of Defective Construction	131
13.01	Access to Construction	131
13.02	Tests, Inspections, and Approvals.....	131
13.03	Uncovering Construction	132
13.04	Defective Construction	132
13.05	Owner May Correct Defective Construction.....	133
13.06	Costs	133
13.07	Owner’s Acceptance of Defective Construction	133
13.08	Owner May Stop Construction.....	133
Article 14	– Payments to Design-Builder; Completion	134
14.01	Progress Payments	134
14.02	Design-Builder’s Warranty of Title	136
14.03	Substantial Completion	136
14.04	Partial Use or Occupancy.....	137
14.05	Final Inspection	137
14.06	Final Payment.....	137
14.07	Waiver of Claims	138
14.08	Correction Period	138
Article 15	– Suspension of Work and Termination.....	139
15.01	Owner May Suspend Work.....	139
15.02	Owner May Terminate for Cause	139
15.03	Owner May Terminate for Convenience	140
15.04	Design-Builder May Stop Work or Terminate.....	140
Article 16	– disputes	141
16.01	Methods and Procedures	141

Article 17 – Miscellaneous 142

 17.01 Giving Notice 142

 17.02 Computation of Times 142

 17.03 Cumulative Remedies 142

 17.04 Limitation of Damages 142

 17.05 No Waiver 142

 17.06 Survival of Obligations 142

 17.07 Controlling Law 143

 17.08 Headings 143

GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

- A. Wherever used in the Contract Documents and printed with initial capital letters, the following terms have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*: Written or graphic instruments issued by Owner prior to the opening of Proposals which clarify, correct, or change the Request for Qualifications, Request for Proposals, or the proposed Contract Documents, including the Conceptual Documents.
 2. *Agreement*: The written instrument, executed by Owner and Design-Builder, that sets forth the Contract Price and Contract Times, identifies the parties, and designates the specific items that are Contract Documents.
 3. *Application for Payment*: The form which is to be used by Design-Builder during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Authorized Representative*: The individual designated by a party to represent it with respect to this Contract, as indicated in the Agreement.
 5. *Change Order*: A document which is signed by Design-Builder and Owner and authorizes an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 6. *Claim*: A demand or assertion by Owner or Design-Builder seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A request or proposal for a Change Order is not a Claim.
 7. *Conceptual Documents*: The documents prepared by or for the Owner to describe the Work to be performed, issued to Proposers during the design-builder selection process, and expressly identified in the Agreement.
 8. *Constituent of Concern*: Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other Laws or Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 9. *Construction*: The part of the Work that consists generally of making physical improvements at the Site, and is the result of performing or furnishing of labor, the

furnishing and incorporating of materials and equipment into the Work (including any correction of defective Construction), and the furnishing of services (other than Design Professional Services) and documents, all as required by the Contract Documents and Construction Drawings and Construction Specifications, as duly modified.

10. *Construction Drawings*: Documents prepared by or for Design-Builder, and approved by Owner for purposes of allowing Design-Builder to proceed with the Construction or specific portions of the Construction, and consisting of drawings, diagrams, illustrations, schedules, and other data that graphically show the scope, extent, and character of the Construction (or specific portions of the Construction) to be performed by or for Design-Builder. Construction Drawings are not Contract Documents.
11. *Construction Specifications*: Documents prepared by or for Design-Builder, and approved by Owner for purposes of allowing Design-Builder to proceed with the Construction or a specific portion of the Construction, and consisting of written requirements for materials, equipment, systems, standards, workmanship, and administrative procedures as applied to the Construction (or a specific portion of the Construction). Construction Specifications are not Contract Documents.
12. *Construction Subcontract*: A written agreement between Design-Builder and a Construction Subcontractor for provision of all or a portion of the Construction, and any delegated Design Professional Services.
13. *Construction Subcontractor*: An individual or entity (other than a Supplier) having a direct contract with Design-Builder or with any other Construction Subcontractor for the performance of a part of the Construction, and any delegated Design Professional Services.
14. *Contract*: The entire and integrated written agreement between Owner and Design-Builder concerning the Work.
15. *Contract Documents*: Those items so designated in the Agreement, and which together comprise the Contract.
16. *Contract Price*: The money that Owner has agreed to pay Design-Builder for completion of the Work in accordance with the Contract Documents.
17. *Contract Times*: The numbers of days or the dates stated in the Agreement to (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
18. *Design-Builder*: The individual or entity with which Owner has contracted for performance of the Work, as designated in the Agreement.
19. *Design Professional Services*: That part of the Work comprised of the furnishing of engineering, surveying, architecture, and other design services, and including but not limited to providing research, analysis, and conclusions regarding engineering and related matters; exercising professional judgment with respect to technical issues; the preparation of plans, reports, calculations, models, schematics, drawings, specifications, Design Submittals, the Construction Drawings, Construction Specifications, and other instruments of service; other services included in the Contract Documents and required to be performed by or under the responsible charge of licensed design professionals; and the review of shop drawings, observation of construction, response to requests for information or interpretation, analysis of the technical aspects of Change Orders, and

- other engineering and related professional services provided by or for licensed design professionals during Construction.
20. *Design Agreement:* A written agreement between Design-Builder and a design firm or entity for provision of Design Professional Services.
 21. *Design Submittal:* A Submittal that pursuant to Laws and Regulations or this Contract must be prepared by or under the supervision of a licensed engineer or other licensed design professional, including drawings, specifications, Construction Drawings, Construction Specifications, and revisions to such documents (but not including Record Documents).
 22. *Effective Date of the Contract:* The date indicated in the Agreement on which the Contract becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
 23. *Engineer:* The Project Design Professional identified as Engineer in the Agreement, and engaged by Design-Builder to provide engineering and related professional services under a Design Agreement.
 24. *Hazardous Environmental Condition:* The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
 25. *Laws and Regulations; Laws or Regulations:* Any and all applicable laws, statutes, rules, regulations, ordinances, binding resolutions, codes, decrees, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
 26. *Liens:* Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
 27. *Milestone:* A principal event in the performance of the Work that the Contract requires Design-Builder to achieve by an intermediate completion date or by a time prior to Substantial Completion of Construction.
 28. *Notice of Award:* The written notice by Owner to a Proposer stating that Owner will enter into the design-build contract with the Proposer.
 29. *Notice to Proceed:* A written notice by Owner to Design-Builder fixing the date on which the Contract Times will commence to run and on which Design-Builder shall start to perform the Work.
 30. *Owner:* The individual or entity with which Design-Builder has contracted regarding the Work, and which has agreed to pay Design-Builder for the performance of the Work, pursuant to the terms of the Contract.
 31. *Owner's Consultant:* An individual or entity with which the Owner has contracted to furnish services (typically including planning, preparation of Conceptual Documents, and advisory services) to Owner with respect to the Project, and which is identified as such in the Agreement.

32. *Owner's Site Representative:* A representative of Owner at the Site, as indicated in Paragraph 10.05.
33. *Project:* The total undertaking to be accomplished for Owner by engineers, consultants, Design-Builder, subcontractors, and others, including planning, study, design, construction, testing, start-up, and commissioning, and of which the Work to be performed under the Contract Documents is a part.
34. *Project Design Professionals:* The Engineer and any other independent entities or individuals, or employees of Design-Builder, engaged by Design-Builder or a Construction Subcontractor to provide Design Professional Services with respect to a portion of the Work.
35. *Proposal:* The documents submitted by Design-Builder in response to the Request for Proposals, setting forth technical concepts, proposed prices, and other conditions for the Work to be performed, and stating any proposed revisions, modifications, clarifications, exceptions, or supplements to the proposed Contract Documents.
36. *Proposal Amendment:* A Contract Document that is prepared after submittal of Design-Builder's Proposal; identifies mutually agreed revisions, modifications, exceptions, supplements, and clarifications to the Proposal or proposed Contract Documents; and is executed by Owner and Design-Builder.
37. *Proposer:* An entity that submits a Statement of Qualifications or Proposal to Owner.
38. *Record Documents:* The record copy of all Construction Drawings, Construction Specifications, Addenda, Change Orders, Work Change Directives, and approved Submittals maintained by Design-Builder at the Site, including any annotations to such documents made by Design-Builder during Construction.
39. *Record Drawings and Record Specifications:* Documents depicting the completed Project, or a specific portion of the completed Project, based on or comprised of the Record Documents delivered to Owner by Design-Builder at the completion of the Construction.
40. *Request for Proposals:* The document prepared by or for Owner specifying and describing Owner's objectives, the procedures to be followed in preparing and submitting a Proposal, and the process for evaluating Proposals and awarding a contract.
41. *Request for Qualifications:* The document prepared by or for Owner requesting that Proposers submit a Statement of Qualifications with respect to their candidacy for selection as Design-Builder.
42. *Schedule of Values:* A schedule, prepared and maintained by Design-Builder, allocating portions of the Contract Price to various portions of the Work, and used as the basis for reviewing Design-Builder's Applications for Payment.
43. *Site:* Lands or areas indicated in the Contract Documents as being furnished by Owner upon which Construction is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for use of Design-Builder.
44. *Statement of Qualifications:* The document submitted by a Proposer in response to the Request for Qualifications, including any completed forms, attachments, and exhibits.
45. *Submittal:* A written or graphic document, prepared by or for Design-Builder, which the Contract Documents require the Design-Builder to submit to the Owner. Submittals may

include reports, preliminary drawings and specifications, cost estimates, proposed Construction Drawings and Construction Specifications, progress schedules, cash flow projections, Schedules of Values, shop drawings, product data, samples, delegated designs, certifications, proposed modifications to the Construction Drawings and Construction Specifications, results of tests and evaluations, results of source quality control testing and inspections, results of field or Site quality control testing and evaluations, sustainable design information, information on special procedures, operations and maintenance data, sustainable design closeout information, record documents, records of spare parts and extra stock materials, and other such documents required by the Contract Documents. Submittals, whether approved or accepted by Owner or not, are not Contract Documents. Claims, notices, Change Orders, Applications for Payment, and requests for information/interpretation are not Submittals.

46. *Substantial Completion*: The time at which the Construction (or a specified part thereof) has progressed to the point where it is sufficiently complete, in accordance with the Contract Documents, so that the Construction (or the specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Construction refer to Substantial Completion thereof.
47. *Supplementary Conditions*: The part of the Contract Documents which amends or supplements these General Conditions.
48. *Supplier*: A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Design-Builder or with any Construction Subcontractor to furnish materials or equipment to be incorporated in the Work by Design-Builder or a Construction Subcontractor, and any lessor of rental equipment used by Design-Builder or a Construction Subcontractor during Construction at the Site.
49. *Technical Data*: Data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding (a) subsurface conditions at the Site, (b) physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), or (c) environmental conditions at the Site, that are set forth in any geotechnical or environmental report prepared for the Project and relied upon by Design-Builder in agreeing to a price (either stipulated, or a Guaranteed Maximum Price) that includes Construction.
50. *Underground Facilities*: All underground lines, pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems, including but not limited to those that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, fire or police signal systems, or traffic or other control systems; and any encasements containing such facilities or systems.
51. *Underground Facilities Data*: Information and data shown or indicated in the Contract Documents or otherwise provided to Design-Builder by Owner with respect to existing Underground Facilities at or adjacent to the Site.
52. *Unit Price Work*: Work to be paid for on the basis of unit prices.

53. *Work*: The entire design and construction or the various separately identifiable parts thereof required to be performed or furnished by Design-Builder under the Contract Documents. Work includes and is the result of performing or furnishing Design Professional Services and Construction required by the Contract Documents and all labor, services, and documentation necessary to produce such Design Professional Services and Construction; furnishing, installing, and incorporating all materials and equipment into such Construction; and related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
54. *Work Change Directive*: A written directive to Design-Builder, issued on or after the Effective Date of the Contract, signed by Owner, ordering an addition, deletion or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraph 1.02.B are not defined terms that require initial capital letters, but when used in the Contract Documents have the indicated meanings.
- B. *Intent of Certain Terms or Adjectives*:
1. The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.
 2. The word “defective,” when modifying the word “Construction” refers to Construction that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Owner’s final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion) provided that the defect was not caused by Owner.
 3. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 4. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials or equipment or equipment complete and ready for intended use.
 5. The words “perform” or “provide” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 6. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Design-Builder, “provide” is implied.
 7. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with that meaning.

ARTICLE 2 – PRELIMINARY MATTERS**2.01 Delivery of Bonds and Evidence of Insurance**

- A. *Bonds*: When Design-Builder delivers the executed Agreements to Owner, Design-Builder shall also deliver to Owner such Bonds as Design-Builder may be required to furnish in accordance with Paragraph 6.01.A.
- B. *Evidence of Insurance*: Before any Work is started, Design-Builder and Owner shall each deliver to the other those certificates of insurance that Design-Builder and Owner respectively are required to purchase and maintain in accordance with Article 6.

2.02 Copies of Documents

- A. Owner shall furnish to Design-Builder four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract. Owner shall make such original printed record version of the Contract available to Design-Builder for review.

2.03 Conceptual Documents

- A. *Design-Builder's Review of Conceptual Documents*:
 - 1. Design-Builder acknowledges that the Conceptual Documents furnished by Owner are preliminary and incomplete, and subject to stated limitations and reservations.
 - 2. Design-Builder shall carefully review, analyze, and verify the contents and suitability of the Conceptual Documents before proceeding with the Work (including but not limited to the Design Professional Services).
 - 3. Design-Builder shall promptly report in writing to Owner any conflict, error, ambiguity, or discrepancy that Design-Builder may discover in the Conceptual Documents, whether during such review or at any later point.
 - 4. Upon receipt of a report from Design-Builder that there is a conflict, error, ambiguity, or discrepancy in the Conceptual Documents, Owner shall either provide a written interpretation, clarification, or correction to Design-Builder, or authorize Design-Builder to correct or resolve the issue under a Change Order providing an equitable adjustment in Contract Times or Contract Price, or both.
 - 5. Design-Builder shall not proceed with any Work affected by a reported conflict, error, ambiguity, or discrepancy in the Conceptual Documents until the issue is resolved.
- B. Owner shall not be responsible for any deficiency in the Conceptual Documents that Design-Builder does not discover or report to Owner.
- C. Subject to the foregoing review and reporting obligations, Design-Builder may use the Conceptual Documents as a partial basis for performing or furnishing Design Professional Services, including the preparation of Design Submittals such as the Construction Drawings and Construction Specifications, but despite any such use of the Conceptual Documents the Design-Builder nonetheless shall be responsible to Owner for the quality and soundness of the Design Professional Services.

2.04 Before Starting the Work

- A. *Preliminary Schedules:* Within 10 days after commencement of the Contract Times (unless otherwise specified in the Contract Documents), Design-Builder shall submit the following to Owner for Owner's timely review:
1. A preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 2. A preliminary schedule of Submittals (including Design Submittals) which will list each required Submittal and the times for submitting, reviewing, and processing each Submittal;
 3. A preliminary Schedule of Values for all of the Work which will include quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work; and
 4. A preliminary cash flow projection estimating that portion of the Contract Price to be due during each month of performance.

2.05 Authorized Representatives

- A. The Authorized Representative for each party has been designated in the Agreement. A party may change its Authorized Representative at any time by giving notice to the other party of the name, mailing and delivery addresses, e-mail address, and telephone numbers of the new Authorized Representative.

2.06 Initial Conference

- A. Within 20 days after the Contract Times start to run, Design-Builder will arrange a conference attended by Owner and Design-Builder and others as appropriate to establish a working understanding among the parties as to the Work and to discuss the design concepts, schedules referred to in Paragraph 2.04.A, procedures for handling Submittals, processing Applications for Payment, maintaining required records, and other matters.

2.07 Review of Schedules

- A. Not less than 10 days before submission of the first Application for Payment (unless otherwise provided in the Contract Documents), Design-Builder will arrange a conference attended by Design-Builder, Owner, and others as appropriate to review and discuss the schedules submitted in accordance with Paragraph 2.04.A. Design-Builder shall have an additional 10 days after the conference to make corrections and adjustments and to complete and resubmit the schedules for Owner's acceptance. No progress payment shall be made to Design-Builder until Design-Builder submits schedules that comply with the following requirements:
1. Design-Builder's progress schedule shall provide an orderly progression of the Work to completion within any specified Milestones and the Contract Times.
 2. Design-Builder's schedule of Submittals shall provide a workable arrangement for submitting, reviewing, and processing Submittals in accordance with Article 8.
 3. Design-Builder's Schedule of Values shall provide a reasonable allocation of the Contract Price to component parts of the Work.

2.08 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the Owner and Design-Builder may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner and Design-Builder shall jointly develop such protocols.
- C. Unless expressly stated otherwise elsewhere in this Contract, Design-Builder shall not be obligated to furnish documents (including but not limited to Construction Drawings, Construction Specifications, or Record Drawings and Record Specifications) to Owner in any executable, native-file format.
- D. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Contract Documents

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. It is the intent of the Contract Documents to require the design and construction of a functionally complete project (or part thereof).
- C. Design-Builder shall prepare or furnish Construction Drawings and Construction Specifications that are in accord with the Contract Documents and that describe a functionally complete Project (or part thereof) to be constructed in accordance with such Construction Drawings and Construction Specifications, as duly modified.
- D. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
- E. Design-Builder will furnish or perform all labor, documentation, services (including professional services), materials, and equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called, for at no additional cost to Owner.

3.02 Reference Standards

- A. *Standards, Specifications, Codes, Laws or Regulations:*
 - 1. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect on the Effective Date except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard, specification, manual, or code, or instruction of a Supplier, shall be effective to change the duties and responsibilities of Owner, Design-

Builder, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Owner or its officers, directors, members, partners, employees, agents, consultants, or subcontractors any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Resolving Discrepancies

- A. If there is a discrepancy between (1) the Conceptual Documents or other Contract Documents issued with the Request for Qualifications or Request for Proposals and (2) the Proposal, the Proposal will control.
- B. If there is a discrepancy between (1) the Conceptual Documents, other Contract Documents issued with the Request for Qualifications or Request for Proposals, or the Proposal and (2) the Proposal Amendment, the Proposal Amendment will control.
- C. If there is a discrepancy between (1) the Contract Documents and (2) the Construction Drawings and Construction Specifications, the Contract Documents will control unless Design-Builder gave notice of the discrepancy in a Submittal, and Owner approved the Submittal, pursuant to the provisions of Article 8.

3.04 Ownership and Reuse of Documents

- A. All documents prepared for or furnished to Owner by Design-Builder pursuant to this Contract (including but not limited to Design Submittals) are instruments of service. With respect to such documents:
 - 1. Design-Builder shall have and retain the ownership, title, and property rights, including copyright, patent, intellectual property, and common law rights, in the documents.
 - 2. During the course of the Project, Design-Builder will provide copies of Design Submittals to Owner for purposes of review and comment. Owner may retain copies of such documents for its records.
 - 3. Owner may use its copy of the Record Drawings and Record Specifications for Owner's purposes in operating and maintaining the constructed facilities.
 - 4. Upon Owner's termination of this Contract for cause pursuant to Paragraph 15.02, Owner shall receive a limited, non-exclusive license to use any completed Design Submittals in continuing the Project, subject to the limitations in this Paragraph 3.04.
 - 5. The documents prepared or furnished by Design-Builder under this Contract, regardless of ownership, transfer, license, completion status, or termination of the Contract, are for Design-Builder's use, and are not intended or represented to be suitable for use on the Project by Owner or any party other than Design-Builder, or for reuse by Owner or others on extensions of the Project or on any other project, except as otherwise stated in this Contract. Any use or reuse by Owner or others on Owner's behalf will be at Owner's sole risk, and without liability or legal exposure to Design-Builder, the Project Design Professionals, or their subconsultants, and Owner shall indemnify and hold harmless Design-Builder, the Project Design Professionals, and their subconsultants from all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from any such use or reuse.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times

- A. The Contract Times will commence to run on the Effective Date of the Contract.

4.02 Starting the Work

- A. Design-Builder shall start to perform the Work as of the Effective Date of the Contract. No Construction shall be done at the Site prior to the Effective Date of the Contract.

4.03 Progress Schedule

- A. Owner may rely on the progress schedule established in accordance with Paragraph 2.04, as duly adjusted, in planning and conducting ongoing operations and other work at the Site.
- B. Design-Builder shall adhere to the progress schedule established in accordance with Paragraph 2.04 as it may be adjusted from time to time, as provided below:
1. Design-Builder shall submit to Owner proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Owner shall accept such adjustments provided that Owner, in planning and conducting ongoing operations and other work at the Site, has not reasonably relied on the schedule element that is proposed to be adjusted. If Owner has so relied, then Owner and Design-Builder shall promptly meet and seek a resolution that addresses the objectives of both parties, or adjust the Contract Price.
 2. Design-Builder shall submit proposed adjustments in the progress schedule that will change the Contract Times (including Milestones) in accordance with the requirements of Paragraph 11.06. Such adjustments may only be made by a Change Order.
- C. *Continuing the Work:* Design-Builder shall continue the Work and adhere to the progress schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as Design-Builder and Owner may otherwise agree in writing.

4.04 Delays in Design-Builder's Progress

- A. If Owner or anyone for whom Owner is responsible delays, disrupts, or interferes with the performance or progress of the Work, then Design-Builder shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Design-Builder's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Design-Builder's ability to complete the Work within the Contract Times.
- B. Design-Builder shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference within the control of Design-Builder. Delay, disruption, and interference attributable to and within the control of a Project Design Professional, Construction Subcontractor, or Supplier shall be deemed to be delays within the control of Design-Builder.
- C. If Design-Builder's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Design-Builder, and those for which they are responsible, then Design-Builder shall be entitled to an equitable adjustment in Contract Times. Design-Builder's entitlement to such an adjustment of the Contract Times is conditioned on such adjustment being essential to Design-Builder's ability to complete the Work within the Contract Times. Such an adjustment shall be Design-Builder's

sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. Abnormal weather conditions;
 3. Acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 9); and
 4. Acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 9.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Design-Builder shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Design-Builder.
- G. If Design-Builder seeks an adjustment in Contract Price or Contract Times under this paragraph, Design-Builder shall submit a request for a Change Order to Owner within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Design-Builder of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Design-Builder will have to comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Design-Builder with a current statement of record legal title and legal description of the lands upon which the Construction is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws or Regulations.
- C. Design-Builder shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

- A. *Limitation on Use of Site and Other Areas:*
 1. Design-Builder shall confine construction equipment, the storage of materials and equipment, and the operations of construction workers to the Site and other areas permitted by Laws or Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Design-Builder shall assume full responsibility for any damage to any such land or area, or to the owner

or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of Work, Design-Builder shall promptly settle with such other party by negotiation, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law.
 3. To the fullest extent permitted by Laws or Regulations, Design-Builder shall indemnify and hold harmless Owner, Owner's consultants, and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration or other dispute resolution costs) arising out of or resulting from any claim brought by any such owner or occupant against Owner, or any other party indemnified hereunder to the extent caused by or based upon Design-Builder's performance of the Construction.
- B. *Removal of Debris:* During the performance of the Construction, Design-Builder shall keep the premises free from accumulations of waste materials, rubbish, and other debris resulting from the Construction. Removal and disposal of such waste materials, rubbish, and other debris shall be to the Lycoming County Landfill. Waste materials, rubbish, and other debris associated with Work only from this project will be accepted at no cost.
- C. *Cleaning:* Prior to Substantial Completion, Design-Builder shall clean the Site and make it ready for utilization by Owner. At completion of Construction, Design-Builder shall remove all tools, appliances, construction equipment, temporary construction and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Design-Builder shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Design-Builder subject any part of the Construction or adjacent property to stresses or pressures that will endanger it.

5.03 Reference Points

- A. Design-Builder shall be responsible for laying out the Work and shall protect and preserve reference points and property monuments established by Owner, and shall make no changes or relocations of such reference points or monuments without the prior written approval of Owner. Design-Builder shall report to Owner whenever any reference point or property monument is lost or destroyed, or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

5.04 Differing Site Conditions

- A. Design-Builder shall promptly, and before the conditions are disturbed, give a written notice to Owner of (i) subsurface or latent physical conditions at the Site (whether discovered during investigation of the Site or during Construction) which differ materially from those indicated in the Contract Documents, or in any Technical Data, or (ii) unknown physical conditions at the Site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character called for by the Contract Documents.

- B. Owner will investigate the Site conditions promptly after receiving the notice. Design-Builder shall supplement the notice by promptly submitting to Owner any additional information regarding schedule and cost impacts, and a specific request for a Change Order. Owner shall then make a determination regarding the site condition and the impact, if any, on Contract Price and Contract Times. If the conditions do materially so differ and cause an increase or decrease in the Design-Builder's cost of, or the time required for, performing any part of the Work, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the Contract Price or Times modified in writing by Change Order in accordance with Article 11.
- C. No request by Design-Builder for an equitable adjustment under this Paragraph 5.04 shall be allowed unless Design-Builder has given the written notice required.
- D. The provisions of this Paragraph 5.04 are not intended to apply to a Hazardous Environmental Condition or Underground Facility uncovered or revealed at the Site.

5.05 Underground Facilities

- A. *Procedure for Identifying Underground Facilities:* Promptly after the Effective Date of the Contract, Design-Builder shall review the Underground Facilities Data furnished by Owner and use ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data," as a basis for establishing a procedure ("Underground Facilities Procedure") for the further identification, investigation, and mapping of Underground Facilities at or adjacent to the Site. Design-Builder shall establish and use the Underground Facilities Procedure to aid in the provision of Design Professional Services and the performance of Construction, and to reduce and manage risks associated with Underground Facilities. Such Underground Facilities Procedure shall take into account the Site and the nature of the Project.
 - 1. The Underground Facilities Procedure shall include a plan to keep Underground Facilities information current as Design-Builder proceeds with the provision of Design Professional Services, and to add new or relocated Underground Facilities information to the base utility or Site drawings.
 - 2. To manage the potential impact of design changes on Underground Facilities, Design-Builder shall modify or reapply the Underground Facilities Procedure as the design progresses and changes.
- B. *Design-Builder's Responsibilities:* Unless otherwise expressly provided in the Contract, Design-Builder shall have full responsibility for the following; and, subject to the provisions of Paragraphs 5.05.C, D, and E, the cost of all of the following will be included in the Contract Price:
 - 1. Establishing and executing the Underground Facilities Procedure referred to in Paragraph 5.05.A, including updating, modification, and reapplication duties;
 - 2. Coordinating the Work with the owners (including Owner) of such Underground Facilities, during the provision of Design Professional Services and Construction;
 - 3. Verifying the actual location of specific Underground Facilities through exposure, as needed for the Design Professional Services;
 - 4. Complying with applicable state and local utility damage prevention Laws and Regulations during Construction; and

5. The safety and protection of all existing Underground Facilities at the Site, and repairing any damage to such Underground Facilities resulting from the Construction, subject to the provisions of Paragraph 5.05.D.
- C. *Results of Design-Builder's Execution of Underground Facilities Procedure:* If, during the execution of the Underground Facilities Procedure referred to in Paragraph 5.05.A, the Design-Builder identifies an Underground Facility that was not shown or indicated in the Underground Facilities Data, or was not shown or indicated with reasonable accuracy, causing an increase or decrease in the Design-Builder's cost of, or the time required for, providing Design Professional Services or performing the Construction, then Design-Builder shall submit to Owner a request for a Change Order seeking an equitable adjustment to the Contract Price or Times under this clause. Such request shall be made within 30 days of the identification of the Underground Facility in question.
- D. *Underground Facility Found During Construction:* If Design-Builder believes that an Underground Facility that is uncovered, exposed, or revealed at the Site during Construction was not shown or indicated in the Underground Facilities Data, or was not shown or indicated with reasonable accuracy, and also that such Underground Facility was not identified or mapped with reasonable accuracy despite Design-Builder's adequate establishment and execution of the Underground Facilities Procedure referred to in Paragraph 5.05.A, then Design-Builder shall promptly give written notice to Owner, and supplement the notice by submitting to Owner a request for a Change Order seeking an equitable adjustment to the Contract Price or Times under this clause. Such request shall be made within 30 days of the uncovering or revealing of the Underground Facility in question.
1. *Owner's Review:* Owner will investigate the Underground Facility found during Construction promptly after receiving the notice. If Owner concurs with Design-Builder that the Underground Facility that is uncovered, exposed, or revealed at the Site was not shown or indicated in the Underground Facilities Data, or was not shown or indicated with reasonable accuracy, and further was not identified or mapped with reasonable accuracy despite Design-Builder's adequate establishment and execution of the Underground Facilities Procedure referred to in Paragraph 5.05.A, causing an increase or decrease in the Design-Builder's cost of, or the time required for, performing any part of the Work, whether or not changed as a result of the actual location, then an equitable adjustment shall be made under this clause and the Contract Price or Times modified in writing by Change Order in accordance with Article 11. If Owner does not concur with Design-Builder, then Owner shall so indicate in writing, with a specific explanation of the reason for non-concurrence.
 2. No request by Design-Builder for an equitable adjustment under Paragraph 5.05.D shall be allowed unless Design-Builder has given the written notice required.
- E. *Inadequate Establishment or Execution of Underground Facilities Procedure:* If Design-Builder does not establish an Underground Facilities Procedure that is (1) adequate for the Site and the nature of the Project and (2) consistent with the guidelines set forth in ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data," or Design-Builder does not adequately execute a duly established Underground Facilities Procedure, then Design-Builder shall bear all costs associated with the presence of an Underground Facility that was not identified or located with reasonable accuracy, including but not limited to delay, redesign, relocation, and increased Construction costs, if such Underground Facility

would have been identified and located with reasonable accuracy by an adequate and properly executed Underground Facilities Procedure that was consistent with ASCE 38.

5.06 Hazardous Environmental Conditions at Site

- A. *Reliance by Design-Builder on Technical Data Authorized:* Design-Builder may rely on the accuracy of the Technical Data with respect to environmental conditions at the Site.
- B. Design-Builder shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- C. Design-Builder shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Design-Builder, Project Design Professionals, Construction Subcontractors, Suppliers, or anyone else for whom Design-Builder is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- D. If Design-Builder encounters, uncovers, or reveals a Hazardous Environmental Condition (whether during Site investigation or during Construction) whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Design-Builder or anyone for whom Design-Builder is responsible creates a Hazardous Environmental Condition, then Design-Builder shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.16); and (3) notify Owner (and promptly thereafter confirm such notice in writing). Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take corrective action, if any, and take such actions as are necessary to permit Owner to timely obtain required permits and provide Design-Builder the written notice required by Paragraph 5.06.E. If Design-Builder or anyone for whom Design-Builder is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- E. Design-Builder shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Design-Builder either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- F. If after receipt of such written notice Design-Builder does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then the portion of the Work that is in the area affected by such condition shall be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 9.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Design-Builder, Project Design Professionals, Construction Subcontractors, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of

- each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Contract Documents or the Technical Data, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Design-Builder or by anyone for whom Design-Builder is responsible. Nothing in this Paragraph 5.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Design-Builder shall indemnify and hold harmless Owner and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the Design-Builder's failure to control, contain, or remove a Constituent of Concern brought to the Site by Design-Builder or by anyone for whom Design-Builder is responsible, or to a Hazardous Environmental Condition created by Design-Builder or by anyone for whom Design-Builder is responsible. Nothing in this Paragraph 5.06.H shall obligate Design-Builder to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

- A. Design-Builder shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Design-Builder's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due, or until completion of the correction period specified in Paragraph 14.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other specific provisions of the Contract. Design-Builder shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Design-Builder shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Design-Builder is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Design-Builder shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise

to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

- E. If Design-Builder has failed to obtain a required bond, Owner may exclude the Design-Builder from the Site and exercise Owner's termination rights under Article 15.
- F. Upon request to either Owner or Design-Builder from any Construction Subcontractor, Project Design Professional, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, the recipient of the request shall provide a copy of the payment bond to such person or entity.

6.02 Insurance—General Provisions

- A. Owner and Design-Builder shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Design-Builder shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. All insurance required by the Contract to be purchased and maintained by Design-Builder shall be primary and without contribution by insurance maintained by Owner.
- D. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly permitted in the Supplementary Conditions.
- E. Design-Builder shall require (a) its Construction Subcontractors and Engineer (and any other Project Design Professional that is an independent individual or entity) to purchase and maintain commercial general liability, automobile liability, workers' compensation, employer's liability, professional liability (as applicable), and umbrella or excess liability insurance, and (b) its Construction Subcontractors to purchase and maintain contractor's pollution liability insurance. All such required insurance shall meet the same requirements for the applicable category of insurance established in this Contract for Design-Builder, unless otherwise indicated in the Supplementary Conditions.
- F. Design-Builder shall deliver to Owner, with copies to each additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Design-Builder has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Design-Builder shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, documentation of applicable self-insured retentions (if permitted) and deductibles, and evidence of insurance required to be purchased and maintained by Design-Builder's Construction Subcontractors, Engineer, and any other Project Design Professional that is an independent individual or entity. Design-Builder may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- G. Owner shall deliver to Design-Builder, with copies to each additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Design-Builder or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- H. Failure of Owner or Design-Builder to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Design-Builder to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- I. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Design-Builder has failed to obtain and maintain required insurance, Owner may exclude the Design-Builder from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 15.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Design-Builder or Design-Builder's interests.
- M. The insurance and insurance limits required herein shall not be deemed as a limitation on Design-Builder's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Design-Builder's Insurance

- A. *Workers' Compensation and Employer's Liability:* Design-Builder shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. Claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. Claims for damages because of bodily injury, occupational sickness or disease, or death of Design-Builder's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).

- B. *Commercial General Liability—Claims Covered:* Design-Builder shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Design-Builder, on an occurrence basis, against:
1. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Design-Builder's employees.
 2. Claims for damages insured by reasonably available personal injury liability coverage.
 3. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Design-Builder's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Design-Builder shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Design-Builder's contractual indemnity obligations in Paragraph 7.19.
 3. Broad form property damage coverage.
 4. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Design-Builder demonstrates to Owner that the specified ISO endorsements are not commercially available, then Design-Builder may satisfy this requirement by providing equivalent endorsements.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, shall not include any of the following:
1. Any modification of the standard definition of "insured contract."
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs.
 4. Any exclusion of coverage relating to earth movement.
 5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability.

6. Any limitation or exclusion based on the nature of Design-Builder's work.
 7. Any professional liability exclusion broader in effect than ISO form CG 22 79 07 98.
- E. *Automobile liability:* Design-Builder shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- F. *Umbrella or excess liability:* Design-Builder shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall be procured on a "follow the form" basis as to each and every one of the underlying policies. Design-Builder may meet the combined limits of insurance (underlying policy plus applicable umbrella or excess) specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policies and an umbrella or excess liability policy that follows the form of the underlying policy, as specified herein.
- G. *Contractor's pollution liability insurance:* Design-Builder shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Design-Builder's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- H. *Additional insureds:* The Design-Builder's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and any individuals or entities identified as required additional insureds in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Design-Builder shall obtain all necessary endorsements to support these requirements.
- I. *Professional liability insurance:*
1. Design-Builder shall be responsible for purchasing and maintaining professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which Design-Builder is legally liable.
 2. If in the performance of this Contract any Design Professional Services, or other professional engineering or similar services, are to be performed by an independent design professional, under direct contract to Design-Builder or at any lower contractual tier, then Design-Builder shall be responsible for assuring that such independent design professional purchases and maintains professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the independent design professional is legally liable.
 3. If a Construction Subcontractor at any tier will provide or furnish design, engineering, or other similar professional services under this Contract, as the result of a delegation of

professional design responsibilities or otherwise, then Design-Builder shall assure that such Construction Subcontractor purchases and maintains applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable.

4. Any professional liability insurance required under this Contract shall be maintained throughout the duration of the Contract and for a minimum of three years after Substantial Completion. For each claims-made professional liability policy furnished and maintained to satisfy the requirements of this Paragraph 6.03.I, the retroactive date on the policy shall pre-date the commencement of furnishing services on the Project.

J. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:

1. Include at least the specific coverages provided in this Article.
2. Be written for not less than the limits of coverage provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
3. Contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days' prior written notice has been given to Design-Builder. Within 3 days of receipt of any such written notice, Design-Builder shall provide a copy of the notice to Owner and each other insured under the policy.
4. Remain in effect at least until final payment and Design-Builder's departure from the Site (and longer if expressly required elsewhere in this Contract), and at all times thereafter when Design-Builder may be correcting, removing, or replacing defective Construction as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
5. Provide applicable protection from claims that may arise out of or result from the performance of the Work, whether such performance is by Design-Builder, a Project Design Professional, any Construction Subcontractor or Supplier, or anyone directly or indirectly retained by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

6.04 Owner's Liability Insurance

- A. In addition to the liability insurance required to be provided by Design-Builder, the Owner, at Owner's option and expense, may purchase and maintain Owner's own liability insurance to protect Owner against claims which may arise with respect to the Project.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Design-Builder, and Design-Builder cannot rely upon Owner's liability policies for any of Design-Builder's obligations to the Owner or third parties.

6.05 Property Insurance

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Design-Builder shall purchase and maintain builder's risk insurance upon the Construction on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. Include the Owner and Design-Builder as named insureds, and all Construction Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
2. Be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Construction, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Design-Builder.
3. Cover, as insured property, at least the following: (a) the Construction (including but not limited to all buildings, structures, foundations, excavations, underground property, pilings, underground pipes, flues, drains, wiring, cables, and the like) and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into the Construction, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent Construction but which are intended to provide working access to the Site, or to the Construction, or which are intended to provide temporary support for the Construction, including scaffolding, form work, fences, shoring, lighting, cribbing, falsework, and temporary structures.
4. Cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. Extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. Extend to cover damage or loss to insured property while in transit.
7. Allow for partial occupation or use of the Construction by Owner, such that those portions of the Construction that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. Provide for the waiver of claims and waiver of the insurer's subrogation rights, as set forth in Paragraph 6.06.
9. Provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

10. Not include a co-insurance clause.
 11. Include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. Include performance/hot testing and start-up.
 13. Be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Construction by Owner, until the Construction is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days' prior written notice has been given to the purchasing policyholder. Within 3 days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Construction prior to Substantial Completion of all the Work as provided in Paragraph 14.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Design-Builder) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Construction that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Construction not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Design-Builder elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Design-Builder's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Design-Builder, a Construction Subcontractor, or an employee of Design-Builder or a Construction Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.
- G. *Loss of Use and Delay in Start-up:* Unless otherwise expressly stated elsewhere in this Contract, the Owner is responsible, at its option, for purchase and maintenance of insurance to protect Owner against the loss of use or delays in start-up caused by property damage.

6.06 Waiver of Rights

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against any Project Design Professional or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Design-Builder waive all rights against each other and the respective officers, directors, members,

- partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Construction; and, in addition, waive all such rights against the Project Design Professionals, their consultants, all Construction Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Design-Builder as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Design-Builder, the Project Design Professionals, and the Construction Subcontractors, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
1. Loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Construction caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. Loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 14.04, after Substantial Completion pursuant to Paragraph 14.03, or after final payment pursuant to Paragraph 14.06.
- C. Any insurance policy maintained by Owner covering any loss, damage, or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that the insured is allowed to waive the insurer's rights of subrogation against Design-Builder, Project Design Professionals, Construction Subcontractors, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, in a written contract executed prior to the loss, damage, or consequential loss.
- D. Design-Builder shall be responsible for assuring that each Construction Subcontract contains provisions whereby the Construction Subcontractor waives all rights against Owner, Design-Builder, all individuals or entities identified in the Supplementary Conditions as insureds, the Project Design Professionals, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Project.
- 6.07 Receipt and Application of Property Insurance Proceeds
- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall maintain such funds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Construction shall be repaired or replaced, the money so received applied on account thereof, and the Construction and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – DESIGN-BUILDER'S RESPONSIBILITIES

7.01 Design Professional Services

- A. Design-Builder shall provide the Design Professional Services needed to successfully perform and complete the Work required under this Contract.
- B. *Standard of Care:* The standard of care for all Design Professional Services performed or furnished by Design-Builder under this Contract will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality.

7.02 Construction

- A. Design-Builder shall perform and furnish the Construction pursuant to the Contract Documents, the Construction Drawings, and the Construction Specifications, as duly modified.
- B. Design-Builder shall keep Owner advised as to the progress of the Construction.

7.03 Supervision and Superintendence of Construction

- A. Design-Builder shall supervise, inspect, and direct the Construction competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to provide the Construction in accordance with the Contract Documents. Design-Builder shall be solely responsible for the means, methods, techniques, sequences, and procedures of Construction.
- B. At all times during the progress of Construction, the Design-Builder shall assign a competent resident superintendent who shall not be replaced without written notice to Owner except under extraordinary circumstances.

7.04 Labor; Working Hours

- A. Design-Builder shall provide competent, suitably qualified personnel to perform the Work as required by the Contract Documents. Design-Builder shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, and in the absence of any Laws or Regulations to the contrary, Design-Builder may perform the Construction on legal holidays, during any or all hours of the day, and on any or all days of the week, at Design-Builder's sole discretion.

7.05 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Design-Builder shall furnish or cause to be furnished and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified by Owner or in the Construction Drawings or Construction Specifications, and unless specified otherwise shall be new and of good quality. All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of Owner. If required by Owner, Design-Builder shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

7.06 "Or Equals" and Substitutions

- A. If an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, then during the preparation of the proposed Construction Drawings and Construction Specifications, the Design-Builder may request that Owner authorize the use of other items of material or equipment, or items from other proposed suppliers, by including the proposed items in the proposed Construction Drawings or Construction Specifications, with required notice to Owner that the Submittal contains a variation from the Contract Documents. Owner in its sole discretion may approve the use of the item if Owner determines that the item is functionally equal to that named and sufficiently similar so that no change in related Work will be required, taking into consideration whether the item:
 - 1. Is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2. Will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3. Has a proven record of performance and availability of responsive service; and
 - 4. Is not objectionable.
- B. *Effect of Owner's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- C. *Substitutes:* During the preparation of the proposed Construction Drawings and Construction Specifications, the Design-Builder may propose a substitute to an item of material or equipment that is required to be furnished by the Contract Documents. Any such proposal shall be made in a transmittal to Owner that is separate from and independent of any Design Submittals. The proposal shall describe the advantages, disadvantages, and changes in Contract Price or Contract Time associated with the proposed substitute. Approval of the

proposed substitute shall be at Owner's sole discretion. If approved, the substitute item shall be incorporated in the Construction Drawings and Construction Specifications.

- D. *Design Professional Review:* Before Design-Builder transmits its proposal to Owner, the Project Design Professional that designed the portion of the Work affected by the proposed "or equal" or substitute shall review and approve the proposal.
- E. *Construction Drawings and Construction Specifications:* "Or equal" or substitute proposals with respect to items of material or equipment that are required in the Construction Drawings and Construction Specifications shall be considered proposed modifications of the Construction Drawings and Construction Specifications, and shall be governed by the provisions of Paragraph 8.02.H.

7.07 Concerning Project Design Professionals, Construction Subcontractors, Suppliers, and Others

- A. Design-Builder may retain Project Design Professionals, Construction Subcontractors, and Suppliers for the performance of parts of the Work. Such Project Design Professionals, Construction Subcontractors, and Suppliers must be acceptable to Owner.
- B. Design-Builder shall retain specific Project Design Professionals, Construction Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required to do so by the Contract Documents (including but not limited to the Proposal Amendment) as of the Effective Date.
- C. Prior to entry into any binding Design Agreement, Construction Subcontract, or purchase order, Design-Builder shall submit to Owner the identity of the proposed Project Design Professional, Construction Subcontractor, or Supplier (unless Owner has already deemed such proposed contractual party acceptable, during the bidding process or otherwise). Such proposed contractual party shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- D. Owner may require the replacement of any Project Design Professional, Construction Subcontractor, Supplier, or other entity retained by Design-Builder to perform any part of the Work solely on the basis of substantive, reasonable objection after due investigation. Design-Builder shall submit an acceptable replacement for the rejected Project Design Professional, Construction Subcontractor, Supplier, or other entity.
- E. If Owner requires the replacement of any Project Design Professional, Construction Subcontractor, Supplier, or other entity retained by Design-Builder to perform any part of the Work, then Design-Builder shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement.
- F. No acceptance by Owner of Engineer or of any Project Design Professional, Construction Subcontractor, Supplier, or other entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- G. Design-Builder shall be fully responsible to Owner for all acts and omissions of the Project Design Professionals, Construction Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work, just as Design-Builder is responsible for Design-Builder's own acts and omissions.

- H. Design-Builder shall be solely responsible for scheduling and coordinating the services and work of the Project Design Professionals, Construction Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- I. Design-Builder shall restrict all Project Design Professionals, Construction Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating directly with Owner, except in case of an emergency or a matter involving public health, safety, or welfare, or as otherwise expressly allowed herein.
- J. Owner may furnish to any Project Design Professional, Construction Subcontractor, or Supplier, to the extent practicable, information about amounts paid to Design-Builder on account of Work performed for Design-Builder by the requesting party.
- K. Nothing in the Contract Documents:
 - 1. Shall create for the benefit of any Project Design Professional, Construction Subcontractor, Supplier, or other third-party individual or entity any contractual relationship between Owner and such third-party individual or entity; nor
 - 2. Shall create any obligation on the part of Owner to pay or to see to the payment of any money due any Project Design Professional, Construction Subcontractor, Supplier, or other third-party individual or entity except as may otherwise be required by Laws and Regulations.

7.08 Patent Fees and Royalties

- A. Design-Builder shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Conceptual Documents or other Contract Documents for use in the performance of the Construction, and if to the actual knowledge of Owner its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, then Owner has disclosed the existence of such rights to Design-Builder in the Conceptual Documents or other Contract Documents.
- B. To the fullest extent permitted by Laws or Regulations, Design-Builder shall indemnify and hold harmless Owner and Owner's Consultant, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the specification or incorporation in the Work of any invention, design, process, product or device, except those required by the Contract Documents.
- C. To the fullest extent permitted by Laws or Regulations, Owner shall indemnify and hold harmless Design-Builder and its officers, directors, members, partners, employees or agents, Project Design Professionals, Construction Subcontractors, and Suppliers from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device required by

the Contract Documents, but not identified by Owner as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

7.09 Permits and Utility Charges

- A. The Contract Documents allocate responsibility for obtaining and paying for specified permits, licenses, certificates of occupancy, and approvals of governmental authorities having jurisdiction over the Work. Each party shall assist the other, when necessary, in obtaining such permits, licenses, certificates, and approvals.
- B. Design-Builder shall pay all charges of utility owners for temporary service to the Work. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work, and for capital costs related thereto.

7.10 Taxes

- A. Design-Builder shall pay all sales, consumer, use, and other similar taxes required to be paid by Design-Builder in accordance with the Laws or Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 Laws and Regulations

- A. Design-Builder shall give all notices required by and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, Owner shall not be responsible for monitoring Design-Builder's compliance with any Laws or Regulations.
- B. If Design-Builder performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Design-Builder shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work.
- C. Changes in Laws or Regulations that occur after the date on which the Design-Builder committed to the Contract Price (whether by negotiation or making an offer or proposal) and affect the cost or time of performance shall be the subject of an equitable change in Contract Price or Contract Times.

7.12 Record Documents

- A. Design-Builder shall maintain the Record Documents in good order, in a safe place at the Site. Design-Builder shall annotate the Record Documents to show all changes and clarifications made (whether in the field or otherwise) during performance of Construction. The Record Documents, as annotated, will be available to Owner for reference. Upon completion of the Construction, Design-Builder shall deliver the Record Documents, as annotated, to Owner.
- B. After receipt and review of the Record Documents from Design-Builder upon completion of Construction, the Owner may comment on any possible inaccuracies. After Owner and Design-Builder collaboratively address any such comments, the Record Documents shall be deemed to be Record Drawings and Record Specifications.
- C. The Record Drawings and Record Specifications are Contract Documents, and are binding upon Design-Builder with respect to its obligations to comply with the Contract Documents, including but not limited to correction period responsibilities and warranty obligations.

7.13 Safety and Protection

- A. Design-Builder shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Construction Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Design-Builder shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
1. All persons on the Site or who may be affected by the Work;
 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation, or replacement in the course of Construction.
- B. Design-Builder shall comply with applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Design-Builder shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Design-Builder shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Design-Builder shall inform Owner of the specific requirements of Design-Builder's safety program with which Owner and its employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.13.A.2 or 7.13.A.3 caused, directly or indirectly, in whole or in part, by Design-Builder, any Construction Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Design-Builder.
- F. Design-Builder's duties and responsibilities for safety and for protection of the Construction shall continue until such time as all the Work is completed, Owner has issued a notice to Design-Builder in accordance with Paragraph 14.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion), and Design-Builder has left the Site.
- G. Design-Builder's duties and responsibilities for safety and protection shall resume whenever Design-Builder or any Construction Subcontractor, Supplier, or other representative returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 Safety Representative

- A. Design-Builder shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.15 Hazard Communication Programs

- A. Design-Builder shall be responsible for coordinating any exchange of safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.16 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Design-Builder is obligated to act to prevent threatened damage, injury or loss. Design-Builder shall give Owner prompt written notice if Design-Builder believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If a change in the Contract Documents is required because of the action taken by Design-Builder in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.17 Post-Construction Phase

- A. Design-Builder shall:
 - 1. Provide assistance in connection with the start-up and testing of any equipment or system.
 - 2. Assist Owner in training staff to operate and maintain the Work.

7.18 Design-Builder's General Warranty and Guarantee

- A. Design-Builder warrants and guarantees to Owner that Design-Builder will perform and complete the Construction as required by the Contract Documents, and that all Construction will be in accordance with the Contract Documents, the Construction Drawings, and the Construction Specifications (as duly modified in accordance with the Contract), and will not be defective.
- B. Design-Builder's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. Abuse, modification or improper maintenance or operation by persons other than Design-Builder, Construction Subcontractors, or Suppliers or any other individual for whom Design-Builder is responsible; or
 - 2. Normal wear and tear under normal usage.
- C. None of the following will constitute an acceptance by Owner of Work that is not in accordance with the Contract Documents or a release of Design-Builder's obligation to perform the Work in accordance with the Contract Documents, unless expressly stated otherwise in writing:
 - 1. Observations by Owner;
 - 2. The making of any progress or final payment;
 - 3. The issuance of a certificate of Substantial Completion;

4. Use or occupancy of the Work or any part thereof by Owner;
5. Any review and approval of a Submittal;
6. Any inspection, test, or approval by others; or
7. Any correction of defective Construction by Owner.

7.19 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, Design-Builder shall indemnify and hold harmless Owner, Owner's Consultant, and their officers, directors, members, partners, employees, agents, consultants, and subcontractors, from losses, damages, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Design-Builder, a Project Design Professional, any Construction Subcontractor, any Supplier, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors.
- B. In any and all claims or actions against Owner, Owner's Consultant, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Design-Builder, a Project Design Professional, any Construction Subcontractor, any Supplier, any individual or entity directly or indirectly employed or retained by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.19.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Design-Builder, a Project Design Professional, or any Construction Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Design-Builder under Paragraph 7.19.A shall not extend to the liability of Owner's Consultant, other consultants or design professionals of Owner, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, designs, or specifications.

ARTICLE 8 – SUBMITTALS

8.01 Design-Builder's Preparation of Submittals

- A. Design Submittals shall be prepared by Project Design Professionals, on behalf of Design-Builder.
- B. The appropriate Project Design Professional shall review and approve each Submittal (including but not limited to all Design Submittals), other than those Submittals not involving technical or engineering matters, before Design-Builder's transmittal of such Submittal to Owner. Such review and approval shall account for the following, as appropriate:
 1. That any items covered by such Submittal will, after installation or incorporation in the Construction, comply with the information and requirements in the Contract Documents

- and the Construction Drawings and Construction Specifications, as duly modified, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, Construction Drawings, and Construction Specifications, as duly modified.
2. That if the Submittal includes any proposed modification of the Contract Documents, Construction Drawings, or Construction Specifications, or any proposed variation from the requirements of such documents, such proposed modification or variation is acceptable based on the standards of the engineering profession (or other applicable design profession), and if implemented will be supported by signing or sealing by a licensed design professional, as necessary.
- C. Before Design-Builder's transmittal of a Submittal to Owner, the Design-Builder shall, as applicable:
1. Review and coordinate the Submittal with other Submittals and with the requirements of the Work, the Contract Documents, the Construction Drawings, and the Construction Specifications, as duly modified;
 2. Determine and verify all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal, and confirm that the Submittal is complete with respect to all related data included in the Submittal;
 3. Determine and verify the suitability of proposed materials and equipment with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation; and
 4. Determine and verify all information relative to Design-Builder's responsibilities for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
- D. Design-Builder shall give Owner specific written notice of any proposed modification of the Contract Documents, Construction Drawings, or Construction Specifications, and any variations that a Submittal may have from the requirements of the Contract Documents, Construction Drawings, and Construction Specifications, as duly modified. This notice shall be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Submittal in drawing form, by a specific notation made on the drawing itself.
- E. Each Submittal shall bear a stamp or specific written certification by Design-Builder that it has satisfied its obligations under the Contract Documents with respect to preparation of the Submittal, and that Design-Builder approves the Submittal.
- F. All Submittals must be acceptable based on compliance with form and content requirements of the Contract Documents. Design-Builder shall submit Design Submittals for Owner's review and approval. Other Submittals shall not require express approval, except as indicated in the Supplementary Conditions or elsewhere in the Contract Documents.
- 8.02 Owner's Review of Submittals
- A. Owner will review all Submittals, and may comment on any Submittal. Any response to a Submittal by Owner shall be in accordance with the schedule of required Submittals accepted by Owner as required by Paragraph 2.07, and the provisions of the Contract Documents.

- B. For those Submittals requiring Owner's review and approval, Owner's response will be in writing and will indicate either that Owner approves the Submittal or rejects the Submittal. Owner may also include comments regarding the approved or rejected Submittal. For those Submittals that do not require approval, the Submittal shall be deemed acceptable to Owner unless Owner responds with a timely objection or adverse comment.
- C. Unless a specific provision of the Contract Documents expressly provides otherwise, Owner's review of a Submittal will be to determine if the Submittal complies with and is consistent with the Contract Documents. If Owner concludes that a Submittal requiring approval complies with and is consistent with the Contract Documents, the Owner shall approve such Submittal.
- D. Owner's approval, rejection, or acceptance of a Submittal will not extend to the means, methods, techniques, sequences, or procedures of Construction, or to safety precautions or programs incident thereto.
- E. Owner's review, comments, approval, rejection, or acceptance of Submittals shall not relieve Design-Builder from responsibility for (1) performance of the Work in accordance with the Contract Documents, (2) the scheduling and progress of the Work, (3) the means, methods, sequences, techniques, and procedures of Construction, and safety precautions and programs incident thereto, or (4) any variation from the requirements of the Contract Documents, unless Design-Builder has in a separate written communication at the time of submission called Owner's attention to each such variation, and Owner has given written approval of each such variation; nor shall Owner's review, comments, approval, rejection, or acceptance of a Submittal impose any such responsibility on Owner.
- F. Construction tasks and expenditures by Design-Builder prior to Owner's review and approval or acceptance of any Submittal will be at the sole risk of Design-Builder.
- G. In reviewing, approving, rejecting, accepting, or commenting on any Design Submittal, Owner does not assume responsibility for the design, for any deficiencies in the Design Submittal or in the Design Professional Services by which they were prepared, or for constructability, cost, or schedule problems that may arise in connection with the Design Submittal.
- H. The parties acknowledge that Design-Builder's design responsibilities continue after commencement of Construction. During the course of Construction, the Design-Builder may propose modifications to the Construction Drawings and Construction Specifications. Owner shall approve such proposed modifications if (1) they comply with and are consistent with the Contract Documents, (2) Design-Builder has demonstrated that the modification is minor in character, or will not be detrimental to the quality and function of the Work, (3) the appropriate Project Design Professional has reviewed and approved the proposed modification with respect to any technical or engineering matters, and (4) Owner has not relied on the previously-approved Construction Drawings and Construction Specifications, such that the proposed modification would be detrimental to the Owner's interests. At its option, Owner may also approve more substantial or divergent proposed modifications, provided that the appropriate Project Design Professional has reviewed and approved the proposed modification with respect to any technical or engineering matters.

ARTICLE 9 – OTHER CONSTRUCTION**9.01 Other Work**

- A. In addition to and apart from the Work to be performed and furnished by Design-Builder under the Contract Documents, the Owner may perform other construction work at or adjacent to the Site during the course of the Project. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Design-Builder written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work at or adjacent to the Site, Owner shall provide such information to Design-Builder.
- C. Design-Builder shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and to Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Design-Builder shall do all cutting, fitting, and patching of the Construction that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Design-Builder shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Design-Builder may cut or alter others' work with the written consent of Owner and the others whose work will be affected.
- D. If the proper execution or results of any part of the Construction depends upon work performed by others under this Article 9, Design-Builder shall inspect such other work and promptly report to Owner in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of the Construction. Design-Builder's failure to so report will constitute an acceptance of such other work as fit and proper for integration with the Construction, except for latent defects and deficiencies in such other work.

9.02 Coordination

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Design-Builder prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.

- B. If the Supplementary Conditions do not identify the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors, Owner shall have sole authority and responsibility for such coordination.

9.03 Legal Relationships

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Construction or to the property of Design-Builder or the Construction Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Construction, through actions or inaction, then Design-Builder shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Design-Builder in the Contract Documents, and any provisions in Laws or Regulations concerning utility action or inaction, or related remedies. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Design-Builder assigning to Owner all Design-Builder's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Design-Builder's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Design-Builder's ability to complete the Work within the Contract Times.
- B. Design-Builder shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Design-Builder fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Design-Builder, and assign to such other contractor or utility owner the Owner's contractual rights against Design-Builder with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Design-Builder shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Design-Builder's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Design-Builder.
- D. If Design-Builder damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Design-Builder's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Design-Builder's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Design-Builder or Owner, then Design-Builder shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and its officers, directors, members, partners, employees, agents, consultants and subcontractors from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other

dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 10 – OWNER’S RESPONSIBILITIES

10.01 General

- A. Owner shall do the following in a timely manner so as not to delay the services of Design-Builder:
1. If requested in writing by Design-Builder, furnish reasonable evidence satisfactory to Design-Builder that sufficient funds are available and committed for the entire cost of the Project. Unless such reasonable evidence is furnished, Design-Builder is not required to commence or continue any Work, or may, if such evidence is not presented within a reasonable time, stop Work upon 15 days’ notice to the Owner;
 2. Make payments to Design-Builder promptly when they are due, as provided in Paragraph 14.01 and 14.06;
 3. Furnish the Site as set forth in Paragraph 5.01; arrange for safe access to and make all provisions for Design-Builder to enter upon public and private property as may reasonably be required for Design-Builder to perform Work under the Contract.
 4. Furnish to Design-Builder, as required for performance of the Work, the following, all of which Design-Builder may use and rely upon in performing services under this Agreement:
 - a. Environmental assessment and impact statements;
 - b. Property, boundary, easement, right-of-way, and other special engineering surveys or data;
 - c. Property descriptions;
 - d. Zoning, deed, and other land use restrictions;
 - e. Utility and topographic mapping and surveys;
 - f. Explorations and tests of subsurface conditions at or adjacent to the Site; geotechnical reports and investigations; drawings of physical conditions relating to existing surface or subsurface structures at the Site; any information or data known to Owner concerning underground facilities at the Site; hydrographic surveys, laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data;
 - g. Any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Site;
 - h. Engineering surveys to establish reference points which in Owner’s judgment are necessary to enable Design-Builder to proceed with the Work;
 - i. Assistance to Design-Builder in filing documents required to obtain necessary permits, licenses, and approvals of governmental authorities having jurisdiction over the Project; and
 - j. Permits, licenses, and approvals of government authorities that the Contract Documents expressly require Owner to obtain.

5. Provide information known to Owner relating to the presence of materials and substances at the Site that could create a Hazardous Environmental Condition.
- B. If an obligation ascribed to Owner in Paragraph 10.01.A is expressly assigned to Design-Builder, in the description of the Work or elsewhere in the Contract Documents, then such express assignment to Design-Builder shall supersede the provision in Paragraph 10.01.A.
- C. Recognizing and acknowledging that Design-Builder's services and expertise do not include the following services, Owner shall furnish or obtain, as required for the Project:
 - a. Accounting, bond and financial advisory (including, if applicable, "municipal advisor" services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.
 - b. Legal services with regard to issues pertaining to the Project as Owner requires, or Design-Builder reasonably requests.
 - c. Such auditing services as Owner requires to review cost submittals or ascertain how or for what purpose Design-Builder has used the money paid.
- D. Examine all studies, reports, alternate solutions, sketches, drawings, specifications, proposals, Submittals (including Design Submittals), and other documents presented by Design-Builder (including obtaining advice of an attorney, insurance counselor, and other consultants as Owner deems appropriate with respect to such examination), and if a decision is required with respect to any such document, render such decision in writing pursuant to any specific schedule, or if no specific schedule pertains, within a reasonable time after receipt of the document.

10.02 Insurance

- A. Owner's responsibilities with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

10.03 Limitations on Owner's Responsibilities

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Design-Builder's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Design-Builder to comply with Laws or Regulations applicable to the furnishing or performance of the Work. Owner will not be responsible for Design-Builder's failure to perform the Work in accordance with the Contract Documents.

10.04 Undisclosed Hazardous Environmental Condition

- A. Owner's responsibility with respect to undisclosed Hazardous Environmental Conditions uncovered or revealed at the Site is set forth in Paragraph 5.06.

10.05 Owner's Site Representative

- A. Owner may furnish an Owner's Site Representative to observe the performance of Construction. The duties, responsibilities and limitations of authority of any such Owner's Site Representative and assistants will be as provided in the Supplementary Conditions.

10.06 Owner's Consultants and Managers

- A. Owner's Consultant, if any, is identified in the Agreement.
- B. Owner shall advise Design-Builder of the identity and scope of services of any other independent consultants or managers retained by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, constructability review, program management, project management, or contract administration.
- C. Neither Owner's Consultant, Owner's Site Representative, nor any other consultant or manager retained by Owner, has any duties, responsibilities, or authorities with respect to Design-Builder, unless expressly provided in this Contract. Owner's Consultant and such other consultants and managers shall not supervise, direct, or have control or authority over, nor be responsible for, Design-Builder's means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of Design-Builder to comply with Laws or Regulations applicable to the furnishing or performance of the Work; and will not be responsible for Design-Builder's failure to perform the Work in accordance with the Contract Documents.

10.07 Safety Programs

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Design-Builder's safety programs of which Owner has been informed pursuant to Paragraph 7.13.D.
- B. Owner shall inform Design-Builder of any specific requirements of safety or security programs that are applicable to Design-Builder while at the Site.

10.08 Permits and Approvals

- A. Owner shall obtain reviews, approvals, certificates, and permits from governmental authorities having jurisdiction over the Project as indicated in the Contract Documents.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended or supplemented by a Change Order or a Work Change Directive.
 1. *Change Orders*: If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 2. *Work Change Directives*: The Work modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order. When a Work Change Directive is issued, the parties will promptly meet to attempt to negotiate the Work Change Directive's effect, if any, on the Contract Times and Contract Price. The effect, if any, on Contract Times and Contract Price, together with the Work Change Directive's addition, deletion, or revision to the Work, will be set forth in a subsequently issued Change Order.

- B. Either Owner or Design-Builder may propose or request a Change Order. With respect to certain events, this Contract may indicate specific times in which such requests or proposals must be submitted to the other party. With respect to all other events, the request or proposal shall be submitted to the other party within 30 days of the event giving rise to the request or proposal.

11.02 Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, and notwithstanding any other provision of the Contract, Owner may, at any time or from time to time, order or authorize additions, deletions, or revisions in the Work within the general scope of the Contract. Such changes may be accomplished by a Change Order, if Owner and Design-Builder have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Design-Builder shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Design-Builder to undertake work that Design-Builder reasonably concludes cannot be performed in a manner consistent with Design-Builder's safety or professional obligations under the Contract Documents or Laws and Regulations.

11.03 Unauthorized Changes in the Work

- A. Design-Builder shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents, as duly amended, except in the case of an emergency as provided in Paragraph 7.16, or in the case of uncovering Construction as provided in Paragraph 13.03.A.3.

11.04 Changes Involving the Design

- A. To the extent a change, whether proposed by Design-Builder or Owner, ordered by Owner, or set forth in a proposed Change Order or in a Work Change Directive, involves the design (as set forth in the Construction Drawings, Construction Specifications, or otherwise) or other engineering or technical matters, such changes must be reviewed and approved by the applicable Project Design Professional. The review and approval may occur at the time the change occurs, or as part of Design-Builder's provision of Professional Design Services in response to the change.

11.05 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim regarding an adjustment in the Contract Price shall be presented by written notice to the other party in accordance with Paragraph 16.01.
- B. If the Contract Price is based on Cost of the Work, then the provisions in the Agreement regarding Cost of the Work and changes in the Design-Builder's fee, Contract Price, Guaranteed Maximum Price, and Guaranteed Maximum Fee, apply.
- C. The value of any Work covered by a Change Order or of any adjustment in the Contract Price will be determined as follows:
 - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 12.02); or

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.05.D); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents, and agreement to a lump sum is not reached under Paragraph 11.05.C.2, then on the basis of the Cost of the Work for price adjustments (determined as provided in the Cost of the Work provisions in the Agreement, if applicable, or in Paragraph 12.01), plus a Design-Builder's Fee for overhead and profit (determined as provided in Paragraph 11.05.D).
- D. *Design-Builder's Fee:* The Design-Builder's fee for overhead and profit on Change Orders shall be determined as follows:
1. A mutually acceptable fixed fee; or
 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 12.01.B.1.a. and 12.01.B.2, the Design-Builder's fee shall be 15 percent;
 - b. For costs incurred under Paragraph 12.01.B.3, 12.01.B.4, 12.01.B.5, and 12.01.B.6, the Design-Builder's fee shall be 5 percent;
 - c. With respect to Construction Subcontracts, where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of this Contract is that the Design-Builder's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraph 12.01 by the subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Design-Builder itself, and to any Construction Subcontractors of a tier higher than that of the Construction Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Construction Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Construction Subcontractor that actually performs the Work;
 - d. With respect to Design Agreements, the Engineer or other invoicing Project Design Professional under a Design Agreement may add a fee of 5 percent to an invoice from a lower tier design entity, and Design-Builder may add a fee of 5 percent to an invoice from Engineer or other invoicing Project Design Professional; Owner shall not be responsible for any other mark-up at any tier (other than those incorporated in a factor, multiplier, hourly rate, or stipulated sum from the entity performing the subject Design Professional Services);
 - e. No fee will be payable on the basis of costs itemized in Paragraph 12.01.B.7 or 12.01.C;
 - f. The amount of credit to be allowed by Design-Builder to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Design-Builder's fee by an amount equal to 5 percent of such net decrease; and

- g. When both additions and credits are involved in any one change, the adjustment in Design-Builder's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.05.D.2.a through 11.05.D.2.e., inclusive.

11.06 Change of Contract Times

- A. The Contract Times may only be changed by a Change Order. Any Claim regarding an adjustment of the Contract Times shall be presented by written notice to the other party pursuant to Paragraph 16.01.
- B. Design-Builder's entitlement to an adjustment of the Contract Times under this Contract is conditioned on such adjustment being essential to Design-Builder's ability to complete the Work within the Contract Times.

11.07 Execution of Change Orders

- A. Owner and Design-Builder shall execute appropriate Change Orders covering:
 - 1. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Design-Builder has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's correction of defective Work under Paragraph 13.05 or Owner's acceptance of defective Work under Paragraph 13.07, or (c) agreed to by the parties (all subject to the need for review and approval by the applicable Project Design Professional pursuant to Paragraph 11.04); and
 - 4. Changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Article 16.
- B. If Owner or Design-Builder refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 Notice to Sureties

- A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be Design-Builder's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – COST OF THE WORK ADJUSTMENTS; UNIT PRICE WORK

12.01 Cost of the Work

- A. *Costs of the Work Adjustment:* When the price of Work covered by a Change Order or an adjustment in Contract Price is to be determined on the basis of Cost of the Work, the Cost of the Work adjustment means the sum of all costs necessarily incurred and paid by Design-Builder in the proper performance of the specific portion of the Work. The costs to be reimbursed to Design-Builder will be only those additional or incremental costs required because of the change of the Work or because of the event giving rise to the adjustment. If

the Agreement contains Cost of the Work provisions, such provisions shall govern in determining the Cost of the Work for Change Order or adjustment purposes. If the Agreement does not contain Cost of the Work provisions, then the provisions in Paragraph 12.01 shall apply.

- B. *Costs Included:* The Cost of the Work adjustment does not include any of the costs itemized in Paragraph 12.01.C, and shall include only the following items with respect to the subject Work:
1. Payroll costs for employees in the direct employ of Design-Builder in the performance of the subject Work, under schedules of job classifications agreed upon by Owner and Design-Builder in advance of such performance.
 - a. Such employees shall include without limitation superintendents, foremen, and other personnel employed full-time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the subject Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto. The expenses of performing the subject Work outside the hours or days permitted by this Contract shall be included in the above to the extent such performance of Work is authorized by Owner.
 - b. Such employees shall also include engineers, engineering technicians, architects, and others providing Design Professional Services as employees of Design-Builder. For purposes of this Paragraph 12.01.B.1.b, Design-Builder shall be entitled to payment for such employees an amount equal to salary costs times a factor, as designated in the Agreement, for services in the performance of the subject Work.
 2. Cost of all materials and equipment furnished and incorporated in the subject Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Design-Builder unless Owner deposits funds with Design-Builder with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Design-Builder shall make provisions so that they may be obtained.
 3. Cost of permits obtained by Design-Builder.
 4. Payments made by Design-Builder to Construction Subcontractors for subject Work performed or furnished by such Construction Subcontractors. If any subcontract provides that the Construction Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Construction Subcontractor's Cost of the Work and fee shall be determined in the same manner as Design-Builder's Cost of the Work and fee.
 5. Payments made by Design-Builder for Design Professional Services provided or furnished with respect to the subject Work under a Design Agreement.
 6. Costs of special consultants (not including Project Design Professionals), including but not limited to testing laboratories, attorneys, and accountants, retained for services specifically related to the subject Work.

7. Supplemental costs including the following items:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Design-Builder's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the Site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed that remain the property of Design-Builder.
 - c. Rentals of all construction or engineering equipment and machinery, and their parts, whether rented from Design-Builder or from others in accordance with rental agreements approved by Owner, and the costs of transportation, loading, unloading, installation, dismantling and removal of such equipment, machinery, and parts. All such costs shall be in accordance with the terms of such rental agreements. The rental of any such equipment, machinery, or parts shall cease when its use is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the subject Work, and for which Design-Builder is liable, imposed by Laws or Regulations.
 - e. Deposits lost for causes other than negligence of Design-Builder, any Construction Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses, damages, and related expenses caused by damage to the subject Work not compensated by insurance or otherwise, sustained by Design-Builder in connection with the furnishing and performance of the Work provided they have resulted from causes other than the negligence of Design-Builder, any Construction Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Design-Builder's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site, as applicable to the subject Work.
 - h. Minor expenses such as long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. Cost of premiums for all Bonds and insurance Design-Builder is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
 1. Payroll costs and other compensation of Design-Builder's officers, executives, principals (of partnerships and sole proprietorships), general managers, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Design-Builder whether at the Site or in Design-Builder's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in

- Paragraph 12.01.B.1, all of which are to be considered administrative costs covered by the Design-Builder's fee.
2. Expenses of Design-Builder's principal and branch offices other than Design-Builder's office at the Site.
 3. Any part of Design-Builder's capital expenses, including interest on Design-Builder's capital employed for the subject Work and charges against Design-Builder for delinquent payments.
 4. Costs due to the negligence of Design-Builder, any Construction Subcontractor, Engineer or other Project Design Professionals, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind, and the costs of any item not specifically and expressly included in Paragraph 12.01.B.
- D. *Design-Builder's Fee:* When the value of the Work covered by a Change Order is determined on the basis of Cost of the Work, Design-Builder's fee shall be determined as set forth in Paragraph 11.05.D.
- E. *Documentation:* Whenever the cost of any Work is to be determined pursuant to Paragraph 12.01.B and 12.01.C, Design-Builder will establish and maintain cost records in accordance with generally accepted accounting practices and submit in a form acceptable to Owner an itemized cost breakdown together with supporting data.

12.02 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all of Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Design-Builder will be made by Owner.
- B. If Design-Builder's compensation is based on Cost of the Work, this Contract will not include compensation under unit prices unless expressly stated otherwise.
- C. Each unit price will be deemed to include an amount considered by Design-Builder to be adequate to cover Design-Builder's overhead and profit for each separately identified item.
- D. Design-Builder or Owner may seek an adjustment in the Contract Price if:
 1. The quantity of any item of Unit Price Work performed by Design-Builder differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 2. Such an adjustment would not duplicate, and is coordinated with, any other related adjustments of Contract Price; and
 3. Design-Builder has incurred additional expense, or less expense, as a result of the variation in quantity.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE CONSTRUCTION**13.01 Access to Construction**

- A. Owner, Owner's Consultant, Owner's Site Representative, and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Construction at reasonable times for their observation, inspecting, and testing. Design-Builder shall provide them proper and safe conditions for such access and advise them of Design-Builder's Site safety procedures and programs so that they may comply therewith as applicable.

13.02 Tests, Inspections, and Approvals

- A. Design-Builder shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. By the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. By Laws and Regulations, unless the Contract Documents or Laws and Regulations expressly allocate responsibility for a specific inspection or test to Owner;
 3. To attain Owner's acceptance of materials or equipment to be incorporated in the Construction;
 4. By manufacturers of equipment furnished under the Contract Documents;
 5. To meet the requirements of the Construction Drawings and Construction Specifications;
 6. For testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Construction; and
 7. For acceptance of materials, mix designs, or equipment submitted for approval prior to Design-Builder's purchase thereof for incorporation in the Construction.
- B. Owner shall be responsible for arranging, obtaining, and paying for all inspections and tests expressly required by the Contract Documents or Laws and Regulations to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Construction shall be governed by the provisions of Paragraph 13.03.
- C. All inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Design-Builder.
- D. If the Contract Documents require the Construction (or part thereof) to be approved by Owner or another designated individual or entity, then Design-Builder shall assume full responsibility for arranging and obtaining such approvals.
- E. Design-Builder shall give Owner reasonable notice of the planned schedule for all required inspections, tests, and approvals.
- F. Design-Builder shall give Owner timely notice of readiness of the Construction (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- G. Each party shall provide the other with copies of any certificates of inspection or approval obtained with respect to tests and inspections.

- H. Both parties may rely on the results of inspections and tests, performed pursuant to this paragraph and the governing provisions of the Contract Documents, Laws and Regulations, and the Construction Drawings and Construction Specifications.
- I. If any Construction (or the construction work of others) that is required to be inspected, tested, or approved is covered by Design-Builder without written concurrence of Owner, then Contractor shall, if requested by Owner, uncover such Construction for observation. Such uncovering shall be at Design-Builder's expense unless Design-Builder has given Owner timely notice of Design-Builder's intention to cover the same and Owner has not acted with reasonable promptness in response to such notice.

13.03 Uncovering Construction

- A. If Owner considers it necessary or advisable that covered Construction be observed by Owner or inspected or tested by others, then Design-Builder, at Owner's request, shall uncover, expose or otherwise make available for observation, inspection, or testing, as Owner may require, that portion of the Construction in question, furnishing all necessary labor, material, and equipment.
 - 1. If the Construction had been covered contrary to the written request of Owner or a requirement of the Contract Documents, then uncovering it for Owner's observation and re-covering it shall be at Design-Builder's expense, regardless of whether it is defective.
 - 2. If it is found that the covered Construction is defective, Design-Builder shall pay all costs and damages caused by or resulting from such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement, re-covering, or reconstruction (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals, all court or arbitration or other dispute resolution costs, and all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price.
 - 3. If the covered Construction is not found to be defective, Design-Builder shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, re-covering, and reconstruction, subject to the provisions of Paragraph 13.03.A.1.

13.04 Defective Construction

- A. It is Design-Builder's obligation to assure that the Construction is not defective.
- B. Owner shall give Design-Builder prompt written notice of all defective Construction of which Owner has actual knowledge. Owner may reject, accept, or correct defective Construction.
- C. Promptly after receipt of written notice of defective Construction, unless Owner expressly indicates that it will accept the defective Construction, Design-Builder shall correct all such defective Construction, whether or not fabricated, installed, or completed; or, if Owner has rejected the defective Construction, remove it from the Project and replace it with Construction that is not defective.
- D. When correcting defective Construction, Design-Builder shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Construction.

13.05 Owner May Correct Defective Construction

- A. If Design-Builder fails within a reasonable time after written notice from Owner to correct defective Construction or to remove and replace rejected Construction, or if Design-Builder fails to perform the Construction in accordance with the Contract Documents, or if Design-Builder fails to comply with any other provision of the Contract Documents, Owner may, after 7 days' written notice to Design-Builder, correct and remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.05 Owner shall proceed expeditiously. In connection with such corrective and remedial action, Owner may exclude Design-Builder from all or part of the Site, take possession of all or part of the Construction, and suspend Design-Builder's services related thereto, and incorporate in the Construction all materials and equipment stored at the Site or for which Owner has paid Design-Builder but which are stored elsewhere. Design-Builder shall allow Owner, Owner's Consultant, Owner's Site Representative, and Owner's other representatives, agents, employees, and contractors, access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

13.06 Costs

- A. Design-Builder shall bear all costs arising out of or relating to the correction, removal, or replacement of defective Construction, including but not limited to repair of adjacent Work or property; delay costs and impacts; fees and charges of engineers, architects, attorneys, and other professionals; and all court, arbitration, or other dispute resolution costs.
- B. All costs, losses, and damages (included but not limited to fees and charges of engineers, architects, attorneys and other professionals, all court or arbitration or other dispute resolution costs, and all costs of repair or replacement of work of others) incurred or sustained by Owner in exercising its rights and remedies arising from defective Construction under this Article will be charged against Design-Builder, by set-off against payment or otherwise.
- C. Design-Builder shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to defective Construction.

13.07 Owner's Acceptance of Defective Construction

- A. If, instead of requiring correction or removal and replacement of defective Construction, Owner prefers to accept it, Owner may do so. If such acceptance is proposed prior to final payment, it shall be subject to confirmation by the applicable Project Design Professional that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety. Design-Builder shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Construction. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents, and Owner shall be entitled to an appropriate decrease in the Contract Price reflecting the diminished value of the Construction so accepted.

13.08 Owner May Stop Construction

- A. If Construction is defective, or Design-Builder fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform Construction in such a way that

the completed Construction will conform to the Contract Documents, Owner may order Design-Builder to stop Construction or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop Construction will not give rise to any duty on the part of Owner to exercise this right for the benefit of Design-Builder or any other party.

ARTICLE 14 – PAYMENTS TO DESIGN-BUILDER; COMPLETION

14.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Paragraph 2.04 will serve as the basis for progress payments. Progress payments on account of Lump Sum Work will be based on the number of units completed.
- B. *Application for Progress Payment:* On or about the date established in the Agreement for submission of each application for progress payment (but not more often than once a month), Design-Builder shall submit to Owner for review an Application for Payment filled out and signed by Design-Builder covering the Work completed as of the date indicated on the Application and accompanied by supporting documentation as required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect Owner's interest therein, all of which will be satisfactory to Owner.
- C. *Payment of Obligations:*
 - 1. Beginning with the second Application for Payment, each Application shall include an affidavit of Design-Builder stating that all previous progress payments received on account of the Work have been applied on account to discharge Design-Builder's legitimate obligations associated with prior Applications for Payment.
 - 2. If Design-Builder contends that it has withheld payment of underlying obligations for good cause, then Design-Builder shall inform Owner of the identity of the entity from which Design-Builder has withheld payment, the amount of the withholding, and the reason for the withholding.
- D. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- E. *Review of Applications:*
 - 1. Owner will, within 10 days of receipt of each Application for Payment, either indicate in writing its acceptance of the Application and state that the Application is being processed for payment, or return the Application to Design-Builder indicating in writing its reasons for refusing to accept the Application.
- F. Not more than 10 days after accepting such Application the amount will become due and when due will be paid by Owner to Design-Builder.
 - 1. If Owner should fail to pay Design-Builder at the time the payment of any amount becomes due, then Design-Builder may, at any time thereafter, upon serving written

notice that he will stop the Work within 7 days after receipt of the notice by Owner, and after such 7-day period, stop the Work until payment of the amount owing has been received. Written notice shall be deemed to have been duly served if sent by certified mail to the last known business address of Owner.

2. Payments due but unpaid shall bear interest at the rate specified in the Agreement.
3. No Progress Payment nor any partial or entire use or occupancy of the Project by Owner shall constitute an acceptance of any Work not in accordance with the Contract Documents.

G. *Reduction in or Refusal to Make Payment:*

1. Owner may impose a set-off against the whole or any part of any such payment, or nullify any previous payment because of subsequently discovered evidence or the results of subsequent inspections or tests, to the extent that is reasonably necessary to protect Owner from loss because:
 - a. Claims have been made against Owner on account of Design-Builder's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Design-Builder's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from breach of warranty, workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Design-Builder has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Design-Builder has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Design-Builder is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Construction is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Construction in accordance with Paragraph 13.05, or has accepted defective Construction pursuant to Paragraph 13.07;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event that would constitute a default by Design-Builder and therefore justify a termination for cause has occurred;
 - j. Liquidated damages, special damages, or performance damages have accrued under the Contract Documents as a result of Design-Builder's failure to achieve Milestones, Substantial Completion, final completion of the Work, or performance requirements, as applicable;

- k. Liens have been filed in connection with the Work, except where Design-Builder has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such liens; or
 - l. There are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, Owner will give Design-Builder immediate written notice stating the reasons for such action and the specific amount of the reduction, and promptly pay Design-Builder any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Design-Builder the amount so withheld, or any adjustment thereto agreed to by Owner and Design-Builder, if Design-Builder remedies the reasons for such action. The reduction imposed shall be binding on Design-Builder unless it duly presents a written notice of Claim contesting the reduction.

14.02 Design-Builder's Warranty of Title

- A. Design-Builder warrants and guarantees that title to all Construction, materials, and equipment covered by any Application for Payment, whether already incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.03 Substantial Completion

- A. When Design-Builder considers the Work ready for its intended use Design-Builder shall notify Owner in writing that the Work is substantially complete (except for items specifically listed by Design-Builder as incomplete) and request that Owner issue a certificate of Substantial Completion. Promptly thereafter, Owner and Design-Builder shall make an inspection of the Work to determine the status of completion. If Owner does not consider the Work substantially complete, Owner will notify Design-Builder in writing giving the reasons therefor.
- B. If Owner considers the Work substantially complete:
1. Owner and Design-Builder will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Design-Builder agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
 2. Owner will prepare and deliver to Design-Builder a certificate of Substantial Completion which shall fix the date of Substantial Completion. Owner shall attach to the certificate a punch list of items to be completed or corrected before final payment.
- C. After Substantial Completion the Design-Builder shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Design-Builder may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- D. Owner shall have the right to exclude Design-Builder from the Site after the date of Substantial Completion subject to allowing Design-Builder reasonable access to remove its property and complete or correct items on the punch list.

14.04 Partial Use or Occupancy

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Construction which (1) has specifically been identified in the Contract Documents, or (2) Owner and Design-Builder agree constitute a separately functioning and usable part of the Construction that can be used by Owner for its intended purpose without significant interference with Design-Builder's performance of the remainder of the Construction, subject to the following:
1. Owner at any time may request Design-Builder in writing to permit Owner to use or occupy any such part of the Construction that Owner believes to be ready for its intended use and substantially complete. If Design-Builder agrees that such part of the Work is substantially complete, Design-Builder and Owner will follow the procedures of Paragraph 14.03 for that part of the Construction.
 2. Design-Builder at any time may notify Owner in writing that Design-Builder considers any such part of the Work ready for its intended use and substantially complete and request Owner to issue a certificate of Substantial Completion for that part of the Work.
 3. Within a reasonable time after either such request, Owner and Design-Builder shall make an inspection of that part of the Work to determine its status of completion. If Owner does not consider that part of the Work to be substantially complete, Owner will notify Design-Builder in writing giving the reasons therefor. If Owner considers that part of the Work to be substantially complete, the provisions of Paragraph 14.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 4. No use or occupancy of part of the Construction will be accomplished prior to compliance with the requirements of Paragraph 6.05 regarding property insurance.

14.05 Final Inspection

- A. Upon written notice from Design-Builder that the entire Work or an agreed portion thereof is complete, Owner will make a final inspection with Design-Builder and will notify Design-Builder in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Design-Builder shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.06 Final Payment

A. *Application for Payment:*

1. After Design-Builder has completed all such corrections to the satisfaction of Owner and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance, certificates of inspection, and Record Documents, Design-Builder may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (unless previously delivered) by:
 - a. All documentation called for in the Contract Documents;
 - b. Consent of the surety, if any, to final payment;

- c. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment;
 - d. A list of all disputes that Design-Builder believes are unsettled; and
 - e. Complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
 3. In lieu of such releases or waivers of Liens specified in Paragraph 14.06.A.2, and as approved by Owner, Design-Builder may furnish receipts or releases in full and an affidavit of Design-Builder that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed, and (b) all payrolls, material and equipment bills and other indebtedness connected with the Work for which Owner might in any way be responsible, or which in any way might result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Project Design Professional, Construction Subcontractor, or Supplier fails to furnish such a release or receipt in full, Design-Builder may furnish a Bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.
- B. *Final Payment and Acceptance:* If Owner is satisfied that the Work has been completed and Design-Builder's other obligations under the Contract Documents have been fulfilled, Owner will, within 10 days after receipt of the final Application for Payment, give written notice to Design-Builder that the Work is acceptable. Otherwise, Owner will return the Application to Design-Builder, indicating in writing the reasons for refusing to process final payment, in which case Design-Builder shall make the necessary corrections and resubmit the Application.
- C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment.
- D. *Payment Becomes Due:* The amount will become due and will be paid by Owner to Design-Builder 30 days after the presentation to Owner of the acceptable Application and accompanying documentation, in appropriate form and substance and with Owner's notice of acceptability.

14.07 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Design-Builder. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.05, from Design-Builder's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from unresolved disputes or Claims presented by Owner, or from Design-Builder's continuing obligations under the Contract.
- B. The acceptance of final payment by Design-Builder will constitute a waiver by Design-Builder of all claims and rights against Owner other than those pending matters that have been duly submitted to dispute resolution under the provisions of Article 16.

14.08 Correction Period

- A. If within one year after the date of Substantial Completion of the entire Work or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Construction is found to be defective, Design-Builder shall

- promptly, without cost to Owner and in accordance with Owner's written instructions, (1) correct such defective Construction, or, if it has been rejected by Owner, remove it from the Site and replace it with Construction that is not defective, and (2) satisfactorily correct or remove and replace any damage to other Construction or the work of others resulting therefrom. If Design-Builder does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Construction corrected or the rejected Construction removed and replaced, and all costs, losses, and damages caused by or resulting from such removal and replacement (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals, all court or arbitration or other dispute resolution costs, and all costs of repair or replacement of work of others) will be paid by Design-Builder.
- B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Conceptual Documents.
- C. Where defective Construction (and damage to other Construction resulting therefrom) has been corrected, or removed or replaced, under this Paragraph 14.08, the correction period hereunder with respect to such Construction will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 days by notice in writing to Design-Builder, which will fix the date on which Work will be resumed. Design-Builder shall resume the Work on the date so fixed. Design-Builder shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension.

15.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events justifies termination for cause:
1. Design-Builder's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the progress schedule as duly adjusted).
 2. Design-Builder's disregard of Laws or Regulations of any public body having jurisdiction.
 3. Design-Builder's violation in any substantial way of provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occurs, Owner may, after giving Design-Builder (and the surety, if any) 7 days' written notice, terminate the services of Design-Builder, take possession of any completed Design Submittals prepared by or for Design-Builder (subject to the limited license and indemnification provisions of Paragraph 3.04), exclude Design-Builder from the Site, take possession of the Work, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Design-Builder but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case Design-Builder shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all costs, losses and damages sustained by Owner arising out of or resulting from completing the Work (including but not

limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) such excess will be paid to Design-Builder. If such costs, losses and damages exceed such unpaid balance, Design-Builder shall pay the difference to Owner. Such costs, losses and damages incurred by Owner will be incorporated in a Change Order. When exercising any rights or remedies under this paragraph Owner shall not be required to obtain the lowest price for the Work performed.

- C. Notwithstanding Paragraph 15.02.B, Design-Builder's services will not be terminated if Design-Builder begins, within 7 days of receipt of notice of intent to terminate, to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- D. Where Design-Builder's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Design-Builder then existing or which may thereafter accrue. Any retention or payment of moneys due Design-Builder by Owner will not release Design-Builder from liability.

15.03 Owner May Terminate for Convenience

- A. Upon 7 days' written notice to Design-Builder, Owner may, without cause and without prejudice to any other right or remedy of Owner, elect to terminate the Contract. In such case, Design-Builder shall be paid (without duplication of any items) for:
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. Amounts paid in settlement of terminated contracts with Project Design Professionals, Construction Subcontractors, Suppliers and others (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs incurred in connection with such terminated contracts); and
 - 4. Reasonable expenses directly attributable to termination.
- B. Design-Builder shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 Design-Builder May Stop Work or Terminate

- A. If, through no act or fault of Design-Builder, the Work is suspended for a period of more than 90 days by Owner or under an order of court or other public authority, Owner fails to act on any Application for Payment within 30 days after it is submitted, or Owner fails for 30 days to pay Design-Builder any sum finally determined to be due, then Design-Builder may, upon 7 days' written notice to Owner, and provided Owner does not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.A. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Owner has failed for 30 days to pay Design-Builder any sum finally determined to be due, Design-Builder may upon 7 days' written notice to

Owner stop the Work until payment is made of all such amounts due Design-Builder, including interest thereon. The provisions of this paragraph are not intended to preclude Design-Builder from obtaining an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Design-Builder's stopping Work as permitted by this paragraph.

ARTICLE 16 – DISPUTES

16.01 Methods and Procedures

- A. *Notice of Claim:* If Owner and Design-Builder are not in agreement regarding a proposed or requested Change Order, other proposed adjustment of Contract Price or Contract Times, a Work Change Directive issued by Owner, or any other relief proposed or requested under the Contract, then either party may provide written notice of a Claim to the other party. Such notice of Claim shall be given within 90 days of: the proposal or request for a Change Order; such other proposed adjustment of Contract Price or Contract Times; the issuance of the Work Change Directive; or the proposal or request for other relief under the Contract. The notice of Claim shall be given within the 90 days regardless of whether the other party has responded to such proposal, request, or issuance, and regardless of whether discussions or negotiations are in progress; provided, however, that the parties may extend the time to give such notice of Claim by mutual written agreement. The notice of Claim shall include a statement of position, specification of the remedy sought, and supporting documentation.
- B. *Response:* Within 30 days of the date of notice of Claim, the receiving party shall respond with a written statement of position and any supporting documentation.
- C. *Direct Negotiations:* Owner and Design-Builder agree to directly negotiate all Claims between them in good faith for a period of 60 days from the date of notice of Claim.
- D. *Mediation:* If direct negotiations are unsuccessful in resolving a Claim, then Owner and Design-Builder may submit the unsettled Claim to mediation by a mutually agreeable mediator or mediation service. Owner and Design-Builder agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis, and shall be completed within 120 days.
 1. The fees and expenses, including filing fees, of the mediator and any mediation service shall be shared equally by Owner and Design-Builder.
 2. The mediation shall be held in the locality where the Project is located, unless another location is mutually agreed upon by the parties.
 3. A settlement (if any) resulting from such mediation will be specifically enforceable under the prevailing law, by any court having jurisdiction.
 4. Participation in the mediation process in good faith is a condition precedent to commencing final or binding dispute resolution.
- E. If mediation is unsuccessful in resolving a Claim, the County reserve the right to proceed to court.
- F. No claim shall be submitted to, or decided by, binding arbitration.
- G. The Court of Common Pleas of Lycoming County is the court of exclusive jurisdiction for any dispute arising from or out of the Agreement.

ARTICLE 17 – MISCELLANEOUS**17.01 Giving Notice**

- A. Whenever any provision of the Contract Documents requires the giving of written notice to the other party to this Contract, it will be deemed to have been validly given if delivered to the Authorized Representative of the other party:
1. In person, by a commercial courier service or otherwise; or
 2. By registered or certified mail, postage prepaid; or
 3. By e-mail, with the words “Formal Notice” or similar in the e-mail’s subject line.

17.02 Computation of Times

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 Cumulative Remedies

- A. Unless expressly stated otherwise in this Contract, the duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, or waiver of, any rights and remedies available to any or all of them which are otherwise imposed or available by:
1. Laws or Regulations; or
 2. Any special warranty or guarantee; or
 3. Other provisions of the Contract.
- B. The provisions of Paragraph 17.03.A will be as effective as if repeated specifically in the Contract in connection with each particular duty, obligation, right and remedy to which they apply.

17.04 Limitation of Damages

- A. With respect to this Contract and any and all Claims and other matters at issue, Owner shall not be liable to Design-Builder for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Design-Builder on or in connection with any other project or anticipated project.

17.05 No Waiver

- A. A party’s non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.06 Survival of Obligations

- A. All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Contract.

17.07 Controlling Law

- A. The Contract Documents will be construed in accordance with the law of the place of the Project.

17.08 Headings

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

ATTACHMENT J

**ATTACHMENT J
SUPPLEMENTARY CONDITIONS OF THE
CONTRACT BETWEEN OWNER AND DESIGN-BUILDER**

TABLE OF CONTENTS

	Page
Article 1 – Definitions And Terminology.....	146
Article 2 – Preliminary Matters.....	146
Article 3 – Documents: Intent, Amending, Reuse	146
Article 5 – Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions	147
Article 6 – Bonds And Insurance	148
Article 7 – Design-Builder’s Responsibilities	150
Article 8 – Submittals.....	151
Article 10 – Owner’s Responsibilities	152
Article 12 – Cost Of The Work Adjustments; Unit Price Work.....	154
Article 14 – Payments To Design-Builder; Completion.....	155

SUPPLEMENTARY CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01, *Defined Terms*

- A. The terms used in the Supplementary Conditions which are defined in the General Conditions should be used with exactly the same meanings. This is true for all the Contract Documents.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01, *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraph 2.01.B in its entirety and insert the following in its place:

- B. *Evidence of Design-Builder's Insurance:* When Design-Builder delivers the executed counterparts of the Agreement to Owner, Design-Builder shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Design-Builder in Article 6. Design-Builder may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- C. *Evidence of Owner's Insurance:* After receipt from Design-Builder of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Design-Builder copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.02, *Copies of Documents*

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Design-Builder, at their sole discretion, copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the Contract Documents will be furnished upon request at Owner's cost of reproduction.

ARTICLE 3 – DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.04, *Ownership and Reuse of Documents*

SC-3.04.A Delete in its entirety Paragraph 3.04.A, and replace it with the following:

- A. All documents prepared for or furnished to Owner by Design-Builder pursuant to this Contract (including but not limited to the Construction Drawings and Construction Specifications) are instruments of service. With respect to such documents:
 1. Design-Builder shall have and retain the ownership, title, and property rights, including copyright, patent, intellectual property, and common law rights, in any design elements (including but not limited to standard details, drawings, plans, specifications, methodologies, and engineering computations) used in the documents, but developed by

Design-Builder or its Project Design Professionals independent of this Contract. Design-Builder shall provide appropriate verification of such independent development upon Owner's request.

2. Subject to the limited exception in Paragraph SC-3.04.A.1, upon final payment to Design-Builder of all amounts due and owing under this Contract, the ownership, title, and property rights, including copyright, patent, intellectual property, and common law rights, in the documents prepared for or furnished to Owner by Design-Builder pursuant to this Contract (including but not limited to the Construction Drawings and Construction Specifications) shall transfer to Owner.
3. Upon transfer of ownership, title, and property rights to Owner under Paragraph SC-3.04.A.2, Design-Builder shall receive a limited, nonexclusive license to use the content of any subject document on other projects, provided such use does not conflict with Owner's business, commercial, proprietary, competitive, or security interests.
4. Upon termination of this Contract for Owner's convenience, or termination by Design-Builder for cause, Design-Builder shall retain the ownership, title, and property rights, including copyright, patent, intellectual property, and common law rights, in all documents prepared or furnished by Design-Builder under this Contract.
5. The documents prepared or furnished by Design-Builder under this Contract, regardless of ownership, transfer, license, completion status, or termination of the Contract, are for Design-Builder's use, and are not intended or represented to be suitable for use on the Project by Owner or any party other than Design-Builder, or for reuse by Owner or others on extensions of the Project or on any other project. Any such use or reuse by Owner or others on Owner's behalf will be at Owner's sole risk, and without liability or legal exposure to Design-Builder, the Project Design Professionals, or their subconsultants, and Owner shall indemnify and hold harmless Design-Builder, the Project Design Professionals, and their subconsultants from all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from any such use or reuse.

ARTICLE 5 – SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.04, Differing Site Conditions

SC-5.04.A Add the following new paragraphs immediately after Paragraph 5.04.A:

1. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
 - (a) Information from leachate tank project
2. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:
 - (a) Record Drawings of Leachate Storage Tank
 - (b) Site Photographs: April 2020
 - (c) Permit for Solid Waste Disposal and/or Processing Facility, Form No. 8, Permit No. 100963, Date Issued: April 1, 2020

SC-5.06, Hazardous Environmental Conditions at Site

SC 5.06.A Delete Paragraph 5.06.A in its entirety and insert the following in its place:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.03, Design-Builder’s Insurance

SC-6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

1. Workers’ Compensation, and related coverages under Paragraph 6.03.A of the General Conditions:

State: PENNSYLVANIA	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman’s):	<u>Statutory</u>
Jones Act coverage, if applicable:	N/A
Bodily injury by accident, each accident	\$ _____
Bodily injury by disease, aggregate	\$ _____
 Employer’s Liability:	
Bodily injury, each accident	\$ <u>Statutory</u>
Bodily injury by disease, each employee	\$ <u>Statutory</u>
Bodily injury/disease aggregate	\$ <u>Statutory</u>
 For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker’s compensation or commercial general liability policy with a minimum limit of:	\$ <u>N/A</u>
 Foreign voluntary worker compensation	<u>Statutory</u>

2. Design-Builder’s Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>2,000,000</u>

Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000

3. Automobile Liability under Paragraph 6.03.E. of the General Conditions:

Bodily Injury:

Each person \$ _____

Each accident \$ _____

Property Damage:

Each accident \$ _____

[or]

Combined Single Limit of \$ 1,000,000

4. Excess or Umbrella Liability:

Per Occurrence \$ 5,000,000

General Aggregate \$ 5,000,000

5. Contractor's Pollution Liability under Paragraph 6.03.G of the General Conditions:

Each Occurrence \$ _____

General Aggregate \$ _____

If box is checked, Design-Builder is not required to provide Contractor's Pollution Liability insurance under this Contract.

6. Additional Insureds: In addition to Owner, include as additional insureds the following:

Barton and Loguidice, D.P.C. (B&L), and Civil & Environmental Consultants, Inc. (CEC)

7. Design-Builder's Professional Liability per requirements in Paragraph GC-6.03.I. Professional Liability Insurance:

Each Claim \$ 1,000,000

Annual Aggregate \$ 1,000,000

8. Design-Builder's Risk Insurance per requirements in Paragraph GC-6.05 Property Insurance:

Each Claim \$ 1,000,000

SC-6.06 Waiver of Rights

Delete Paragraph 6.06 Waiver of Rights in its entirety from General Conditions of the Contract between Owner and Design-Builder

ARTICLE 7 – DESIGN-BUILDER’S RESPONSIBILITIES*SC-7.01, Design Professional Services*

SC 7.01.B Amend Paragraph GC-7.01.B by adding the following sentence:

If the Contract establishes objective performance standards with which Design-Builder must comply, and if such performance standards have been clearly identified in the Contract Documents using the term “performance standards,” then Design-Builder shall perform or furnish Design Professional Services that allow the Work to meet such performance standards, notwithstanding the professional standard of care set forth in the preceding sentence.

SC-7.04, Labor; Working Hours

SC-7.04.B. Replace GC-7.04.B with the following new paragraph:

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, and in the absence of any Laws or Regulations to the contrary, all Construction at the Site shall be performed during regular working hours. Design-Builder will not perform Work on any legal holiday. Design-Builder may perform Construction at the Site outside regular working hours or on a legal holiday only with Owner’s written consent, which will not be unreasonably withheld.

1. Regular working hours will be *Monday through Friday, 7:00 am to 7:00 pm*
2. Legal holidays applicable to this Contract are *[here insert list of legal holidays]*

SC-7.04.B.3 Add the following new paragraph immediately after Paragraph SC-7.04.B.2:

3. Design-Builder shall be responsible for the cost of any overtime pay or other expense incurred by Owner for services of Owner’s Site Representative and Owner’s Consultant, and other additional costs incurred by Owner because of the performance of Construction outside regular working hours. If Design-Builder is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due Design-Builder under Article 14.

SC-7.10, Taxes

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

B. *Owner’s Tax-Exempt Status*

1. Owner is exempt from payment of sales and compensating use taxes of the State of Pennsylvania and of cities and counties thereof on all materials to be incorporated into the Construction. See 61 PA Code, Chapters 31 through 60, and Pennsylvania Department of Revenue Publication 627.

SC-7.13, Safety and Protection

SC-7.13 Insert the following after the second sentence of Paragraph 7.13.C:

The following Owner safety programs are applicable to the Work:

- High visibility shirt or vest to be worn at all times while on-site
- Cell phones can only be used while inside a building or inside a vehicle that is shut off.
- Seat belts must be worn at all times
- Methane and hydrogen sulfide are present in landfill gas
- No drugs, weapons or alcohol are permitted
- No smoking or open flames are permitted
- No scavenging in the containers or on the working face

ARTICLE 8 – SUBMITTALS

SC-8.01 Insert the following immediately after Paragraph 8.01.F:

G. Required Submittals

1. Furnish for Owner's review and approval the following Submittals:

Submittals Requiring Owner's Approval	Remarks
Five copies of the draft and final Project Management Plan (PMP)	
Five copies of the Value Engineering/Constructability Review Report	
Five copies of the 60% complete design documents	
Five copies of the 90% complete design documents	
Five copies of all permit documents	
Five copies of Operating/Maintenance and Contingency Plan	
One set of unbound Construction Documents with half-sized Drawings, and four sets of full-sized final Construction Documents at the pre-construction conference	
Five copies of all approved O&M manuals	
Construction Quality Control Plan	

2. Furnish for Owner's review the following Construction-phase administrative Submittals, which shall be acceptable as to form and content:

Submittal	Remarks
Meeting minutes from all meetings.	
Monthly progress report including schedule and cost control information.	
Five copies of all equipment guarantees and warranties	
Five copies of draft Certification of Construction Completion including the Construction Quality Assurance Report and half-sized record drawings	
Five copies of final Certification of Construction Completion including the Construction Quality Assurance Report and half-sized signed and sealed record drawings.	
Five sets of full-sized signed and sealed Record Drawings	

Submittal	Remarks
Five sets of half-sized Record Drawings	

3. Furnish for Owner’s review the following Submittals for materials and equipment to be incorporated into the Construction; such Submittals shall be acceptable as to form and content.

Submittal	Remarks
Liner material	
Composite liner containment	
Cushion/protection of the primary geomembrane	
Fasteners and connectors	

ARTICLE 10 – OWNER’S RESPONSIBILITIES

SC-10.05, Owner’s Site Representative

SC-10.05 Add the following new paragraph immediately after Paragraph 10.05.A:

- B. Owner will furnish an “Owner’s Site Representative” (OSR) to represent Owner at the Site and assist Owner in observing the performance of the Construction. OSR is not Design-Builder’s subcontractor, consultant, agent, or employee. OSR will be Barton & Loguidice, D.P.C. (B&L), and Civil & Environmental Consultants, Inc. (CEC). The authority and responsibilities of OSR follow:
 4. General: OSR's dealings in matters pertaining to the Construction in general shall be with Design-Builder’s designated representatives at the Site. OSR's dealings with Design-Builder’s Construction Subcontractors and Suppliers, including Project Design Professionals, shall only be through or with the knowledge and approval of Design-Builder.
 5. Schedules: Review the Construction progress schedule, schedule of Submittals, and Schedule of Values prepared by or for Design-Builder.
 6. Conferences and Meetings: Attend meetings with Design-Builder and Construction Subcontractors, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings.
 7. Liaison. Serve as Owner’s liaison:
 - a. with Design-Builder regarding the Construction.
 - b. with Design-Builder when Design-Builder’s operations affect Owner’s onsite operations.
 - c. with respect to Design-Builder requests for additional details or information from Owner, or for clarifications and interpretations of the Contract Documents.
 - d. with respect to proposed modifications of the Contract Documents, Change Orders, and similar matters.
 8. Submittals:

- a. Record date of receipt of Submittals and samples approved by Design-Builder.
 - b. Receive samples furnished at the Site by Design-Builder, and notify Owner of availability of samples for examination.
 - c. Advise Owner and Design-Builder of the commencement of any portion of the Construction requiring a Submittal or sample for which OSR believes that the Submittal has not been accepted by Owner
9. Observation of the Construction:
- a. Conduct on-site observations of Design-Builder's Construction in progress.
10. Inspections, Tests, and System Start-ups:
- a. Observe tests, equipment and systems start-ups, and operating and maintenance training.
 - b. Review Design-Builder's recordkeeping regarding tests, equipment and systems start-ups, and operating and maintenance training.
11. Records:
- a. Prepare a daily report or keep a diary or log book, recording Design-Builder's hours at the Site, Construction Subcontractors present at the Site, weather conditions, Site visitors, any Site accidents, force majeure or delay events, emergencies, damage to property by fire or other causes, the discovery of any Constituent of Concern or Hazardous Environmental Condition, and deliveries of equipment or materials.
 - b. Record names, addresses, fax numbers, e-mail addresses, website locations, and telephone numbers of all Construction Subcontractors and major Suppliers of materials and equipment.
12. Payment Requests: Review each Construction-related Application for Payment received from Design-Builder; note compliance with the established procedure for Application for Payment submission; meet with Design-Builder to review each Application for Payment; and forward the Application for Payment with recommendations to Owner, noting particularly the relationship of the payment requested to: (a) the Schedule of Values accepted by Owner, (b) relevant cost of the work provisions, (c) Construction completed, and (d) materials and equipment delivered to the Site but not incorporated in the Construction.
13. Certificates, Operation and Maintenance Manuals: During the course of Construction, review materials and equipment certificates, operation and maintenance manuals, and other documentation required by the Contract Documents to be assembled and furnished by Design-Builder, noting whether the documentation is applicable to the items actually installed, and deliver such documentation to Owner for its review and acceptance prior to payment for that part of the Work.

14. Completion:

- a. Participate in Owner's visits to the Site to determine Substantial Completion, assist in the preparation of a punch list of items to be completed or corrected, and in preparation of the certificate of Substantial Completion.
- b. Participate in Owner's final inspection at the Site to determine completion of the Work, in the company of Owner and Design-Builder, and assist in preparation of a final punch list of items to be completed and deficiencies to be remedied, if any.
- c. Observe whether items on the final punch list have been completed or corrected, and make recommendations to Owner concerning acceptance and issuance of the notice of acceptability of the Work. Assist Owner with preparing the notice of acceptability of the Work.

C. The OSR shall not:

15. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
16. Exceed limitations of Owner's authority as set forth in the Contract Documents.
17. Undertake any of the responsibilities of Design-Builder, Construction Subcontractors, Project Design Professionals, or Suppliers.
18. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Work.
19. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Design-Builder.
20. Accept Submittals from anyone other than Design-Builder.
21. Have any authority with respect to Owner's occupancy of the Construction, in whole or in part.

ARTICLE 12 – COST OF THE WORK ADJUSTMENTS; UNIT PRICE WORK

SC-12.02.D Delete Paragraph 12.02.D in its entirety and insert the following in its place:

- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and Design-Builder or Owner may seek an adjustment in the Contract Price under the following conditions:
 1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time the Contract Price is established) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Design-Builder differs by more than 15 percent from the estimated quantity of such item indicated in the Agreement; and
 2. Such an adjustment would not duplicate, and is coordinated with, any other related adjustments of Contract Price; and

3. Design-Builder has incurred additional expense, or less expense, as a result of the variation in quantity.

ARTICLE 14 – PAYMENTS TO DESIGN-BUILDER; COMPLETION

SC-14.03.B Add the following new subparagraph to Paragraph 14.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Owner or its representatives, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Design-Builder to Owner. If Design-Builder does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off, in accordance with Paragraph 14.01.G of the General Conditions, against payments due under Article 14 of the General Conditions.

ARTICLE 12 – CLAIMS

SC-12.01 Delete 12.01.D. in its entirety and replace with the following:

- 12.01.D.1 To the fullest extent permitted by law, the Design-Builder hereby waives any claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there hereafter is any unjust enrichment to the Work, as a basis for an increase in any amounts due the Design-Builder or a change in any time period provided for in the Contract.
- 12.01.D.2 Claims for Concealed or Unknown Conditions: If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than fourteen (14) calendar days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Design-Builder's cost of, or time required for, performance of any part of the Work, and such difference would not reasonably have been discovered by a reasonably competent Design-Builder prior to bid, then the Engineer will recommend to the Owner an equitable adjustment in the Contract Sum or the Contract Time, or both. If the Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents, or that such difference would reasonably have been discovered by a reasonably competent Design-Builder prior to bid, and that no change in the terms of the Contract is justified, the Engineer shall so notify the Owner and the Design-Builder in writing, stating the reasons. Claims by the Design-Builder in opposition to such determination must be made within 21 days after the Engineer has given notice of the decision. If the conditions encountered are materially different, and such difference would not reasonably have been discovered by a

reasonably competent Design-Builder prior to bid, the Contract Sum and Contract Time shall be equitably adjusted.

- 12.02.D.3 Claims for Additional Cost: If the Design-Builder wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property.
- 12.02.D.4. Claims for Additional Time:
- a. Any Claim for an increase in the Contract Time, must be preceded by written notice detailing the cause of each such delay which notice must be given in writing to the Owner and the Engineer within five (5) days of such time as the occurrence causing the delay should have been detected. Such notice must specify each such occurrence, describe how the occurrence is causing delay, include an estimate and description of each cost or damage being incurred as a result of the delay, and set forth the probable effect of delay on the progress of the Work.
 - b. Failure to strictly comply with these requirements by the Design-Builder shall constitute a waiver of such claim and constitute sufficient cause to deny any extension of time.
 - c. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.
 - d. In planning its construction schedule within the agreed Contract Time, it shall be assumed that the Design-Builder has anticipated the amount of magnitude of adverse weather conditions normal to the site of the Work for the seasons involved. Only those weather delays attributable to other than normal weather conditions will be considered.
- 12.02.E.1 An extension of the Contract Time, to the extent permitted hereunder shall be the sole remedy of the Design-Builder for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity; or (4) any delay-related claim (collectively referred in this subparagraph as "Delay") whether or not such Delay is foreseeable. In no event shall the Design-Builder be entitled to any compensation or recovery of any damages, in connection with any Delay, including, without limitation, consequential damages, lost opportunity cost, impact damages, labor inefficiency damages, or overhead costs. Notwithstanding the foregoing, in the event the Delay is solely caused by the acts of the Owner, the Design-Builder shall be permitted an extension of time to complete the Work and an equitable adjustment to the Contract Sum in the amount of Design-Builder's increased labor costs caused by the Delay.
- 12.02.E.2 The Design-Builder understands that the timely prosecution of Design-Builder's obligations under the Contract is essential to the efficient completion of the Project and may have a direct bearing on the costs incurred by all other Prime Design-Builders. Some of the Design-Builder's obligations in this regard include, but are not limited to: 1) Completing the Work in an orderly fashion and in accordance with an agreed upon progress schedule; 2) Timely coordination and cooperation with the Owner, the

Engineer, and the other Prime Design-Builders to resolve disruptions, interferences or other problems as they arise; 3) Providing sufficient personnel, systems and procedures to insure that required materials, supplies, and skilled human resources are available so that the Work is timely understood, anticipated, progressed, and communicated where require to others involved with the Project; 4) Maintaining accurate job progress schedules and systems; 5) Timely notifying others working on the site when delays or interferences occur that will affect the Design-Builder's or others' work pertaining to the Project; 6) Providing a skilled, informed, and properly supported superintendent at the Project site and at all required job meetings to provide meaningful information and commitments to efficiently cooperate in coordinating the Work of the various Design-Builders; and 7) Timely reviewing all job minutes, correspondence and other communications and responding to same when required. Accordingly, Design-Builder shall indemnify and save the Owner harmless from all damages, costs and expenses incurred by reason of Design-Builder's failure to timely prosecute its obligations under this Agreement.

ARTICLE 20 - PENNSYLVANIA PUBLIC WORKS LABOR LAWS

- A. Pennsylvania Prevailing Wage Act. The Design-Builder shall comply with the provisions of the Pennsylvania Prevailing Wage Act and with the Wage Determination as issued by the Secretary of Labor and Industry, bound into these Specifications as Sections 00830 and 00831 and hereby made a part of this Contract.
- B. Pennsylvania Human Relations Act. The Design-Builder agrees that he will comply with the provisions of the Pennsylvania Human Relations Act in providing equal employment opportunities in connection with all the Work performed by him or her at the Job Site pursuant to this Contract. The Design-Builder, therefore, agrees as follows:

Nondiscrimination Clause

1. The Design-Builder shall not discriminate against any employee, applicant for employment, independent Design-Builder or any other person because of race, color, religious creed, ancestry, national origin, age, or sex. The Design-Builder shall take affirmative action to ensure that applicants are employed and that employees or agents are treated during employment, without regard to their race, color, religious creed, ancestry, national origin, age, or sex. Such affirmative 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 in the selection for training.
2. The Design-Builder shall in advertisements or requests for employment placed by it or in its behalf state all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age, or sex.
3. The Design-Builder shall send each labor union or worker's representative with which he has a collective bargaining agreement or other Contract or understanding, a notice advising said labor union or worker's representative of his or her commitment to this Nondiscrimination Clause. Similar notice shall be sent to every other source of recruitment regularly utilized by the Design-Builder.

4. It shall be no contest to a finding of noncompliance with the Contract Compliance Regulations issued by the Pennsylvania Human Relations or this Nondiscrimination Clause that the Design-Builder has delegated some of his or her employment practices to any union, training program or other source of recruitment which prevents him or her from meeting his or her obligations. However, if the evidence indicates that the Design-Builder was not on notice of the third-party discrimination or made a good faith effort to correct it, such factor shall be considered in mitigation in determining appropriate sanctions.
5. Where the practices of the union or any training program or other source of recruitment will result in the exclusion of minority group persons, so that the Design-Builder will not be able to meet his or her obligations under the Contract Compliance Regulations issued by the Pennsylvania Human Relations Commission or this Nondiscrimination Clause; the Design-Builder shall then employ and fill vacancies through other nondiscriminatory employment procedures.
6. The Design-Builder shall comply with the Contract Compliance Regulations of the Pennsylvania Human Relations Commission, 16 PA. Code Chapter 49 and with all laws prohibiting discrimination in hiring or employment opportunities. In the event of the Design-Builder's noncompliance with the Nondiscrimination Clause of this Contract or with any such laws, this Contract may, after hearing and adjudication, be terminated or suspended, in whole or part, and the Design-Builder may be declared temporarily ineligible for other Commonwealth Contracts, and such other sanctions may be imposed and remedies invoked as provided by the contract Compliance Regulations.
7. The Design-Builder shall furnish all necessary employment documents and records to, and shall permit access to his or her books, records and accounts by the Contracting Agency and the Human Relations Commission for purposes of investigation to ascertain compliance with the provisions of the Contract Compliance Regulations, pursuant to Section 49.35 of these Regulations. If the Design-Builder does not possess documents or reports reflecting the necessary information requested, he shall furnish such information on reporting forms supplied by the Contracting Agency or the Commission.
8. The Design-Builder shall actively recruit minority Subcontractors or Subcontractors with substantial minority representation among their employees.
9. The Design-Builder shall include the provisions of this Nondiscrimination Clause in every Subcontract, so that such provision will be binding upon each Subcontractor.
10. The terms used in this Nondiscrimination Clause shall have the same meaning as in the Contract Compliance Regulations issued by the Pennsylvania Human Relations Commission, 16 PA. Code Chapter 49.
11. The Design-Builder obligations under this Clause are limited to the Design-Builder's facilities located within Pennsylvania, or where the Contract is for the purchase of goods manufactured outside of Pennsylvania, the facilities at which such goods are actually produced.
12. In the hiring of employees for the performance of work under the contract or any subcontract, no contractor, subcontractor or any person acting on behalf of the Design-Builder or subcontractor shall by reason of gender, race, creed or color

- discriminate against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.
13. No Design-Builder or subcontractor or any person on their behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under the contract on account of gender, race, creed or color.
 14. The contract may be canceled or terminated by the government agency, and all money due or to become due under the contract may be forfeited for a violation of the terms or conditions of that portion of the contract.
- C. Pennsylvania Environmental Laws. The Design-Builder shall comply with all Pennsylvania environmental laws and the regulations promulgated thereunder, including without limitation, the Air Pollution Control Act, 35 P.S. §4001 et seq., the Clean Streams Law, 35 P.S. §691.1 et seq., and the Solid Waste Management Act, 35 P.S. §6018.101 et seq.
1. Among other prohibitions contained in these laws and regulations, is the prohibition against open burning in the project area.
 2. The Design-Builder shall adhere to the regulations relating to the control of erosion and sedimentation implemented by Pennsylvania under 25 PA Code Chapter 102, as amended.
 3. Erosion and Sediment Control Requirements/Guidelines are contained in these Specifications. All costs of sediment and erosion control shall be included in the Bid Price.
- D. Pennsylvania Trade Practices Act. In accordance with the Trade Practices Act, the Design-Builder cannot and shall not use or permit to be used in the Work any aluminum or steel products made in a foreign country which discriminates against aluminum or steel products manufactured in Pennsylvania. The countries of Brazil, South Korea, Spain, and Argentina have been found to discriminate against certain products manufactured in Pennsylvania. Therefore, the purchase or use of those countries products, as listed below is not permitted.
1. Brazil: Welded carbon steel pipes and tubes; carbon steel wire rod; tool steel; certain steel products, including hot-rolled stainless steel bar; stainless steel wire rod and cold-formed stainless steel bar; prestressed concrete steel wire strand; hot-rolled carbon steel plate in coil; hot-rolled carbon steel sheet and cold-rolled carbon steel sheet.
 2. Spain: Certain stainless steel products, including stainless steel wire rod; hot-rolled stainless steel bars and cold-formed stainless steel bars; prestressed concrete steel wire strand; certain steel products, including hot-rolled steel plate; cold-rolled carbon steel plate; carbon steel structural shapes; galvanized carbon steel sheet; hot-rolled carbon steel bars and cold-formed carbon steel bars.
 3. South Korea: Carbon steel pipes and tubes; hot-rolled carbon steel plate; hot-rolled carbon steel sheet and galvanized steel sheet.
 4. Argentina: Carbon steel wire rod and cold-rolled carbon steel sheet.

5. Penalties for violation of this provision may be found in the Trade Practices Act, which penalties include becoming ineligible for public works contracts for a period of three years.
 6. NOTE: This provision in no way relieves the Design-Builder of its responsibility to comply with those provision of this Contract which prohibit the use of foreign-made steel and cast iron products.
- E. Steel Products Procurement Act. The Design-Builder shall comply with the provisions of the Steel Products Procurement Act, 73 PS Section 1881 et seq, which provide in part that if any steel products are to be used or supplied in the performance of the contract, only steel products as herein defined shall be used or supplied in the performance of this contract or any subcontracts hereunder.

In the performance of the Contract, the Design-Builder and all subcontractors, materialmen, or suppliers shall use only "Steel Products" rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of 2 or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer, or other steel making process. "Steel Products" include not only Cast Iron Products but also Machinery and Equipment listed in United States Department of Commerce Standard Industrial Classifications No. 25 (furniture and fixture), No. 35 (machinery, except electrical) and No. 37 (transportation equipment) and made of fabricated from, or containing steel components. If a product contains both foreign and U.S. produced steel, a product shall be determined to be a United States steel product only if at least 75 percent of the cost of the articles, materials and supplies have been mined, produced or manufactured, as the case may be, in the United States. Transportation Equipment shall be determined to be a United States steel product only if it complies with Section 165 of Public Law 97-424 (96 Stat 2136). When unidentified steel products are supplied under the Contract, and before any payment will be made, the Design-Builder must provide documentation to the Owner including, but not limited to, invoices, bills of lading and mill certification that the steel was melted and manufactured in the United States. If a steel products is identifiable from its face, the Design-Builder must submit certification which satisfies the Owner that the Design-Builder has fully complied with this provision. The Owner shall not provide for or make any payments to any person who has not complied with the Act. Any such payments made to any person by the Owner which should not have been made as a result of the Act shall be recoverable directly from the Design-Builder, and any subcontractor, manufacturer or supplier who did not comply with the Act. In addition to the withholding of payments, any person who willfully violated any of the provisions of the Act shall be prohibited from submitting any bids to any public agency for a period of 5 years from the date of the determination that a violation has occurred. In the event that the person who violates the provisions of the Act is a subcontractor, manufacturer, or supplier, such person shall be prohibited from performing any work or supplying any materials to a public agency for a period of 5 years from the date of the determination that a violation has occurred. The Design-Builder shall include the provisions of the Steel Products Procurement Act in any subcontract and supply contract, so that the provisions of the Act shall be binding upon each subcontractor and supplier.



Contractor Laydown Area (East of Tank) Arrow is Location of Electrical Disconnect for Contractors use



Electrical Disconnect for Contractors use



Eastern Stair Towers (Inside of Tank Looking South)



Eastern Stair Tower (Outside of Tank Looking North)



Western Stair Tower (Inside of Tank Looking West)



Western Stair Tower (Outside of Tank Looking East)



Stair Tower Legs



Temporary Fill Pipe for Hydrostatic Testing (Center of Southern Wall)



Permanent Fill Pipe (North East Corner)



Sump Area (South East Corner)



Top of the Wall Inside of Tank

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No. 100963
Date Issued April 1, 2020
Date Expires April 1, 2030

Under the provisions of the Pennsylvania Solid Waste Management Act of July 7, 1980, Act 97, a permit for a solid waste disposal and/or processing at (municipality) Brady Township in the County of Lycoming

is granted to (applicant) County of Lycoming
(address) Courthouse, 48 West Third Street
Williamsport, PA 17701

This permit is applicable to the facility named as and Lycoming County Landfill
and described as:

360.1 Acres
Latitude 41° 09' 05"
Longitude -76° 55' 07"

This permit is subject to modification, amendment and supplement by the Department of Environmental Protection and is further subject to revocation or suspension by the Department of Environmental Protection for any violation of the applicable laws or the rules and regulations adopted thereunder, for failure to comply in whole or in part with the conditions of this permit and the provisions set forth in the application no. 100963 which is made a part hereof, or for causing any condition inimical to the public health, safety or welfare.

See attachment for waste limitations and/or special conditions

/s/ Patrick Brennan

FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT**

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Standard Provisions

1. This permit renewal and modifications are being issued pursuant to the Pennsylvania Solid Waste Management Act of July 7, 1980 and the Municipal Waste Management Regulations most recent effective version. This permit is issued for:
 - the renewal of the construction and operation of 360.1 acres of landfill, of which 123.1 acres are permitted Fields 1 through 12, within the existing permitted area,
 - modification of the final cap system including a cap installation specific CQA/QC plan,
 - the modification for the installation of seventeen additional horizontal gas collection wells, pursuant to, and including, the Applications for Municipal or Residual Waste Permit listed as:
 - Application for Solid Waste Permit Renewal
 - Application received - March 29, 2019
 - Amendment/Technical Deficiency Response received - March 6, 2020
 - Amendment/Form I – E&S Control Plan received - March 10, 2020
 - Amendment/Groundwater Monitoring Plan received - March 12, 2020
 - All other related submissions/correspondence
 - Permit Modification for Final Cap System
 - Application received - December 19, 2019
 - Supplemental information received - February 4, 2019 and April 25, 2019
 - All other related submissions/correspondence
 - Permit Modification for Addition of Horizontal Gas Wells
 - Application received – October 23, 2019
 - Supplemental information received - February 24, 2020
 - All other related submissions/correspondence
2. The permittee shall comply with all applicable requirements listed in 25 PA Code, Article VIII, Municipal Waste. Failure to comply with the Department rules, regulations and special conditions may result in enforcement actions by the Department.
 3. The permittee shall comply with all applicable requirements of the Bureau of Air Quality Control, Bureau of Water Quality Management, Bureau of Watershed Management, and Bureau of Mining and Reclamation.

This Permit is Non-TRANSFERABLE

Page 2 of 20

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT**

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

4. A copy of the complete Waste Management permit application, including all updates and revisions, shall be retained on site.
5. Permit modifications, other than equivalency approvals, granted for this facility will be listed in Appendix D, of this permit. The specific permit conditions for each of these permit modifications will be included in Attachment 1 of Appendix D. Appendix D will be updated for any new permit modifications approved after the date of this permit.

Permit Documents

6. The permittee shall update all appropriate maps and drawings to comply with the requirements of permit application Forms 2 and 3 and to reflect current site conditions. Updated maps and drawings shall include but not be limited to those listed in the permit application Form 3 narrative response. Updated maps and drawings shall be submitted to the NCRO Waste Management Program within 6 months of the permit issuance.
7. The current Form E, Contractual Consent of Landowner, allows for the operation of a landfill until December 31, 2025 at which point Lycoming County would have access for monitoring and maintenance only. The permittee must submit a new fully executed Form E to the Department, which spans the permit term for the facility allowing for continued operation, at least 6 months prior to the current consent expiration date.

General Provisions / Daily Operations

8. The permitted operating hours for the facility are 24 hours per day, seven (7) days per week for all operations not involving waste receiving. The permitted days and hours of operation for waste activities are from 6:00 am to 5:00 pm, Monday through Friday and 6:00 am to 2:00 pm on Saturdays, or such other hours as the host municipality may set by ordinance, pursuant to Section 304 (b)(2) of Act 101, the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 P.S. Section 4000.304(b)(2). For purposes of calculation of average and daily waste volumes; each partial day shall be counted as one day.
9. No more than 2,000 tons of solid waste may be received at this facility for disposal on any single operating day. This figure represents the maximum daily volume of the facility, pursuant to Section 1112 of Act 101, the Municipal Waste Planning, Recycling and Waste

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT**

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Reduction Act, 53 P.S. Section 4000.1112, which section also provides that a mandatory civil penalty of \$100 per ton applies to any excess volume received for disposal at this facility for any reason.

10. No more than 1,600 tons of solid waste may be received at this facility for disposal on an average daily volume basis over the standard calendar year quarter. This figure represents the maximum daily volume of the facility, pursuant to Section 1112 of Act 101, the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 P.S. Section 4000.1112 and has been set after consideration of weather, seasonal variations, community cleanup days and other factors. Section 1112 applies to any excess waste received for disposal at this facility for any reason. The Department shall calculate any penalty after determining the total tonnage of solid waste received for disposal at this facility during the calendar year quarter, divided by the number of permitted operating days that the facility is permitted to accept waste for disposal during that quarter.
11. Any increase in the average or maximum daily waste disposal amount will require a major permit modification to be submitted to the Northcentral Regional Office (NCRO) Waste Management Program for review. Written approval for an increase in daily waste amounts is required.
12. Litter shall be collected at least weekly from fences, roadways, trees and tree line barriers and other barriers and disposed of in the working face.
13. Litter shall not be allowed to be blown or otherwise deposited off-site.
14. Fences or other barriers sufficient to control blowing litter shall be constructed in the immediate operating area and all other areas necessary.
15. Approved Alternate Daily Cover (ADC) meeting the requirements of 25 PA Code § 273.232 may be used as a daily cover material. No more than a five (5)-day supply of alternate daily cover material shall be maintained on site at any time.
16. All waste transportation using the LCRMS shall be monitored for compliance with Act 90. The Waste Transportation Safety Program (WTSP) of Act 90 requires owners of waste

This Permit is Non-TRANSFERABLE

Page 4 of 20

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

transportation vehicles (trucks registered for more than 17,000 pounds and trailers registered for more than 10,000 pounds) that regularly transport municipal or residual waste to a processing or disposal facility in the Commonwealth of PA to obtain written authorization from the Department. Act 90 additionally prohibits municipal or residual processing facilities from accepting waste after December 26, 2002 from vehicles that do not have a valid authorization sticker.

17. The permittee shall prevent trucks exiting the facility from tracking mud and other contaminants such as debris, litter, solid waste and leachate onto the public highway.

Reporting

18. The permittee shall submit to the Department's Rachel Carson State Office Building, a quarterly operation report as required by 25 Pa. Code § 273.312. The report shall be submitted on or before the 20th day of April, July, October and January for the three (3) months ending the last day of March, June, September, and December. The report shall be submitted on forms supplied by the Department.
19. The permittee shall submit to the NCRO Waste Management Program, an annual operations report on or before June 30 of each year in accordance with the requirements of 25 Pa. Code § 273.313.
20. The permittee is required to complete a daily operational record as required by 25 Pa. Code § 273.311. The daily operational record shall be recorded on a form supplied by the Department and shall be maintained on a daily basis and must be available at all times for review by the Department employees or their authorized representatives.
21. The permittee shall submit along with the annual report a summary of the status of mitigation and benefits as outlined in the Environmental Assessment (from the Field 11 & 12 Expansion) as approved by the Department. These measures include but are not limited to:
- a. Increased litter pickup
 - b. Free sludge disposal to West Branch Regional Authority for the period that the landfill is receiving solid waste
 - c. Educational tours
 - d. Host agreement benefits

This Permit is Non-TRANSFERABLE

Page 5 of 20

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Water Quality Monitoring and Protection

22. The water quality monitoring system includes the following groundwater monitoring points:

Upgradient monitoring wells:

M-1, M-2B

Downgradient monitoring wells:

M-3B, M-4B, M-5B, M-6B, M-7B, M-8C, M-10B, M-20B, M-24

23. The permittee shall not cause or allow water pollution within or outside of the permitted facility. Pollution, as defined in 25 Pa. Code § 271.1, for the purposes of this condition shall not be limited to groundwater but shall also include surface water. Degradation at any of the monitoring points dedicated to the facility shall be reported to the NCRO Waste Management Program in accordance with 25 Pa. Code § 273.286. The permittee must initiate a groundwater assessment plan in accordance with 25 Pa. Code § 273.286 to determine the source of the contamination at the monitoring point. Based on the results of the groundwater assessment plan, an abatement plan, in accordance with 25 Pa. Code § 273.287, shall be submitted to the NCRO Waste Management Program as required.

24. All monitoring point sample sheets, whether from quarterly or annual samples, shall include, at a minimum the following information, which shall be measured in the field at the time of sampling:

- water level depth
- sampling depth
- water temperature
- pH
- specific conductance

25. Quarterly chemical analysis reports of all monitoring points must be submitted to the NCRO Waste Management Program within 60 days of sampling or 15 days after completion of the chemical analysis, whichever is sooner in accordance with 25 Pa. Code § 273.285. The data analysis shall be accompanied by a data evaluation to determine groundwater or surface water degradation.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

26. Annual chemical analysis reports of all monitoring points must be submitted to the NCRO Waste Management Program within 60-days of sampling or 15-days after completion of the chemical analysis, whichever is sooner in accordance with 25 Pa. Code § 273.285. The data analysis shall be accompanied by a data evaluation to determine groundwater or surface water degradation.
27. If groundwater samples cannot be obtained from any of the monitoring well(s), the NCRO Waste Management Program shall be notified and the well(s) shall be re-drilled or relocated so as to obtain water for sampling groundwater. The permittee shall notify and obtain written approval from the Department prior to drilling and reconstructing any new monitoring wells.
28. All monitoring wells shall be pumped at a rate so as not to cause excessive turbidity. If turbidity values exceed 10 NTU, all metals shall be tested for dissolved values to be included with the quarterly and annual chemical analysis reports.
29. All monitoring points, groundwater and surface water, shall be numbered for identification with a label capable of withstanding field conditions. Reasonable access shall be maintained to all monitoring points.

Construction / Liner System

30. The permittee shall submit to the NCRO Waste Management Program, on a form provided by the Department, certification by a Pennsylvania Registered Professional Engineer of site construction in accordance with the approved plans and 25 Pa Code § 273.203. Each phase of the landfill construction shall be certified.
31. The following information, included in the permit application liner installation plan, shall be submitted to the NCRO Waste Management Program. This shall be done prior to the construction of the liner system for each landfill cell. Written approval from the NCRO Waste Management Program must be received by the permittee prior to beginning construction of the liner system including the subbase. The information to be submitted for any liner installation company shall include, but not be limited to, the following:
- a. Methods of installation
 - b. Time required

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

- c. Panel layouts
- d. procedures for inclement weather
- e. Procedures for material delivery
- f. Procedures for deploying all liner system materials
- g. Procedures for handling wrinkles in the liner
- h. Plans for laying out the entire liner system and covering as work progresses
- i. Identification (including resumes) and number of work crews

32. The geosynthetics listed in Appendix A, of this permit, are approved for installation in the liner system for this facility. These geosynthetic materials listed in Appendix A have been shown to be compatible with the expected leachate from this facility and have been demonstrated to have acceptable engineering properties for use in the liner system. The list of geosynthetics in Appendix A may be amended by the permittee by permit modification. However, as a condition of this approval, any additional liner material not on the list shall be evaluated for leachate compatibility in accordance with Permit Condition 32, below, and shall be demonstrated to have acceptable engineering properties including interface friction angles for use in the liner system. Written approval must be received from NCRO Waste Management Program prior to using the alternate geosynthetic in the liner system.

33. Except for the geosynthetics already approved and which are listed in Appendix A, leachate compatibility testing shall be performed on all geomembranes, geonets, and geotextiles to be used in the liner system per 25 Pa. Code § 273.161. For geomembranes, the compatibility test procedure shall be based on USEPA or ASTM guidelines approved by the Department. For geonets and geotextiles, the test procedures listed below are required. The test results and evaluation of the test results for the compatibility tests must be submitted for review. Written approval must be received by the permittee from the NCRO Waste Management Program prior to using the specific geosynthetic in the liner system. These test procedures may be modified based on test developments by ASTM Committee D-35.

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT**

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Geonets

<u>Property (unit)</u>	<u>Test Procedure</u>
a. Mass per unit area	Direct measure (sample size >1 sq. ft.)
b. Volatiles	Procedure for determination of volatile of exposed and unexposed FML ₁
c. Extractables	Procedure for determination of extractables content of exposed and unexposed FML ₁
d. Thickness (mils)	ASTM D1777-96 (part 32)
e. Dimensions of configuration	Direct measure machine and cross machine (CM) direction
f. Specific gravity or density	ASTM D792-13 Method A or ASTM D1505-18 (dry sample before test)
g. CBR Puncture	Geosynthetic Research Institute (GRI) Test Method GS1 "CBR Puncture Strength"
h. Strip Tensile Strength	Alternative Strip Tensile Test Method for Geonets
i. Transmissivity (or flow rate)	ASTM D4716/D4716M-14 [All laboratory testing for transmissivity of geonets shall be conducted at the site conditions, including: (i) gradient at site (minimum and maximum), (ii) identical representation of geosynthetic layers].
j. Compression Behavior of Geonets	GRI Test Method GN1 "Compression Behavior of Geonets"

Footnote 1. Lining of Waste Containment and Other Impoundment Facilities:
EPA; Sept. 1988; EPA 600/2-88-052.

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT**

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Geotextiles

<u>Property (units)</u>	<u>Test Procedure</u>
a. Thickness (mils)	ASTM D1777-96 (part 32)
b. Mass per unit area (oz/sq. yd.)	ASTM D3776/D3776M
c. Dimension (cm)	Direct measure machine and cross machine direction
d. Grab Tensile strength/elongation	ASTM D4632/D4632M-15a
e. Trapezoidal tear resistance	ASTM D4533/ D4533M-15
f. Hydraulic burst strength	ASTM D3786/ASTM D 3786
g. Puncture resistance	ASTM D3787-16
h. Permittivity	ASTM D4491/D4491M-17

34. Upon receipt of the liner system geonets and geomembranes to the construction site, conformance testing shall be conducted on each type of material prior to installation. The following physical properties shall be tested:

<u>Property</u>	<u>Test Procedure</u>
a. Density (minimum)	ASTM D -1505-18
b. Melt Flow Index (maximum)	ASTM D-1238-13 Condition E
c. Percent Crystallinity	Differential Scanning Calorimeter

The frequency of the above tests shall be one set of tests for each truckload of material delivered to the site. Testing shall be conducted by the third-party QA Laboratory.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

35. Samples of all geosynthetic materials received shall be retained for future verification. The frequency of sampling shall be one sample for every truckload delivered.
36. All sample results from each layer of the liner system's preparation, construction and/or installation shall be submitted to the NCRO Waste Management Program for review. Waste may not be disposed of in an area until the following have been met:
- e. A Certification of Facility Construction Activity (Form 37) has been completed and received by the NCRO Waste Management Program.
 - f. A field Quality Assurance report for each specific liner system layer's construction is submitted with the Form 37. At a minimum, this report shall include:
 - i. Personnel involved with the project.
 - ii. Scope of work.
 - iii. QA and QC methods and activities.
 - iv. Test results
 - v. Problems encountered during construction and resolution of these problems.
 - vi. Field drawings signed and sealed by a Pennsylvania registered professional engineer.
 - g. Written approval has been received by the permittee from the NCRO Waste Management Program for construction of each specific layer.
37. Upon completion of each layer of the liner system, the permittee shall notify the NCRO Waste Management Program that the liner layer construction activity is ready for inspection.
38. For all liner system layers, construction or installation of the next layer of the liner system may not take place until the Department has conducted an inspection of the previous liner system construction activity, all the approved minimum specifications for that specific previous layer have been met, and written approval has been received by the permittee from the NCRO Waste Management Program for construction of that specific previous layer.
39. All Quality Assurance reports shall be available for review upon request by the NCRO Waste Management Program or their representatives.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

40. There shall be at least one third-party QA monitor for each distinct work crew during the liner system construction and installation.
41. Previously approved Equivalency Review Requests have been included in the Renewal Application and remain in effect. Any future approved Equivalency Review Requests for this facility will be listed in Appendix B, of this permit. The specific permit conditions for each of these equivalency approvals will be included in Attachment 1 of Appendix B.

Construction / Final Cap System

42. Alternative installation methods not approved in this CQA/QC plan must be approved by the Department prior to implementation.
43. Geomembrane seaming performed at sheet temperatures above or below those specified in this CQA/QC plan must follow an industry standard method approved by the Department prior to implementation.
44. Specifications for seaming of nonwoven geotextiles must be submitted and approved by the Department prior to implementation.
45. A cap panel layout plan must be submitted and approved by the Department prior to any placement of geomembrane.
46. LCRMS shall provide a closure schedule for the landfill cells, including phased portions of landfill cells that have reached final permitted contours (within 0 to 3 feet) in order to comply with 25 Pa. Code §273.234 (b). The schedule should also outline a timeline which addresses the remainder of the landfill footprint as the final permitted contours are reached. This schedule must be submitted to the Department within 6 months following issuance of this permit.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No. 100963
Date Issued April 1, 2020
Date Expires April 1, 2030

Stormwater Management

- 47. Precipitation collected in a disposal field may be handled by a sedimentation basin only if no wastes have been placed in that specific disposal field and no run-off from any other disposal field is occurring. Once waste is placed in a disposal field or run-off from other disposal areas is occurring, all water that is collected in the specific disposal field must be handled by the leachate collection system. Exceptions will be made only if tarps are used to divert stormwater and the stormwater is collected in sumps without contact with waste or leachate.
- 48. All erosion and sedimentation control structures including diversion and collection ditches, sedimentation basins and traps, silt fences, culvers and discharge structures shall be installed in accordance with the approved plans, 25 Pa. Code Chapter 102 and 25 Pa. Code § 273.151 and § 273.242 to § 273.244. All buried culverts and discharge pipes shall be installed such that they are protected from yielding, buckling and cracking.
- 49. Erosion and sedimentation control structures must be inspected on a regular basis during operation, closure and post closure periods. Inspections shall be conducted at least monthly and after each storm event as described in the Maintenance Program Section of Form I of the permit application. Any required maintenance shall be conducted immediately after the inspection.

Leachate

- 50. Records shall be kept on the amount of leachate recirculated, problems encountered due to pipe collapse or clogging, leachate outbreaks and leachate short circuiting and the method of correction of any problems. The records shall be kept on a monthly basis and retained at the facility for the life of the facility. These records shall be available for inspection by the Department or its representative upon request. Should the Department determine that leachate recirculation is creating environmental or operational issues, the Department may revoke leachate recirculation at this facility.
- 51. The leachate storage volume includes a 5.5 million-gallon leachate storage tank (once certified) and two leachate impoundments (1.05 million gallons and 1.125 million gallons). The collected raw leachate flow via a transmission main to either the West Branch Regional Authority or the Gregg Township Municipal Authority where the leachate will be treated.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

The leachate storage volume is to be utilized in accordance with 25 Pa. Code Chapter 273.275 (b). The operation of the site in regard to capping and open fields shall be in compliance with this utilization. This is to be evaluated by the permittee in conjunction with the Annual Report and submitted to the Department under separate cover.

52. Upon the total leachate storage capacity reaching or exceeding the 25% capacity per 25 Pa. Code §273. 275 (b), LCRMS must immediately notify the Department. Additionally, should LCRMS need to haul leachate in an emergency situation, written approval from the Department must be received by the permittee prior to trucking leachate.

Limits of Authorization

53. This authorization does not relieve the applicant from applying for and obtaining any additional permits or approvals from local, state or federal agencies required for this project. If any other permits are required for this project, they must be issued prior to undertaking the activities described in those permit applications.
54. Nothing in this permit shall be construed to supersede, amend or authorize violation of the provisions of any valid and applicable local law, ordinance or regulation provided that said local law, ordinance or regulation is not preempted by the Pennsylvania Solid Waste Management Act, the Act of July 7, 1980, P.L. 380, No. 97, 35 P.S. § 6018.101, et seq.
55. As a condition of this permit, and of the permittee's authority to conduct the activities authorized by this permit, the permittee hereby authorizes and consents to allow authorized employees or agents of the Department, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay, to have access to and to inspect all areas on which solid waste management activities are being or will be conducted. The authorization and consent shall include consent to collect samples of waste, water or gases, to take photographs, to perform measurements, surveys and other tests, to inspect any monitoring equipment, to inspect methods of operation, and to inspect and/or copy documents, books or papers required by the Department to be maintained. This permit condition is referenced in accordance with Section 608 and 610(7) of the Solid Waste Management Act, 35 P.S. §§ 6018.608 and 6018.610(7). This condition in no way limits any other powers granted under the Solid Waste Management Act.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No. 100963
Date Issued April 1, 2020
Date Expires April 1, 2030

56. Any alterations or additions to the permitted facility constitute major or minor modifications and the applicable documents must be provided. Any alterations or additions must be approved in writing as a permit modification by the Department prior to the change taking place. All future approved modifications will be listed in Appendix D and their respective conditions will be listed in the Attachment 1 to Appendix D.

57. All submissions required under this permit to the NCRO Waste Management Program shall be sent to the following address:

Department of Environmental Protection
Northcentral Regional Office Waste Management Program
208 West Third St., Suite 101
Williamsport, Pa. 17701

58. The activities authorized by this permit shall not harm or present a threat of harm to the health, safety, or welfare of the people or the environment of this Commonwealth. The Department may modify, suspend, revoke, or reissue the authorization granted in this permit if it deems such action is necessary to prevent harm or a threat of harm to the public or the environment, or if the activities cannot be adequately regulated under the conditions of this permit.

59. Approval of any plans or facility herein refers to functional design but does not guarantee stability or operational efficiency. Failure of the measures and facility herein approved to perform as intended, or as designed, or in compliance with the applicable Rules and Regulations of the Department, for any reason, shall be grounds for the revocation or suspension of this permit. Failure of the permittee to comply with the terms of the permit or conditions, or failure of the permittee to construct or operate the proposed facility in conformity with the approved plans shall be grounds for the revocation or suspension of this permit.

Waste Stream

60. No hazardous or toxic wastes or waste characteristic as identified in 25 Pa. Code Chapter 261a, may be managed or disposed of at this facility.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	<u>100963</u>
Date Issued	<u>April 1, 2020</u>
Date Expires	<u>April 1, 2030</u>

61. No lead acid batteries shall be placed into mixed waste at this facility, discarded, or otherwise disposed of at this facility.
62. The Form R Waste Analysis and Classification Plan that specifies the conditions for accepting Form U and Form-FC-1 waste, in addition to the generic residual and special handling residual waste streams is contained in Appendix C of this permit.
63. The Lycoming County Landfill is hereby authorized to accept the generic residual or special handling waste streams as specified in Table R-1, Table R-2, Table R-3, Table R-4 and Attachments in Appendix C of this permit, and with the following specific conditions for accepting wastes for disposal:
- h. All wastes for acceptance shall be consistent with the requirements stated Form R of the permit application, Waste Analysis and Classification Plan.
 - i. Submittals for the initial acceptance of individual generator wastes, identified in Table R-1, shall contain all information required by the respective forms and a signature of the official certifying the results for the generator.
 - j. Submittals for the initial acceptance shall include all applicable Form U parameters unless the absence of parameters is certified in writing by the generator. Absence of parameters refers to absence in leaching and not total concentration. Generator certifications of absence of specific parameters shall be based on generator knowledge or known chemical composition of the waste.
 - k. The minimum analytical requirements for initial waste characterization and reanalysis are designated in Table R-2. The results of the reanalysis shall be received by the permittee on or before the anniversary date of the Form U approval and shall be maintained at the permittee's site for five (5) years from the date the results were received. The results shall be made available to the Department upon request.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	<u>100963</u>
Date Issued	<u>April 1, 2020</u>
Date Expires	<u>April 1, 2030</u>

- l. All waste will be analyzed by a Department accredited laboratory using the most recently promulgated test method updates. Test methods will be either EPA methods or other methods acceptable to the Department.
- m. Waste acceptance limits shall be as designated in Table R-4.
- n. Total analyses, in mg/kg, may be reported in lieu of leaching analyses for metals or organics, provided that the results for the total concentration do not exceed twenty (20) times the 80% warning limits for waste acceptance as shown in Table R-4.
- o. The NCRO Waste Management Program shall be notified when the 80% warning limits of Table R-4 are met or exceeded, to review increased monitoring frequency and/or additional test parameters. If toxicity parameters are met or exceeded, the reanalysis may be a statistical treatment of the data.
- p. Additional analytical requirements for initial characterization and waste stream reanalysis shall be determined according to the procedures set forth in this permit.
- q. The NCRO Waste Management Program shall be notified immediately if a waste is accepted which is chemically incompatible with a waste already received at the facility. The permittee shall review with the NCRO Waste Management Program abatement alternatives for implementation. The permittee shall receive written approval from the NCRO Waste Management Program prior to implementation of any abatement alternatives.
- r. Mixing residual wastes from the same or different generator is acceptable, provided the permittee maintains proper records and can demonstrate waste stream tracking from the generation sources and complies with the Waste Management regulations. Commingling special handling wastes with other waste types and with other generator's wastes is acceptable only as specifically provided by Department regulations. Waste stream analyses must be performed prior to mixing.
- s. Form U's shall include separate residual waste code lists to identify Incidental/Small Quantity Process Waste.

This Permit is Non-TRANSFERABLE

Page 17 of 20

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

- t. Cement kiln residue (RWC212) from generators burning hazardous waste fuels or using waste as raw materials shall be evaluated on a case-by-case basis by the Department for acceptance and monitoring.
- u. In the event leachate treatment capability is reduced or more restrictive leachate discharge limitations are imposed by the Department or treatment facility, the permittee shall submit for review and written approval a permit modification application for the Form R leachate treatability to the NCRO Waste Management Program.
- v. If the permittee wants to modify the acceptance limit concentrations or chemical test parameters, a minor permit modification must be submitted to the NCRO Waste Management Program for review and written approval.
- w. Modifications of residual waste codes (RWC's), for acceptance of wastes for disposal not approved in the Waste Analysis and Classification Plan included in the permit application, or this permit, shall be a major permit modification, per 25 Pa. Code § 271.144.
- x. Written requests for minor permit modifications to accept or modify the acceptance of large quantity (>2,200 lb./mo.) residual or special handling waste, shall be submitted to the NCRO Waste Management Program on forms supplied by the Department, including Source Reduction Strategy.
- y. These written requests must be received by the NCRO Waste Management Program, through Greenport or by other acceptable means agreed up by the Department. If not acted upon by the Department, the requested waste may be accepted for disposal fifteen (15) Departmental working days after receipt of the written request.

If it is determined after the fifteen (15) Departmental working day period that waste accepted was not consistent with this Waste Analysis and Classification Plan or the design of the landfill site, the permittee shall be subject to any and all applicable enforcement actions of the Solid Waste Management Act or the Department's rules and regulations promulgated thereunder. The absence of an action by the

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

**Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8**

Permit No.	100963
Date Issued	April 1, 2020
Date Expires	April 1, 2030

Department during or after the waiting period does not constitute an approval or final action of the Department.

- z. The permittee shall not accept residual or special handling waste from any generator who has not provided a Form 26R to the permittee. Submittal of Form 26R to the permittee shall comply with the timetable established under 25 Pa. Code § 287.54(b).
- aa. The Form 26R shall include written documentation that the waste is not a hazardous waste per 25 Pa. Code § 271.1, and written documentation that the waste continues to meet the landfill's Form R waste acceptance criteria.
- bb. Form 26R analysis or certification required under 25 Pa. Code § 287.54 shall be maintained at the permittee's site for five (5) years from date of receiving the form and shall be made available to the Department upon request.
- cc. The permittee shall receive annually from small quantity residual waste generators and large quantity generators of small quantity waste types, written documentation that their waste is not hazardous waste under 25 Pa. Code § 261a, and written documentation that their waste continues to meet the landfill's Form R waste acceptance criteria. This documentation shall be maintained at the facility for five (5) years from the date of receiving the forms and shall be made available to the Department upon request. If documentation is not supplied to the permittee by the generator, the facility must no longer accept that waste until such time as the generator supplies it.
- dd. All Form U and special-handling waste Department forms, Form 25R, Form FC-1, and Form U-CS documents must be maintained at the facility for five (5) years from the date of receiving the forms and shall be made available to the Department upon request per 25 Pa. Code § 271.621.
- ee. The most recent sampling methods, analysis methods, Department forms and policies, shall be utilized at all times.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

Permit
For
Solid Waste Disposal and/or Processing Facility
FORM NO. 8

Permit No.	<u>100963</u>
Date Issued	<u>April 1, 2020</u>
Date Expires	<u>April 1, 2030</u>

- ff. Each laboratory analytical report shall be maintained at the permittee's site or submitted to the NCRO Waste Management Program in compliance with this permit and shall include the following information:
- i. Chain-of-custody form for each sample shipment
 - ii. Name, signature, and title identifying sampler on chain-of-custody form
 - iii. Description of the field sampling
 - iv. Proper analytical units on laboratory reports
 - v. Extraction, digestion, and analytical methods of all required parameters on laboratory reports
 - vi. Instrument detection/reporting limits for all required parameters on laboratory reports
 - vii. Sample collection date, laboratory sample received date, date of laboratory analysis for all individual parameters, to verify holding times, on laboratory reports
 - viii. Signature and title of the responsible laboratory representative on the laboratory reports
- gg. Acceptance limits for waste excluded from regulation as hazardous waste under 25 Pa. Code § 261.4(b) shall be based on limiting factors of applicable toxicity parameters, liner compatibility, leachate treatability, and waste-to-waste chemical compatibility.
- hh. The NCRO Waste Management Program shall be notified immediately when the permittee is aware of any of the following:
- i. waste is rejected
 - ii. waste failed on-site screening has been disposed
 - iii. unapproved waste has been accepted and disposed

Appendix A

Approved Geosynthetics For Lycoming County Landfill Liner System²

100 mil High Density Polyethylene (HDPE) Geomembranes

AGRU America HDPE Smooth Liner, manufactured by AGRU America.
AGRU America HDPE Micro Spike Liner, manufactured by AGRU America.
Solmax HDPE Smooth Liner, manufactured by Solmax international.
Solmax HDPE Textured DS, manufactured by Solmax International.
GSE HDPE Coextruded White and Black both Smooth and Textured material,
manufactured by GSE Lining Technology, Inc.
GSE HD, manufactured by GSE Technology, Inc.
GSE HD Textured, manufactured by GSE Technology, Inc.
Poly Flex Smooth HDPE Geomembrane, manufactured by Poly-Felt, Inc.
Poly Flex Textured HDPE Geomembrane, manufactured by Poly-Felt, Inc.

Geomembrane Tank Liner

GSE Studliner 200 mil HDPE, manufactured by GSE Technology, Inc.

Geonet

CETCO¹ Texdrain 200, manufactured by CETCO¹ Lining Technologies
AGRU America Geonet, manufactured by AGRU America
SKAPS Transnet 220, manufactured by SKAPS Industries
GSE PermaNet, manufactured by GSE lining Technology, Inc.
GSE Hypernet, manufactured by GSE Technology, Inc.

Geotextiles

CETCO¹ Geotex 1291 (12 oz/yd²), manufactured by Propex, Inc.
CETCO¹ Geotex 1071 (10 oz/yd²), manufactured by Propex, Inc.
CETCO¹ Geotex 1701 (16 oz/yd²), manufactured by Propex, Inc.
SKAPS GE-112 (12 oz/yd²), manufactured by SKAPS Industries
SKAPS GE-110 (10 oz/yd²), manufactured by SKAPS Industries
SKAPS GE-112 (16 oz/yd²), manufactured by SKAPS Industries
US Fabrics US-300NW (12 oz/yd²), manufactured by US Fabrics, Inc.
US Fabrics US-270NW (10 oz/yd²), manufactured by US Fabrics, Inc.
US Fabrics US-380NW (16 oz/yd²), manufactured by US Fabrics, Inc.
Amoco Types 4510, 4512 and 4516, polypropylene non-woven geotextile,
manufactured by Amoco Fabrics and Fiber Company
Spunbond 1135, 1142 and 1155, manufactured by Johns-Manville Corporation

Geosynthetic Clay Liner

Bentoliner NS, manufactured by GSE Lining Technology, Inc.

NAUX Bentofix manufactured by Naue Fasertechnik

Bentomat ST, manufactured by CETCO¹

Claymax, manufactured by Clem Environmental Corporation

Notes:

¹CETCO - Colloid Environmental Technologies Company

²Any geosynthetics that are approved for use in the liner system which are either no longer manufactured or the parent company is found to be no longer in business or merged with another company, prior to use of the new geosynthetic, the permittee must show that the new product is technically equivalent (physical, chemical, mechanical and thermal - refer to Form 24 Liner System – Phase II, 2540-PM-BWM0150).

Appendix B

List of Approved Equivalency Requests
for the Lycoming County Landfill

Attachment 1 to Appendix B

**Related Conditions for Equivalency Review Requests
for the Lycoming County Landfill**

(This attachment is reserved for conditions of future Equivalency Requests.)

Appendix C

Form R Tables

Waste Analysis and Classification Plan for Lycoming County Landfill **Waste Acceptance Tables and Attachments**

- Table R-1: Approved Residual Waste Codes
- Table R-2: Waste Code Testing/Reporting Frequency and Analytical Requirements
- Table R-3: Basis of Waste Acceptance Criteria
- Table R-4: Waste Acceptance Criteria
- Testing Reduction/Elimination Certification
- Non-Hazardous Waste Certification
- Contaminated Soil Sampling Protocol
- Contaminated Soil: Table 1: Residual Waste Categories and Abbreviated Testing Requirements
- Field Oversight for Contaminated Soil Characterization
- Contaminated Soil Pile or In-Situ Sampling

**Table R-1
Residual Waste Codes**

LYCOMING COUNTY LANDFILL

RWCs	Residual Waste Code (RWC) Description
001	Coal-derived bottom ash
002	Coal-derived fly ash
003	Flue gas desulfurization residue (Fgd)
004	Incinerator bottom ash
005	Incinerator fly ash
006	Incinerator mixed ash
007	Other ash (to be further specified)
101	Foundry sand
102	Slag
103	Refractory material
104	Grindings, shavings
105	Ferrous baghouse dust
106	Non-ferrous baghouse dust
107	Ferrous scrap, including auto recycle
108	Non-ferrous scrap
109	Sandblast abrasive and residue
110	Air emission control dust
111	Lubricating soaps
201	Water treatment sludge/sediment
203	Industrial wastewater treatment sludge, including acid mine drainage sludge
204	Metallurgical sludge
205	Food processing sludge
206	Paint, coating sludge and scale
207	Tank bottoms
208	Still bottoms (non-hazardous)
209	Oily sludge, petroleum derived
210	Air Emission control sludge (excluding FGD sludge and gypsum)
211	Other industrial sludge (to be further specified)
212	Lime/cement kiln scale, residue
213	Lime-stabilized spent pickle liquor
214	Cooling tower sediment/sludge
215	Flue Gas Desulfurization (FGD) sludge (including FGD gypsum)
301	Acidic chemicals (pH < 6)
302	Basic chemicals (pH > 8)
303	Combustible chemicals (non-hazardous)

RWCs	Residual Waste Code (RWC) Description
304	Chemical salts
305	Spent activated carbon (e.g., decoloring, filtering) For carbon/graphite scrap, see RWC 481
306	Surface coatings (e.g., solid/semi-solid paints, polishes, adhesives, inks, cans of hardened paint) For paint filters, see RWC 473
307	Filter media/aids (e.g., diatomaceous earth, ion exchange resins, silica gels, silica bead desiccant)
308	Spent dyes
310	Detergents, cleaning agents
311	Off-specifications products, intermediates (non-hazardous, further describe)
312	Pharmaceutical, biological wastes (manufacturing and lab wastes)
313	Wax, paraffin
318	Photographic chemicals (non-hazardous)
401	Leather wastes (for Cr tannery process sludges, see RWC 211)
402	Rubber, elastomer wastes, Latex
403	Wood wastes (scrap lumber, pallets, particle board)
404	Paper, cardboard wastes, laminated paper
405	Textile wastes including yarn, fabric, fiber, elastic
406	Glass wastes (cullet), excluding industrial refractory material
407	Polyethylene, polystyrene, polyurethane, and other non-halogenated plastics
408	Glass reinforced plastics
409	Halogenated plastics (e.g. PVC, Teflon, CPE)
410	Electronic component wastes (e.g. off-spec semiconductors, circuit boards)
411	Agricultural wastes (e.g. fertilizers, pesticides ¹ , feed, feed supplements)
412	Photographic wastes (e.g. film, photographic paper)
413	Asphalt (bituminous), asphalt shingles
414	Ceramic wastes
415	Linoleum wastes
416	Thermal insulation wastes (cellulose, glass, wool)
417	Wiring, conduit, electrical insulation
418	Sawdust, including wood shavings/turnings
419	Empty containers, metallic and non-metallic drums and pails. (For containers with contents, choose appropriate waste code for contents)
424	Treated wood, railroad ties
430	Food waste (for food processing wastewater treatment sludges, see RWC 205)
440	Resins, (Epoxy waste)
450	Polymers (other than 407, 409)
460	Vinyl (sheet, upholstery)
470	Spent filters - air/gas

RWCs	Residual Waste Code (RWC) Description
471	Spent filters - aqueous
472	Spent filters- non-hazardous fuel, oil, solvent
473	Paint filters, other cloth/paper filters, supersacs
474	Grease
480	Refractory (furnace, boiler), other than RWC 103
481	Carbon/graphite residue/scrap
482	Baghouse dust, other than RWC's 105 and 106
483	Blasting abrasive/residue, other than RWC 109
484	Gypsum plaster molds
501	Asbestos-containing waste (e.g. insulation, brake lining, etc.)
502	PCB-containing waste
503	Oil-contaminated waste (e.g. spent absorbent, oily rags)
505	Spent catalysts
506	Contaminated soils/debris/spill residues (nonpetroleum), dredged material, water intake debris and sediment, coal mill rejects
507	Waste petroleum material contaminated soil/debris
508	Virgin petroleum fuel contaminated soil and debris
510	Waste Tires (excluding whole tires, except as provided in Act 190)
701	Pumping, piping, vessels, instruments, storage tanks
702	Scrap materials from maintenance, product turnaround
703	Batteries ¹ - non-hazardous (excluding lead acid batteries per §273.201(h))
704	Grinding wheels, sanding disks, polishing belts, welding rods, broken tools
710	Plant trash
801	Non-oil and Gas Well Drilling Waste – includes drilling fluids, residuals, and drill cuttings from monitoring well and drinking water well construction.
802	Produced Fluid – includes flow-back, brine and any other formation fluids recovered from the wellbore. Flow-back is defined as fracturing/stimulation fluids, including any colloidal and suspended solids within the fluid, recovered from the wellbore after injection into the wellbore.
803	Drilling Fluid Waste (oil & gas drilling mud, other drilling fluids other than fracking fluid and spent lubricant)
804	Wastewater Treatment Sludge – sludge and solids generated during the processing of any oil and gas-related wastewater including any sediment generated during storage of oil and gas-related wastewater. Mixed loads of wastewater treatment sludge with other waste for disposal purposes, such as filter socks (RWC 812), will be coded as RWC 804.
805	Unused Fracturing Fluid Waste - oil and gas fracturing/stimulation fluid waste and fracturing sand waste that has not been injected into a wellbore.
806	Synthetic Liner Materials – includes well site liners, liners used in pits or other approved storage structures, freshwater impoundments, centralized impoundments, or used in conjunction with primary containers.

RWCs	Residual Waste Code (RWC) Description
807	Sediment from Production Storage – sediment from storage of marketable oil and gas products. Does not include sediment from oil and gas related wastewater storage.
808	Servicing Fluid – oil and gas production well maintenance/work over fluids, oil/water-based mud and foam and well cellar cleanout waste after drilling operation have been completed. Does not include well cellar cleanout waste covered under existing RWCs, well cellar fluids that are recycled/reused, or rainwater that is collected in a well cellar that has not been mixed with a residual waste.
809	Spent Lubricant Waste (spent oil & gas drilling lubricants, spent plug drilling lubricants)
810	Drill Cuttings (oil & gas drill cuttings using a drilling mud formula)
811	Soil Contaminated by oil and Gas-related Spills – Soil contaminated by spills of RWCs 802, 803, 805, 807, 808, 809 and 810. Soils contaminated by spills of RWC 804 will be coded using RWC 804. Soil contaminated by spills of RWC 812 will be coded using RWC 812.
812	Filter Socks – Filters, filter socks and other media used to filter any oil and gas-related wastewater. Does not include filter socks mixed with RWC 804 for disposal purposes. Except where filter socks are mixed with RWC 804 and coded as RWC 804, mixed loads of RWC 812 with other waste for disposal purposes, such as drill cuttings, will be coded as RWC 812.
899	Other Oil and Gas Wastes – all remaining oil and gas wastes other than those already covered under existing RWCs. Includes containment water. Does not include rainwater that is collected in a containment area that has not been mixed with residual waste.
901	Auto shredder “fluff”
902	Non-hazardous residue from treatment of hazardous waste, other than RWC 203. (Treated hazardous waste residue should include land ban certification as required.)
35	Processed infectious/chemotherapeutic waste
36	Municipal waste incinerator ash
43	Sewage sludge

¹ Unless acceptance is restricted by the Universal Waste Rule.

**Table R-2
Waste Code Testing/Reporting Frequency and Analytical Requirements**

LYCOMING COUNTY LANDFILL

RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq
Code	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹	or TOX ¹	CN S	PCB	O&G TPH	Retest ⁵
001	X			X	X	X		X	X		X	X		X	X	I
002	X			X	X	X		X	X		X	X		X	X	I
003	X			X	X	X		X	X		X	X		X	X	I
004	X			X	X	X		X	X		X	X		X	X	I
005	X			X	X	X		X	X		X	X		X	X	I
006	X			X	X	X		X	X		X	X		X	X	I
007	X			X	X	X		X	X		X	X		X	X	I
101	X	X		X	X	X		X	X					X		I
102	X	X		X	X	X		X	X					X		I
103	X	X		X	X	X		X	X					X		I
104	X	X		X	X	X		X	X					X		I
105		X		X	X	X		X	X					X		I
106		X		X	X	X		X	X					X		I
107	X	X		X	X	X		X	X					X		I
108	X	X		X	X	X		X	X					X		I
109	X	X		X	X	X		X	X					X		II
110		X		X	X	X		X	X					X		I
111				X	X	X		X	X					X		I
201	X			X	X	X		X	X					X		I

Waste Code Testing/Reporting
Lycoming County Landfill

RW Code	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq
	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹	or TOX ¹	CN S	PCB	O&G TPH	Retest ⁵
203	X				X	X			X					X		I
204	X			X	X	X		X	X					X		I
205	X			X	X	X		X	X					X		I
206					X	X			X					X		I
207					X	X			X					X		I
208					X	X			X					X		I
209					X	X			X					X		I
210	X	X		X	X	X		X	X					X		I
211					X	X			X					X		I
212	X	X		X	X	X		X	X					X		I
213	X			X	X	X		X	X					X		I
214	X			X	X	X		X	X					X		I
215	X	X		X	X	X		X	X					X		I
301				X	X	X		X	X					X		I
302				X	X	X		X	X					X		I
303				X	X	X		X	X					X		I
304				X	X	X		X	X					X		I
305				X	X	X		X	X					X		I
306					X	X			X					X		I
307					X	X		X	X					X		I
308					X	X			X					X		I

Waste Code Testing/Reporting
Lycoming County Landfill

RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq
Code	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹	or TOX ¹	CN S	PCB	O&G TPH	Retest ⁵
310				X	X	X		X	X					X		I
311				X	X	X		X	X					X		I
312				X	X	X		X	X					X		I
313		X	X	X	X	X	X	X	X				X	X		I
318				X	X	X		X	X					X		I
401	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
402	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
403	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
404	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
405	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
406	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
407	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
408	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
409	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
410	X	X		X	X	X		X	X	X			X	X	X	I
411	X	(Pest)	(Pest)	X	X	(Pest)	(Pest)	X	Phenols (Pest)		(Pest)	(Pest)	(Pest)	X	(Pest)	I
412				X	X	X		X	X					X		I
413																
414	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
415	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq

Waste Code Testing/Reporting
Lycoming County Landfill

RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq
Code	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹	or TOX ¹	CN S	PCB	O&G TPH	Retest ⁵
502	X					X		ETX	X		X	X	X			III
503	Use Most Recent Form U-CS & Attachment I Procedures for RWC 503															IV
505				X	X	X		X	Phenols					X		I
506	Use Most Recent Form U-CS & Attachment I Procedures for RWC 506															IV
507	Use Most Recent Form U-CS & Attachment I Procedures for RWC 507															IV
508	Use Most Recent Form FC-1 & Procedures for RWC 508															IV
510																
701	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
702	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
703	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
704	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	I
710																V
801	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	VI
802 ^{2,3}						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl				X	O&G + Diesel TPH	II
803						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl				X		II
804						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl				X	O&G + Diesel TPH	VII VIII IX, X XI
RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS				Freq

Waste Code Testing/Reporting
Lycoming County Landfill

Code	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹ or TOX ¹	CNS	PCB	O&G TPH	Retest ⁵
805						X							X		II
806															II
807						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
808						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
809						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
810						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	IX X XI
811						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
812						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
899						X	+ Sr	Diesel range short list ⁴	Diesel range short list ⁴	+ Cl			X	O&G + Diesel TPH	II
901				X	X	X		X	Phenols				X		I

Waste Code Testing/Reporting
Lycoming County Landfill

RW	CHAR		RCRA TOXICITY				NON-RCRA TOXICITY			ASTM LEACH		TOTALS			Freq	
Code	Ign	Free Liq	Metals	Vols	Semi Vols	Herb Pest	Metals	Vols	Semi Vols	Corr pH	TOX ¹	or TOX ¹	CN S	PCB	O&G TPH	Retest ⁵
902			(if treated for)	(if treated for)	(if treated for)	(if treated for)		X	Phenols					(if treated for)		I
35	Forms 40 and 44 for incineration, Form 40 for autoclaving															XII
36	Form 41 Parameters (No certifications in lieu of testing. This is considered a variable wastestream)															XIII
43	Form 43 Parameters															

KEY:

X	<p>INITIAL CHARACTERIZATION TESTING OR GENERATOR CERTIFICATION: Initial waste stream characterization may be certified in writing through generator knowledge in lieu of testing. Certification may be made if the process by which the waste was generated is known, the process has not changed, the waste's composition is known, and has not changed. Certification based on known composition must either be for absence of the parameter or absence of its leaching in the waste stream.</p>
	<p>INITIAL CHARACTERIZATION TESTING WITH LIMITED GENERATOR CERTIFICATION. ROUTINE MONITORING TESTING REQUIRED UNLESS GENERATOR CERTIFICATION: Initial Generator Certifications are restricted to known composition and must either be for absence of the parameter in the waste stream or absence of parameter leaching in the waste stream. Routine monitoring generator knowledge would be based on known composition, certification that the process and waste stream composition have not changed.</p>

- (I) A complete Form U reanalysis is required once every five years to verify certifications, due on or before the anniversary date of original Form U approval. This is not required for parameters at or below 30% of Form R acceptance limiting criteria, if waste generating process is certified as not having changed. Results shall be filed at your facility and be made available upon request.
- (II) Tested per disposal event, per generator location.
- (III) Tested per disposal event, per generator location. If the waste is PCB-contaminated soil, follow RWC 506 for sampling and chemical monitoring requirements.
- (IV) Contaminated soils are to be tested per clean-up event, per generator location.
- (V) Form U approval for plant trash generated from oil & gas industry operations is required to be submitted for approval minimally on a countywide basis as the generation source.
- (VI) Test parameters depend on contaminants in groundwater. Initial characterization parameters may be reduced or dropped for monitoring well and potable water well drilling residues.
- (VII) Oil & gas industry hydro-fracture water is tested per well, per generator.
- (VIII) Flow-back hydro-fracture water treatment sludge is tested monthly from fixed treatment generators and per disposal event from mobile treatment generators. This treatment sludge is to be tested for TENORM parameters. Monthly reporting to the Department may be required once sludge is approved.

Waste Code Testing/Reporting
Lycoming County Landfill

- (IX) Oil & gas drill cuttings and hydro-fracture flow-back sands are tested per well pad, per generator.
- (X) Test samples of drill cuttings and hydro-fracture flow-back sands shall be from within the geologic formation for oil/gas extraction and which utilize lubricants and other additives in the drilling mud. Samples shall be representative of the deepest horizontal drilling/fracturing or deepest vertical drilling/fracturing if horizontal drilling is not performed.
- (XI) For chemical characterization of drill cuttings and hydro-fracture flowback sands as new waste types, initial analytical testing shall be of that first well pad. Requests for these wastestreams at the second well pad shall include submittal of the chemical characterization analytical testing from the first well pad. Subsequent wastestream requests shall continue in this manner, submitting the chemical characterization analytical testing for the most recent previous well pad as the characterization analytical with the current well pad wastestream request. Simultaneous development of multiple well pads could result in multiple analytical reports in subsequent requests or multiple requests based on a single previous analysis, as long as analytical representing all well pads is received once and promptly. Sample results for these wastes from the final well pad constructed by the generator, or from a well pad submittal that has gone beyond ninety days without a subsequent well pad development, shall be submitted to the Department within thirty days after Department determination of their disposal request. Unacceptable analytical chemistry for wastestream characterization requests shall require wastestream chemical characterization retesting at the previous well pad where analytical was obtained and used for temporary certification, and chemical characterization analytical testing shall be required at the pending well pad being requested, all prior to Department approval, unless there is no activity at the previous well pad. In that event, retesting and submitting there shall occur prior to removing these wastestreams resulting from future drilling there.
- (XII) For incinerator ash, test ash chemistry annually on Form 44. For incinerator ash microbiological, test quarterly on Form 40. For autoclaving, test microbiological every forty (40) hours on Form 40.
- (XIII) You are required to receive quarterly monitoring chemistry from the ash generator, following Form 41 parameters. For start-up resource recovery facilities, sampling must meet the EPA's Guidance for *The Sampling and Analysis of Municipal Waste Combustion Ash for the Toxicity Characteristic*, June 1995. The ash generator must supply your disposal facility with the plan they follow for sampling their ash for disposal at your facility.

Endnotes

¹ Organic scans for TCLP halogens may be used to certify "known composition" of the TOX indicator parameter. This is allowed because TOX is not a required parameter for wastestream characterization but may be required as an indicator parameter for monitoring. Analysis for TOX may be performed using the ASTM Leach or Total TOX test methods.

² Specific wastestreams excluded as hazardous solid waste per 261.4(b)(5) may be characterized by total analysis rather than TCLP leach analysis.

³ For releases to soil or water of the environment, see Attachment I - Non-hazardous Contaminated Soil, 506 Contaminated Soil/Debris/Spill Residue (Non-Petroleum) From Non-Hazardous Spills Containing (from RWC 800).

⁴ See Department Storage Tank Program diesel range short list. Use most current list.

⁵ An updated Form U must be submitted to the Department for approval for any change in characterization of the waste stream, including process changes. For an existing Form U to remain in effect, all sampling and reporting requirements of §297.54 must be met.

Table R-3
Basis of Waste Acceptance Criteria
LYCOMING COUNTY LANDFILL

Waste Characteristics

Corrosivity		pH > 2 ¹			1,6
Free Liquids		No Free Liquids			1
Ignitability		Non-Ignitable			1,2
		Non-Oxidizer			1,2
Reactivity	• Sulfide	500 mgH ₂ S/kg			1,2,5
	• Cyanide	250 mgHCN/kg			1,2,5

Toxicity Characteristic Inorganics

Arsenic	<5.00	15.00 ²	0.26	2
Barium	<100.00	120.00		2
Cadmium	<1.00	540.00 ³	0.09	2
Chromium	<5.00	11.00	7.44	2
Lead	<5.00	3.00	1.04	2
Mercury	<0.20	540.00 ⁴	0.10	2
Selenium	<1.00	15.00 ⁵	0.19	2
Silver	<5.00	12.00 ⁶		2

Inorganics⁷

Aluminum		540.00 ⁸		
Antimony		15.00		
Beryllium		120.00 ⁹		
Boron		540.00 ¹⁰		
Cobalt		25.00 ¹¹		
Copper		12.00	10.57	4
Iron		3,600.00		
Manganese		120.00		
Molybdenum		3.00		
Nickel		25.00	2.60	4
Thallium		3.00 ¹²		
Tin		3.00 ¹³		
Vanadium		11.00 ¹⁴		
Zinc		540.00	19.73	4

Toxicity Characteristic Volatile Organics

Benzene	<0.50	0.78		2
Carbon Tetrachloride	<0.50	0.40		2
Chlorobenzene	<100.00	18.00		2
Chloroform	<6.00	6.90		2
1,2-Dichloroethane	<0.50	16.00		2
1,1-Dichloroethene	<0.70	16.00 ¹⁵		2

Parameters	Toxicity Limits (mg/L)	Liner Compatibility Limits (mg/L)	Leachate Treatability Limits (mg/L)	Basis
Methyl Ethyl Ketone	<200.00	13.00		2
Tetrachloroethene	<0.70	0.55		2
Trichloroethene	<0.50	0.70		2
Vinyl Chloride	<0.20	16.00 ¹⁶		2
Volatile Organics				
Acetone		14.00		3
Chloromethane		0.12		3
bis(Chloromethyl)ether		0.045 ¹⁷		3
1,2-Dibromoethane (Ethylene dibromide)		16.00 ¹⁸		3
Dibromomethane		14.00 ¹⁹		3
1,1-Dichloroethane		10.40		3
cis-1,2-Dichloroethene		0.36		3
trans-1,2-Dichloroethene		0.68		3
cis-1,3-Dichloropropene		16.00 ²⁰		3
Ethylbenzene		2.50		3
Heptane		0.06		3
Hexane		0.06		3
2-Hexanone		13.00 ²¹		3
Isopropylbenzene (Cumene)		2.50 ²²		3
Methylene Chloride		14.00		3
4-Methyl-2-pentanone		13.00 ²³		3
Methyl-tert-butyl ether (MTBE)		13.00 ²⁴		3
Octane		0.05		3
1-Propanol		0.10 ²⁵		3
2-Propanol		0.10 ²⁶		3
Styrene		0.16		3
Tetrachloroethane		0.50		3
Tetrahydrofuran		0.080 ²⁷		3
Toluene		15.00		3
1,1,1-Trichloroethane		1.28		3
1,1,2-Trichloroethane		0.43		3
1,2,3-Trichloropropane		1.20 ²⁸		3
1,2,4-Trimethylbenzene		2.50 ²⁹		
1,3,5-Trimethylbenzene		2.50 ³⁰		
Xylenes		0.26		3

Parameters	Toxicity Limits (mg/L)	Liner Compatibility Limits (mg/L)	Leachate Treatability Limits (mg/L)	Basis
------------	------------------------	-----------------------------------	-------------------------------------	-------

Toxicity Characteristic Semi-volatile Organics

Cresol	<200.00	0.68		3
o-Cresol	<200.00	0.68		3
m-Cresol	<200.00	0.68		3
p-Cresol	<200.00	0.68		3
1,4-Dichlorobenzene	<7.50	0.80		2
2,4-Dinitrotoluene	<0.13	0.08		2
Hexachlorobenzene	<0.13	0.20		2
Hexachlorobutadiene	<0.50	0.42		2
Hexachloroethane	<3.00	0.60		2
Nitrobenzene	<2.00	0.56		2
Pentachlorophenol	<100.00	0.40		3
Pyridine	<5.00	0.64		2
2,4,5-Trichlorophenol	<400.00	0.30		3
2,4,6-Trichlorophenol	<2.00	0.30		2

Semi-volatile Organics

Acenaphthene		0.11		3
Anthracene		0.05		3
Benzo (a) anthracene		0.03		3
Benzo (a) pyrene		0.05		3
Benzo (b) fluoranthene		0.03		3
Benzo (g,h,i) perylene		0.05 ³¹		3
Butylbenzyl Phthalate		0.23		3
Chrysene		0.04		3
bis (2-Ethylhexyl)phthalate		0.89		3
Fluoranthene		0.05		3
Fluorene		0.05		3
Indeno (1,2,3-cd) pyrene		0.03 ³²		3
Isophorone		5.00		3
Naphthalene		0.28		3
di-n-Octyl Phthalate		0.35 ³³		3
Phenanthrene		0.06		3
Phenol		14.00		3
Pyrene		0.05 ³⁴		3

Toxicity Characteristic Pesticide Organics

Chlordane	<0.03	0.01		2
-----------	-------	------	--	---

Parameters	Toxicity Limits (mg/L)	Liner Compatibility Limits (mg/L)	Leachate Treatability Limits (mg/L)	Basis
2,4-D	<10.00	0.01 ³⁵		2
Endrin	<0.02	0.01		2
Heptachlor	<0.008	0.05		2
Lindane	<0.40	0.01		2
Methoxychlor	<10.00	0.05 ³⁶		3
Toxaphene	<0.50	0.05		2
2,4,5-TP (Silvex)	<1.00	0.01		2
Pesticide Organics				
4,4'-DDT		0.01		3
Water Leaching Tests³⁷				
Ammonia-Nitrogen		700.00		
Chloride		7,500.00		
Fluoride		460.00		
Nitrate		1.00		
Nitrite		1.00		
Oil and Grease		400.00 ³⁸		
Organic Halogen (TOX)				
PCBs			0.006 ³⁹	4
Petroleum Hydrocarbons (TPH)		135.00 ⁴⁰		
Solids, Suspended (TSS)				4
Sulfate		2,400.00		
Total Analyses				
Cyanides				
Oil and Grease		120,000.00 mg/kg ⁴¹		3
Organic Halogen (TOX)				
PCBs	< 50.00 mg/kg			1,2
Petroleum Hydrocarbons (TPH)		120,000.00 mg/kg ⁴²		3
Sulfides				

Table R-3
Basis of Waste Acceptance Criteria
LYCOMING COUNTY LANDFILL

Basis:

1. Regulatory Requirements.
2. Toxicity Limit.
3. (Liner Compatibility Limit) x (Dilution Attenuation Factor of 100).
4. (Leachate Treatability Limit) x (Dilution Attenuation Factor of 100).
5. Safety Limits, found in SW-846 analytical methods
6. Waste of extreme pH must be chemically compatible with other waste disposed at the landfill.

¹ Hazardous Waste Regulation 261.22 does not apply for solid wastes that are not aqueous. Therefore, an upper pH limit of 12.5 is not appropriate. However, maintaining a lower pH limit is appropriate, due to corrosive characteristic of strong acids, compatibility problems with more alkaline wastes, and leachability of metals at low pH.

² Liner compatibility value for arsenic is based on antimony.

³ Liner compatibility value for cadmium is based on zinc.

⁴ Liner compatibility value for mercury is based on zinc.

⁵ Liner compatibility value for selenium is based on antimony.

⁶ Liner compatibility value for silver is based on copper.

⁷ Liner compatibility limits for inorganics were not included in acceptance limits for Table R4 since the Department's worst-case leachate list does not include inorganics. Inorganics are not known to degrade landfill liner systems.

⁸ Liner compatibility value for aluminum is based on zinc.

⁹ Liner compatibility value for beryllium is based on barium.

¹⁰ Liner compatibility value for boron is based on zinc.

¹¹ Liner compatibility value for cobalt is based on nickel.

¹² Liner compatibility value for thallium is based on lead.

¹³ Liner compatibility value for tin is based on lead.

¹⁴ Liner compatibility value for vanadium is based on chromium.

¹⁵ Liner compatibility value for 1,1-dichloroethene is based on 1,2-dichloroethane.

¹⁶ Liner compatibility value for vinyl chloride is based on 1,2-dichloroethane.

¹⁷ Liner compatibility value for bis(Chloromethyl)ether is based on bis(2-chloroisopropyl)ether.

¹⁸ Liner compatibility value for 1,2-dibromoethane is based on 1,2-dichloroethane.

¹⁹ Liner compatibility value for Dibromomethane is based on Methylene chloride.

²⁰ Liner compatibility value for cis-1,3-dichloropropene is based on 1,2-dichloroethane.

²¹ Liner compatibility value for 2-hexanone is based on MEK.

²² Liner compatibility value for Cumene is based on Ethylbenzene.

²³ Liner compatibility value for 4-methyl-2-pentanone is based on MEK.

²⁴ Liner compatibility value for MTBE is based on MEK.

²⁵ Liner compatibility value for 1-Propanol is based on Isopropyl alcohol.

²⁶ Liner compatibility value for 2-Propanol is based on Isopropyl alcohol.

²⁷ Liner compatibility value for Tetrahydrofuran is based on Ethyl ether.

²⁸ Liner compatibility value for 1,2,3-Trichloropropane is based on Dichloropropane.

²⁹ Liner compatibility value for 1,2,4-Trimethylbenzene is based on ethylbenzene.

³⁰ Liner compatibility value for 1,3,5-Trimethylbenzene is based on ethylbenzene.

³¹ Liner compatibility value for benzo (g,h,i) perylene is based on benzo (a) pyrene.

³² Liner compatibility value for indeno (1,2,3-cd) pyrene is based on benzo (b) fluoranthene.

³³ Liner compatibility value for di-n-Octyl phthalate is based on Diethyl phthalate.

³⁴ Liner compatibility value for pyrene is based on benzo (a) pyrene.

³⁵ Liner compatibility value for 2,4-D is based on 2,4,5-TP LOQ.

³⁶ Liner compatibility value for methoxychlor is based on heptachlor LOQ.

³⁷ Liner compatibility limits for inorganic indicator parameters were not included in acceptance limits for Table R4 since the Department's worst-case leachate list does not include inorganic indicator parameters. Inorganic indicator parameters are not known to degrade landfill liner systems.

³⁸ Exceeds solubility limit of BTEX in water. Therefore, regulate Oil & Grease by total analysis.

³⁹ A 100X DAF results in a concentration of 0.6 mg/L. This exceeds the solubility limit of PCB's in water. Regulate by PCB total concentration limit.

⁴⁰ Approximate solubility limit of BTEX in water. A 100x DAF results in a limit that well exceeds the solubility limit of BTEX in water, therefore regulate TPH by total analysis.

⁴¹ Exceeding 12% content in waste could approach ignitability of a solid

⁴² Exceeding 12% content in waste could approach ignitability of a solid

**Table R-4
Waste Acceptance Criteria**

LYCOMING COUNTY LANDFILL

Parameter		Warning Limits (mg/L)	Acceptable Limits (mg/L)
Waste Characteristics			
Corrosivity		pH < 3	pH > 2
Free Liquids			No Free Liquids
Ignitability			Non-Ignitable, Non-Oxidizer
Reactivity	<ul style="list-style-type: none"> • Sulfide • Cyanide 	400 mgH ₂ S/kg 200 mgHCN/kg	500 mgH ₂ S/kg 250 mgHCN/kg
Toxicity Characteristic Inorganics			
Arsenic		4.00	<5.00
Barium		80.00	<100.00
Cadmium		0.80	<1.00
Chromium		4.00	<5.00
Lead		4.00	<5.00
Mercury		0.16	<0.20
Selenium		0.80	<1.00
Silver		4.00	<5.00
Inorganics			
Copper		845.60	1,057.00
Nickel		208.00	260.00
Zinc		1,578.40	1,973.00
Toxicity Characteristic Volatile Organics			
Benzene		0.40	<0.50
Carbon Tetrachloride		0.40	<0.50
Chlorobenzene		80.00	<100.00
Chloroform		4.80	<6.00
1,2-Dichloroethane		0.40	<0.50
1,1-Dichloroethene		0.56	<0.70
Methyl Ethyl Ketone		160.00	<200.00
Tetrachloroethene		0.56	<0.70
Trichloroethene		0.40	<0.50
Vinyl Chloride		0.16	<0.20
Volatile Organics			
Acetone		1,120.00	1,400.00
Chloromethane		9.60	12.00
bis(Chloromethyl)ether		3.60	4.50
1,2-Dibromoethane (Ethylene		1,280.00	1,600.00

Parameter	Warning Limits (mg/L)	Acceptable Limits (mg/L)
dibromide)		
Dibromomethane	1,120.00	1,400.00
1,1-Dichloroethane	832.00	1,040.00
cis-1,2-Dichloroethene	28.80	36.00
trans-1,2-Dichloroethene	54.40	68.00
cis-1,3-Dichloropropene	1,280.00	1,600.00
Ethylbenzene	200.00	250.00
Heptane	4.80	6.00
Hexane	4.80	6.00
2-Hexanone	1,040.00	1,300.00
Isopropylbenzene (Cumene)	200.00	250.00
Methylene Chloride	1,120.00	1,400.00
4-Methyl-2-pentanone	1,040.00	1,300.00
Methyl-tert-butyl ether (MTBE)	1,040.00	1,300.00
Octane	4.00	5.00
1-Propanol	8.00	10.00
2-Propanol	8.00	10.00
Styrene	12.80	16.00
Tetrachloroethane	40.00	50.00
Tetrahydrofuran	6.40	8.00
Toluene	1,200.00	1,500.00
1,1,1-Trichloroethane	102.40	128.00
1,1,2-Trichloroethane	34.40	43.00
1,2,3-Trichloropropane	96.00	120.00
1,2,4-Trimethylbenzene	200.00	250.00
1,3,5-Trimethylbenzene	200.00	250.00
Xylenes	20.80	26.00

Toxicity Characteristic Semi-volatile Organics

Cresol	54.40	68.00
o-Cresol	54.40	68.00
m-Cresol	54.40	68.00
p-Cresol	54.40	68.00
1,4-Dichlorobenzene	6.00	<7.50
2,4-Dinitrotoluene	0.10	<0.13
Hexachlorobenzene	0.10	<0.13
Hexachlorobutadiene	0.40	<0.50
Hexachloroethane	2.40	<3.00

Parameter	Warning Limits (mg/L)	Acceptable Limits (mg/L)
Nitrobenzene	1.60	<2.00
Pentachlorophenol	32.00	40.00
Pyridine	4.00	<5.00
2,4,5-Trichlorophenol	24.00	30.00
2,4,6-Trichlorophenol	1.60	<2.00
Semi-volatile Organics		
Acenaphthene	8.80	11.00
Anthracene	4.00	5.00
Benzo (a) anthracene	2.40	3.00
Benzo (a) pyrene	4.00	5.00
Benzo (b) fluoranthene	2.40	3.00
Benzo (g,h,i) perylene	4.00	5.00
Butylbenzyl Phthalate	18.40	23.00
Chrysene	3.20	4.00
bis (2-Ethylhexyl)phthalate	71.20	89.00
Fluoranthene	4.00	5.00
Fluorene	4.00	5.00
Indeno (1,2,3-cd) pyrene	2.40	3.00
Isophorone	400.00	500.00
Naphthalene	22.40	28.00
di-n-Octyl Phthalate	28.00	35.00
Phenanthrene	4.80	6.00
Phenol	1,120.00	1,400.00
Pyrene	4.00	5.00
Toxicity Characteristic Pesticide Organics		
Chlordane	0.024	<0.03
2,4-D	0.80	1.00
Endrin	0.016	<0.02
Heptachlor	0.006	<0.008
Lindane	0.32	<0.40
Methoxychlor	4.00	5.00
Toxaphene	0.40	<0.50
2,4,5-TP (Silvex)	0.80	<1.00
Pesticide Organics		
4,4'-DDT	0.80	1.00
Water Leaching Tests		
Organic Halogen (TOX) ¹	>100.00 mg/L	

Parameter	Warning Limits (mg/L)	Acceptable Limits (mg/L)
pH	pH < 3	pH > 2
Solids, Suspended (TSS)	32,000.00	40,000.00
Total Analyses		
Cyanides ²	>50.00 mg/kg	
Metals ³	20 x 80% “trigger” values	
Oil and Grease ⁴	96,000.00	120,000.00
Organic Halogen (TOX) ⁵	>100.00 mg/kg	
PCBs	40.00 mg/kg	< 50.00 mg/kg
Pesticides ⁶	20 x 80% “trigger” values	
Petroleum Hydrocarbons(TPH) ^{7,8}	96,000.00	120,000.00
Semi-Volatiles ⁹	20 x 80% “trigger” values	
Sulfides ¹⁰	>100.00 mg/kg	
Volatiles ¹¹	20 x 80% “trigger” values	

¹ Exceeding 100 mg/L TOX on any waste shall “trigger” organic scans. On a case-by-case basis, additional test parameters may include volatile and semi-volatile scans.

² Exceeding 50 mg/kg total CN on any waste shall “trigger” reactive cyanide testing.

³ “Triggering” for any waste requires leaching of the eight RCRA metals. Additional metals should be extracted dependent on suspected contaminant.

⁴ Exceeding 120,000 mg/kg Oil & Grease on any waste requires TPH analysis.

⁵ Exceeding 100 mg/kg TOX on any waste shall “trigger” organic scans. On a case-by-case basis, additional test parameters may include volatile and semi-volatile scans.

⁶ “Triggering” for any waste requires leachable pesticide testing.

⁷ Total TPH exceeding 120,000 mg/kg for any waste will be evaluated on a case-by-case basis. Additional test parameters may include Ignitability of Solids Test, volatile, and semi-volatile scans.

⁸ Total TPH is to be measured on a dry weight basis.

⁹ “Triggering” for any waste requires leachable semi-volatile testing.

¹⁰ Exceeding 100 mg/kg total S²⁻ on any waste shall “trigger” reactive sulfide testing.

¹¹ “Triggering” for any waste requires leachable volatile testing.

TESTING REDUCTION/ELIMINATION CERTIFICATION**Check (X) all applicable****Generator:** _____**Waste:** _____**Disposal Facility:** _____

The generator hereby certifies that the Form R chemical parameters, not shown as tested in this application for our above-named waste, are being certified in lieu of analysis, on the following bases:

I. INITIAL WASTESTREAM CHARACTERIZATION:**1. Generator Knowledge:**

- The chemicals are not used in our production process. There is no reason to expect presence of these parameters in the waste. This certification is based on our knowledge of the production process and review of MSDS's for the raw materials used in the part of our process generating this waste. This certification is limited to the levels of accuracy for any instrumentation used and reporting requirements for MSDS's required of the manufacturers of our raw materials by the State and Federal governments.

2. Known Chemical Composition:

- The parameters are of known chemical concentrations or are leaching N/D, based on recent chemical analyses performed on _____. This wastestream is of known composition and remains acceptable for disposal at the above-named facility.

II. APPROVED WASTESTREAM MONITORING:**1. Generator Knowledge.** (Pertains to parameters on Table R-2 of the permit):

- The chemicals are not used in our production process. There is no reason to expect presence of these parameters in the waste. This certification is based on our knowledge of the production process and review of MSDS's for the raw materials used in the part of our process generating this waste. This certification is limited to the levels of accuracy for any instrumentation used and reporting requirements for MSDS's required of the manufacturers of our raw materials by the State and Federal governments.
- The chemical parameters have not changed in concentration from the original chemical characterization performed on _____. We know this because the process by which the above-named waste was generated has not changed since the original wastestream chemical characterization.

2. Known Chemical Composition. (Pertains to parameters on Table R-2 of the permit):

- The chemical parameters are of known chemical concentrations or are leaching N/D, based on recent chemical analyses performed on _____. This wastestream is of known composition and remains acceptable for disposal at the above-named facility.

III. ONCE EVERY FIVE-YEAR REANALYSIS TO VERIFY CERTIFICATIONS:**1. Parameters N/D Leaching or Within 30% of Form R Limiting Criteria**

- Untested chemical parameters remain within 30% of the named disposal facility's approved Form R limiting criteria and need not undergo reanalysis at this time. We know this because the parameters were certified N/D or tested within 30% of the named disposal facility Form R limiting criteria at the time of last analysis on _____, and the process generating the waste has not changed since then.

Name of Generator's Certifying Official: _____**Title of Generator's Certifying Official:** _____**Signature of Generator Official:** _____**Date:** _____

NON-HAZARDOUS WASTE CERTIFICATION

Check (X) all applicable

Generator: _____

Waste: _____

Waste Code: _____

Disposal Facility: _____

1. Generator Knowledge:

The generator hereby certifies that the _____ is non-hazardous. This certification is based on our knowledge of the production process and review of MSDS's for the raw materials used in the part of our process generating this waste. This certification is limited to the levels of accuracy for any instrumentation used and reporting requirements for MSDS's required of the manufacturers of our raw materials by the State and Federal governments.

2. Known Chemical Composition:

The generator hereby certifies that the _____ is non-hazardous. This certification is based on review of pertinent MSDS's, "spec" sheets, and/or testing. The waste is of known composition. TCLP metals, ZHE volatile or semi-volatile organics, herbicides, pesticides, or PCB's are not present from sources, or at levels that would make the above wastestream a listed or characteristic hazardous waste.

Name of Generator's Certifying Official: _____

Title of Generator's Certifying Official: _____

Signature of Generator Official: _____

Date: _____

Contaminated Soil Sampling Protocol
PCB-Containing Waste – Soil/Debris (RWC 502)
Non-hazardous Chemical (RWC 506)
Waste Petroleum (RWC 507)
Virgin Petroleum Fuel (RWC 508)

LYCOMING COUNTY LANDFILL

Regardless of the sampler, the following procedures are to be used in collecting Non-hazardous Contaminated Soil samples:

1. Notification for release of regulated substances, (1-gal or greater) shall be documented in the Form U-CS or Form FC-1 by identifying the Department staff involved in oversight of the soil cleanup.
2. Before collecting the sample, the sampler will verify the quantity of contaminated soil by measuring the pile and performing the most suitable mathematical computation. A form for reporting this information shall be provided by the Landfill.
3. Each PADEP Form contains specific directions on the minimum number of required samples, both with and without field screening.
4. To assure the protection of the sample, the sampler shall wear protective gloves and other personal protective equipment as needed and utilize standard EPA and Department sampling techniques and sampling tools to obtain the sample.
5. Composite sampling shall not be used to determine volatile organics.
6. A composite sample must originate from no less than four grab samples.
7. Volatiles are to be collected per SW-846 method 5035 to prevent loss of the volatile.
8. Analysis is waived for 25 tons or less of FC-1 soil, but not for U-CS soil.
9. Contaminated soil resulting from a sudden and unplanned event such as a fire, spill, or accident, as described in §287.103, will be handled as follows:
 - a. Virgin fuel, hydraulic fluid, motor oil, and antifreeze via the Form FC-1.
 - b. Hydraulic fluid, motor oil, and antifreeze alone, less than 25 tons, notification of disposal via a letter or email to the Department.
10. Complete Form U-CS testing may be appropriate initially to characterize the contaminants of concern. Abbreviated Form R testing requirements for Form U-CS wastes apply to known contamination.
11. Samples are to be analyzed by a PA DEP accredited environmental testing laboratory.
12. Appropriate holding time limitations for testing shall be met and verified by the laboratory in the submittal.
13. Chain-of-custody for all samples shall be documented in the submittal.
14. The bulk density that will be used to convert from yd³ volume to tonnage is 1.4 tons/yd³.

Contaminated Soil
Table 1 - Residual Waste Categories and Abbreviated Testing Requirements

LYCOMING COUNTY LANDFILL

502	PCB-Containing Waste
Form U-CS. Minimum testing requirements are: Three test samples for API Diesel Range TPH, PCB's, 1,2,4-TMB, and 1,3,5-TMB.	
	PCB-Contaminated Soil, mineral insulating oil release to soil
503	Petroleum-Containing Waste
Form U-CS. Minimum testing requirements are: One test sample for TPH and TOX is required per 30-40 cubic yard waste container where absorbent volumes exceed 25 gallons per 30-40 cubic yard waste container.	
	Petroleum-contaminated absorbent, petroleum-contaminated rags from clean-up.
506	Contaminated Soil/Debris/Spill Residue (Non-Petroleum) From Non-Hazardous Spills Containing:
Form U-CS. Minimum testing requirements are: pH; the known contaminant(s) of concern; TPH and TOX for organic contamination; plus appropriate darker-shaded parameters or other monitoring instructions from Form R, Table R-2. Includes contaminated paper, plastic, wood, and vegetation from clean-up.	
(from RWC 000)	Combustion Residues. Coal-derived bottom ash, coal-derived fly ash, flue gas desulfurization residue (FGD), incinerator bottom ash, incinerator fly ash, incinerator mixed ash, other specified non-coal derived ash, coal fly ash, coal bottom ash, flue gas desulfurization residue FGD.
(from RWC 100)	Metallurgical Process Residue. Foundry sand, slag, refractory other than RWC 480 boiler furnace refractory, grindings, shavings, ferrous baghouse dust, non-ferrous baghouse dust, ferrous scrap, non-ferrous scrap, sandblast abrasive/residue, air emission control dust, lubricating soaps. (Soil contaminated with mill scales and heat treat scales are excluded. Low temperature metal dross and dross skims from Sn, Pb, Zn, and Al are excluded.)
(from RWC 200)	Sludges, Scales. Water treatment plant sludge/sediment, industrial wastewater treatment sludge/sediment including acid mine drainage sludge, metallurgical sludge, food processing sludge, paint coating sludge and scale, non-hazardous tank bottoms, non-hazardous still bottoms, air emission control sludge, other specified industrial sludge, lime/cement kiln scale and residue, lime-stabilized spent pickle liquor, cooling tower sediment/sludge, oil & gas drilling treated hydrofracture water sludge.

506 contd	Contaminated Soil/Debris/Spill Residue (Non-Petroleum) From Non-Hazardous Spills Containing:
(from RWC 300)	<p>Chemical Waste. Acidic chemicals (pH < 6), basic chemicals (pH > 8), non-hazardous combustible chemicals, chemical salts, spent activated carbon, surface coatings, solid/semi-solid paints, polishes, adhesives, inks, cans of hardened paint, filter media/aids, diatomaceous earth, ion exchange resins, silica gels, non-hazardous spent dyes, detergents, cleaning agents, off-specification products and intermediates, non-infectious pharmaceutical and biological manufacturing and lab wastes, wax, paraffin, photographic chemicals.</p> <p>Includes soil contaminated with alcohols, solvents, glycols/antifreeze, machine coolants, and nonhazardous spent plating baths.</p>
(from RWC 400)	<p>Generic Manufacturing Wastes. Leather, rubber, elastomer, Latex, wood, scrap lumber, pallets, particle board, laminated paper, cardboard, textile, yarn, fabric, fiber, elastic, glass, cullet, polyethylene, polystyrene, polyurethane, other non-halogenated plastics, glass reinforced plastic, PVC, Teflon, CPE, other halogenated plastic, electronic components, off-specification semiconductors, circuit boards, agricultural fertilizers, agricultural pesticides, agricultural feed, agricultural feed supplements, photographic film, photographic paper, bituminous asphalt, ceramic, linoleum, thermal insulation cellulose, thermal insulation glass, thermal insulation wool, wiring, conduit, electrical insulation, sawdust, wood shavings, wood turnings, empty containers, chemically treated wood, railroad ties, metallic/non-metallic drums and pails, food waste, resins, polymers other than RWC 407 and 409, vinyl sheet, upholstery, spent air/gas filters, spent aqueous filters, spent non-hazardous fuel/oil/solvent filters, paint filters, cloth filters, paper filters, supersacs, grease, boiler furnace refractory other than RWC 103, carbon/graphite residue/scrap, baghouse dust other than RWC 105 and RWC 106, blasting abrasive/residue other than RWC 109, gypsum plaster molds, and drywall.</p> <p>Includes soil contaminated by nonhazardous process wastewaters, oil & gas drilling hydrofracture water, contaminated non-contact cooling waters, oil/water emulsions, oily wastewaters, landfill leachate, treated wood, and railroad ties.</p>
(from RWC 500)	<p>Special Handling Wastes. Asbestos-containing waste, asbestos-containing insulation, asbestos-containing brake lining, paints, spent catalysts, dredge material, water intake debris, water intake sediment, coal mill rejects.</p> <p>(Tires should be segregated from soil and excluded from disposal as whole tires.)</p>
(from RWC 700)	<p>Industrial Equipment, Maintenance Scrap. Pumps, piping, vessels, instruments, storage tanks, maintenance scrap, product turn-around scrap, nonhazardous batteries, grinding wheels, sanding disks, polishing belts, welding rods, broken tools, and plant trash.</p> <p>(Pb-acid batteries in soil should be segregated and excluded.)</p>

506 cont'd	Contaminated Soil/Debris/Spill Residue (Non-Petroleum) From Non-Hazardous Spills Containing:
(from RWC 800)	RWC 801 drilling fluids, hydrofracture water, drilling residuals, drill cuttings, invert cuttings, and drilling residuals with bulking agents released to soil or water of the environment.
(from RWC 900)	Miscellaneous. Auto shredder fluff and treated hazardous waste residue. (Treated hazardous waste residue in soil should include land ban certification as required.)
Form 35	Processed infectious/chemotherapeutic waste
Form 36	Municipal waste incinerator ash
Form 43	Sewage sludge

507	Waste Petroleum Material Contaminated Soil/Debris
Form U-CS. Minimum testing requirements are: the known metal contaminant(s) of concern, pH, TPH, TOX.	

	Hydraulic oil/fluid, lubricating oil, lubricating greases (including non-petroleum based), machining and cutting oil, electrical transformer oil, automotive transmission oil, petroleum-derived oily sludge, oil/water emulsions, oily wastewaters, drilling fluid residues. Includes petroleum-contaminated paper, plastic, wood, and vegetation from clean-up.
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

508	Virgin Petroleum Fuel Contaminated Soil/Debris
Form FC-1. Follow the Policy and Procedure For the Disposal of Fuel-Contaminated Soils	

	Fuel oil, diesel fuel, aviation fuel, kerosene, or gasoline spilled to soil from traffic accidents, tanks, drums or other containers, drilling fluid residues. Includes petroleum-contaminated paper, plastic, wood, and vegetation from clean-up.
--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Field Oversight for Contaminated Soil Characterization

The Department forms, FC-1 and U-CS are used by regulated disposal facilities for requesting acceptance of virgin petroleum fuel contaminated soil and waste petroleum/chemically contaminated soil, respectively. Generators or contractors for the generators supply the sampling and analytical information that gets attached to these forms for submittal to the Department's regional chemists for review.

The Department's Fill Policy is used by generators to evaluate soil for use as fill rather than disposal.

Both of the Department disposal request forms and the fill policy require a minimum number of samples, tested for specific applicable parameters. Parameters are dictated by the forms and/or by the landfill's Form R, Waste Analysis and Classification permit amendment to their operating permit. Minimum number of samples is dictated by the forms and the policy.

1. **To ensure that the minimum number of samples are collected in the field and to verify proper sampling:**
 - a. Refer sample collectors to the appropriate Department form or policy.
 - b. Refer sample collectors to the two-sheet guide: Pile or In-Situ Sampling For Form FC-1, Form U-CS or Fill Policy Contaminated Soil Characterization with Field Screening For Volatiles and Compositing for Metals. This guide compares sampling requirements of the two disposal forms and the fill policy and indicates the minimal requirements to meet all three criteria, in the event that the generator wants to evaluate the soil for clean fill or disposal with the same analytical.

Both Department disposal request forms require a diagram of the sample collection area. With *in-situ* sampling, this is often overlooked.

2. **To ensure that a diagram of the sample collection area is made to document the sampling:**
 - a. Refer sample collectors to directions for the appropriate Department disposal request form.
 - b. Refer sample collectors to the one-sheet guide: Diagram of Sample Collection Area. The sampler can mark samples on the guide sheet and use it as their diagram submittal.

3. **Other important points to be aware of:**

- Compositing cannot be used for volatile organic compounds, due to potential loss of volatiles.
- A composite sample must originate from no less than four grab samples.
- The Department must pre-approve visual screening to reduce number of samples and field screening other than PID or immunoassay. Refer samplers to Department regional chemists.
- Samples collected for volatiles must meet EPA SW-846 Method 5035. Soil collection options are: (<200 ppb) 5-g sample weighed in the field w sodium bisulfate preservative in vial. (>200 ppb) ~5-g sample in Encore or preweighed vial containing methanol. (>200 ppb oily wastes) Encore, diluted methanol method or Method 3585 n-hexadecane solvent for oily wastes insoluble in water-miscible solvents.
- Piles must be sampled no shallower than one foot from the surface of the pile.
- Encourage an extra sample beyond the minimum, especially for *in situ* samples, to avoid coming-up short at the landfill scales. Sampling is based on yd³ volume and is checked at the landfill scales by weight and a bulk density conversion, recorded in NCRO landfill Form R amendments.
- Analysis is waived for 25 tons or less of FC-1 soil, but not for U-CS soil.
- Abbreviated Form R testing requirements for Form U-CS wastes apply to known contamination. Complete Form U-CS testing may be appropriate initially to characterize the contaminants of concern prior to utilizing this abbreviated testing scheme.
- Applicable Residual Waste Codes (RWCs) for disposal requests are:

○ RWC 506	Contaminated soils/debris/spill residues (nonpetroleum)	Use Form U-CS
○ RWC 507	Waste petroleum material contaminated soil/debris	Use Form U-CS
○ RWC 508	Virgin petroleum fuel contaminated soil and debris	Use Form FC-1

Pile or *In-Situ* Sampling
For Form FC-1, Form U-CS or Fill Policy Contaminated Soil Characterization
with Field Screening for Volatiles and Compositing for Metals

Tank Short List Volatiles including BTEX + TPH¹ & TOX², or any volatiles that can be screened by PID³

Soil Volume ⁴ yd ³	Fill Policy		Fill Policy w PID Screen or EPA Method 4030 Immunoassay ⁵		Form FC-1		Form U-CS		Forms FC-1 or U-CS w PID Screen ⁶		Total Min # PID Screens	Total Min # of Screen Grab Samples
	Grab Frequency	# Grab Samples	Screen ⁷ Frequency	# Screened Samples	Grab ⁸ Frequency	# Grab Samples	Grab Frequency	# Grab Samples	Screen Frequency	# Screened Samples ⁹		
10	8/125	8	8/125	2	1/50+1	2	1/250	1	1/25	2	8	2
25	8/125	8	8/125	2	1/50+1	2	1/250	1	1/25	2	8	2
50	8/125	8	8/125	2	1/50+1	2	1/250	1	1/25	2	8	2
75	8/125	8	8/125	2	1/50+1	3	1/250	1	1/25	2	8	2
100	8/125	8	8/125	2	1/50+1	3	1/250	1	1/25	2	8	2
125	8/125	8	8/125	2	1/100+2	3	1/250	1	1/25	2	8	2
140	12/3,000	12	12/3,000	3	1/100+2	3	1/250	1	1/25	2	12	3
175	12/3,000	12	12/3,000	3	1/100+2	3	1/250	1	1/25	2	12	3
250	12/3,000	12	12/3,000	3	1/100+2	4	1/250	2	1/25	2	12	3
350	12/3,000	12	12/3,000	3	1/100+2	5	1/250	2	1/25	2	14	3
500	12/3,000	12	12/3,000	3	1/100+2	7	1/250	2	1/25	2	20	3
550	12/3,000	12	12/3,000	3	1/100+2	7	1/250	2	1/25	3	22	3
600	12/3,000	12	12/3,000	3	1/100+2	8	1/250	2	1/25	3	24	3
750	12/3,000	12	12/3,000	3	1/100+2	9	1/250	3	1/25	3	30	3
1,000	12/3,000	12	12/3,000	3	1/100+2	12	1/250	4	1/25	4	40	4
1,500	12/3,000	12	12/3,000	3	1/100+2	17	1/250	6	40+1/100	6	45	6
3,000	12/3,000	12	12/3,000	3	1/100+2	32	1/250	12	40+1/100	12	60	12
3,500	12/3,000	24	12/3,000	6	1/100+2	37	1/250	14	40+1/100	14	65	14
6,500	12/3,000	36	12/3,000	9	1/100+2	67	1/250	26	40+1/100	26	95	26
10,000 ¹⁰	12/3,000	48	12/3,000	12	1/100+2	102	1/250	40	40+1/100	40	130	40
10,200	12/3,000	48	12/3,000	12	1/100+2	104	1/250	40	40+1/100	41	132	41

¹ A PID reads the volatile components of gasoline, #2 diesel fuel or home heating oil as a single component.

² Halogenated solvents that can not be detected by PID do not qualify for PID-screening to reduce number of samples. With a 10.6 eV lamp, PID's will detect TCE and PCE, but not TCA. An 11.7 eV lamp is required to detect TCA by PID. Consult table of electron volt ionization potentials for photo ionization detection capability.

³ Complete Form U testing may be appropriate initially to characterize the contaminants of concern prior to utilizing this abbreviated testing scheme.

⁴ When determining soil volume in-situ, use coefficient of expansion for the appropriate class of soil to allow for % increase in soil volume when soil is excavated for disposal. This will allow assurance of sufficient minimum number of samples being taken, since number of samples in these tables are taken from policies that generally applied to soil piles rather than *in-situ*. This should only be a significant issue on very large contaminated soil cases.

⁵ Other screening methods or visual screening must be pre-approved by the Department. Contact a regional chemist.

⁶ Locations of highest PID readings.

⁷ or fraction thereof

⁸ or fraction thereof, in the first 100 yd³.

⁹ Locations of highest PID readings.

¹⁰ 10,000 yd³ = 100yd x 100 yd x 3' depth.

Pile or *In-Situ* Sampling
For Form FC-1, Form U-CS or Fill Policy Contaminated Soil Characterization
with Field Screening for Volatiles and Compositing for Metals

Total Pb/TCLP Pb, other metals of known concern¹¹

Soil Volume yd ³	Fill Policy		Fill Policy w Composite		Form FC-1		Form FC-1 w Composite		Form U-CS	Form U-CS w Composite	Total Minimum # Composite Samples
	Grab Frequency	# Grab Samples	Composite Frequency	# Composite Samples	Grab Frequency	# Grab Samples	Composite Frequency	# Composite Samples	Grab & Composite Frequency ¹²	# Grab or Composite Samples	
10	8/125	8	2/125	2	0	0 ¹³	0	0 ¹³	1/250	1	2
25	8/125	8	2/125	2	1/50+1	2	4/250	1	1/250	1	2
50	8/125	8	2/125	2	1/50+1	2	4/250	1	1/250	1	2
75	8/125	8	2/125	2	1/50+1	3	4/250	1	1/250	1	2
100	8/125	8	2/125	2	1/50+1	3	4/250	1	1/250	1	2
125	8/125	8	2/125	2	1/100+2	3	4/250	1	1/250	1	2
140	12/3000	12	3/3000	3	1/100+2	3	4/250	1	1/250	1	3
175	12/3000	12	3/3000	3	1/100+2	3	4/250	1	1/250	1	3
250	12/3000	12	3/3000	3	1/100+2	4	4/250	1	1/250	1	3
350	12/3000	12	3/3000	3	1/100+2	5	4/250	1	1/250	1	3
500	12/3000	12	3/3000	3	1/100+2	7	4/250	2	1/250	2	3
550	12/3000	12	3/3000	3	1/100+2	7	4/250	2	1/250	2	3
600	12/3000	12	3/3000	3	1/100+2	8	4/250	2	1/250	2	3
750	12/3000	12	3/3000	3	1/100+2	9	4/250	3	1/250	3	3
1,000	12/3000	12	3/3000	3	1/100+2	12	4/250	4	1/250	4	4
1,500	12/3000	12	3/3000	3	1/100+2	17	4/250	6	1/250	6	6
3,000	12/3000	12	3/3000	3	1/100+2	32	4/250	12	1/250	12	12
3,500	12/3000	24	6/6000	6	1/100+2	37	4/250	14	1/250	14	14
6,500	12/3000	36	9/9000	9	1/100+2	67	4/250	26	1/250	26	26
10,000	12/3000	48	12/12000	12	1/100+2	102	4/250	40	1/250	40	40
10,200	12/3000	48	12/12000	12	1/100+2	104	4/250	40	1/250	40	40

¹¹ Complete Form U testing may be appropriate initially to characterize the contaminants of concern prior to utilizing this abbreviated testing scheme.

¹² No advantage to composite sampling for Form U-CS.

¹³ Per the Form FC-1 Policy of July 23, 1993, NCRO waives analytical reporting requirements for 25 tons or less. Use the bulk density for the soil (generally >1 ton/yd³ but <2 ton/yd³) to determine the minimum volume of soil that is expected to exceed 25 tons and require analytical. The bulk density that the disposal facilities in the NCRO agree to use for soil calculations is included in their Form R permits.

Appendix D
List of Approved Permit Modifications for the
Lycoming County Landfill
(See Attachment 1 for Conditions)

Attachment 1 to Appendix D

(This attachment is reserved for conditions of future permit modifications.)

LYCOMING COUNTY RESOURCE MANAGEMENT SERVICES DEPARTMENT LYCOMING COUNTY, PENNSYLVANIA

LYCOMING COUNTY LANDFILL LEACHATE STORAGE TANK CONSTRUCTION Record Drawing February 7, 2014

LIST OF DRAWINGS

DWG. NO.	SHEET NO.	TITLE	DWG. NO.	SHEET NO.	TITLE
GENERAL			STRUCTURAL		
G-7401	01	TITLE SHEET	S-7401	26	LEACHATE STORAGE TANK STRUCTURAL NOTES
G-7402	02	SITE PLAN	S-7402	27	LEACHATE STORAGE TANK GENERAL PLAN
G-7403	03	SITE PLAN - EXISTING CONDITIONS	S-7403	28	LEACHATE STORAGE TANK FOUNDATION PLAN
G-7404	04	LOCATION AND GRADING PLAN-1	S-7404	29	LEACHATE STORAGE TANK WALL SECTIONS
G-7405	05	LOCATION AND GRADING PLAN-2	S-7405	30	LEACHATE STORAGE TANK WALL ELEVATIONS
G-7406	06	LOCATION AND GRADING PLAN-3	S-7406	31	LEACHATE STORAGE TANK MISCELLANEOUS DETAILS
G-7407	07	LOCATION AND GRADING PLAN-4	S-7407	32	DETAIL - STAIR NO. 1 PLAN AND SECTIONS
G-7408	08	LOCATION AND GRADING PLAN-5	S-7408	33	DETAIL - STAIR NO. 1 SECTIONS
G-7409	09	LEACHATE STORAGE TANK PLAN	S-7409	34	DETAIL - STAIR NO. 2 PLAN AND SECTIONS
G-7410	10	LEACHATE STORAGE TANK SECTIONS - 1	S-7410	35	DETAIL - STAIR NO. 2 SECTIONS
G-7411	11	LEACHATE STORAGE TANK DETAILS - 1	S-7411	36	MISCELLANEOUS STAIR DETAILS
G-7412	12	LEACHATE STORAGE TANK DETAILS - 2	S-7412	37	LEACHATE STORAGE TANK CONCRETE FLOOR SLAB ABOVE LINER
G-7413	13	LEACHATE STORAGE TANK DETAIL - LEACHATE PUMP ASSEMBLY	S-7413	38	CONTROL BUILDING PLANS
G-7414	14	LEACHATE STORAGE TANK TYPICAL WALL DETAILS	S-7414	39	CONTROL BUILDING SECTIONS - 1
G-7415	15	CONTROL BUILDING PLAN AND ELEVATIONS	S-7415	40	CONTROL BUILDING SECTIONS - 2
G-7416	16	CONTROL BUILDING SECTIONS - 1	SUPPLEMENTAL DRAWINGS		
G-7417	17	CONTROL BUILDING SECTIONS - 2	TL-7401	41	LEACHATE STORAGE TANK PLAN - GEONET LAYER
G-7418	18	CONTROL BUILDING DETAILS	TL-7402	42	LEACHATE STORAGE TANK PLAN - GEOMEMBRANE LAYER
G-7419	19	MISCELLANEOUS SITE DETAILS	TL-7403	43	LEACHATE STORAGE TANK PLAN - GEOTEXTILE LAYER
G-7420	20	DETAILS - DITCH A8-08 AND HEADWALLS A8-07 AND A8-09	TL-7404	44	LEACHATE STORAGE TANK PLAN - 100 MIL HDPE RUB STRIP LAYER
G-7421	21	DETAIL - INLETS A8-10, A8-11 & A8-12	TL-7405	45	LEACHATE STORAGE TANK WALL PANEL ELEVATIONS
G-7422	22	TYPICAL DRAINAGE DETAILS			
G-7423	23	MODIFICATIONS AT LEACHATE PUMPING STATION PLAN			
G-7424	24	MODIFICATIONS AT LEACHATE PUMPING STATION SECTIONS - 1			
G-7425	25	MODIFICATIONS AT EXISTING RECIRCULATION PUMPING STATION			

LYCOMING COUNTY BOARD OF COUNTY COMMISSIONERS

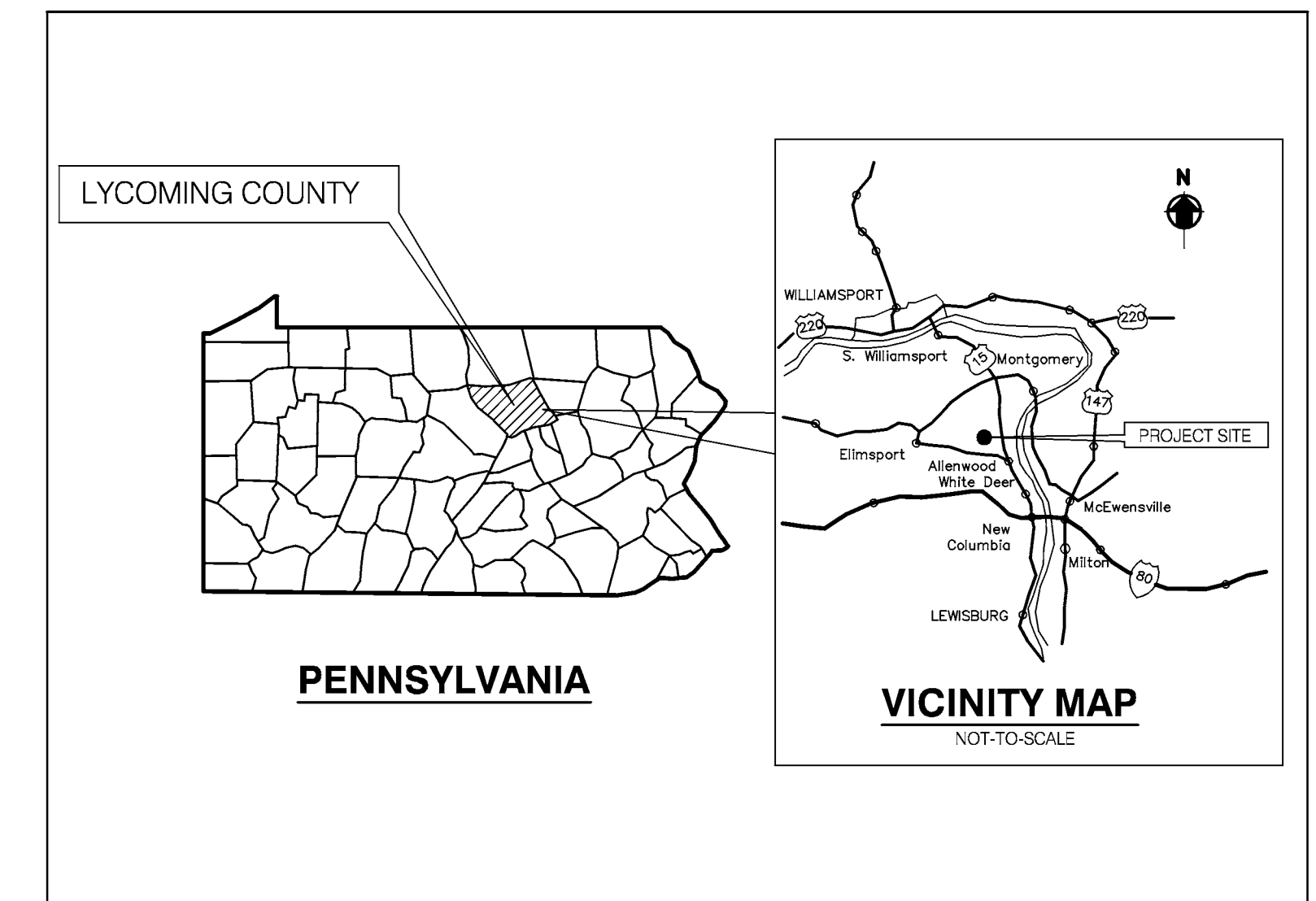
REBECCA A. BURKE, Chairperson
ERNEST P. LARSON, Vice Chairman
JEFF C. WHEELAND, Secretary

RESOURCE MANAGEMENT SERVICES DEPARTMENT

R. STEPHEN TUCKER, Director
BONNIE A. FINK, Deputy Director

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



CUMMINGS & SMITH, INC.

Consulting Engineers
UPPER MONTCLAIR, NEW JERSEY
MONTGOMERY, PENNSYLVANIA

Geotechnical Engineer:

CMT Laboratories, Inc.

STATE COLLEGE, PENNSYLVANIA

02/07/14	RECORD DRAWING	GLS
11/28/11	CONSTRUCTION	GLS
10/06/11	BIDS	GLS
07/08/11	CLIENT REVIEW	GLS
12/17/10	CLIENT REVIEW	GLS
12/15/08	PERMITS	GLS

ISSUE DATE: 02/07/14 RELEASED FOR: APPROVED BY:

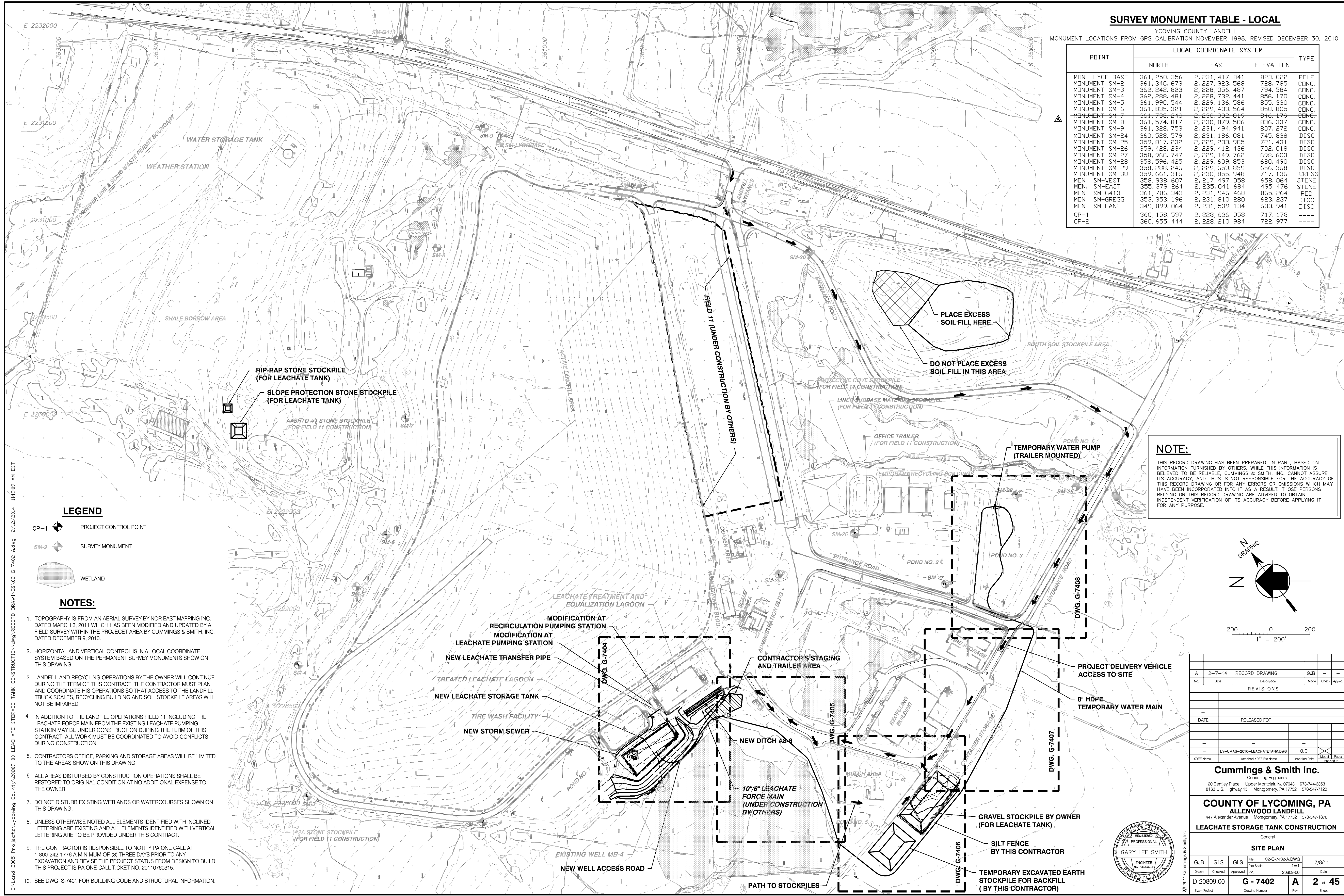


Drawn: GJB	Checked: GLS	Approved: GLS	File: 01-G-7401-3-DWG	Date: 10/6/2011
Drawn: GJB	Checked: GLS	Approved: GLS	Plot Scale: 1"=1'	Date: 2009-00
D - 20809.00 - G - 7401			B	1 of 45
Size	Project	Subject	Number	Revision

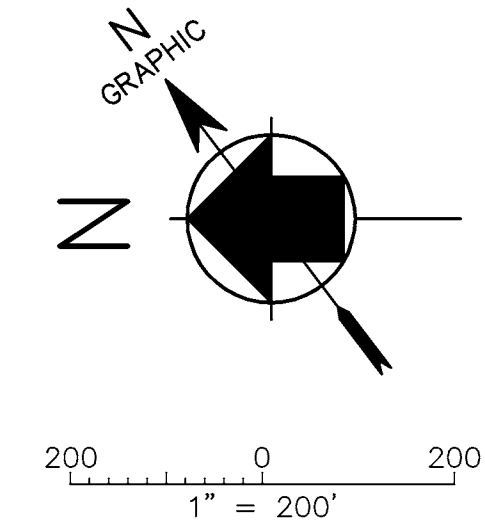
SURVEY MONUMENT TABLE - LOCAL

LYCOMING COUNTY LANDFILL
MONUMENT LOCATIONS FROM GPS CALIBRATION NOVEMBER 1998, REVISED DECEMBER 30, 2010

POINT	LOCAL COORDINATE SYSTEM			TYPE
	NORTH	EAST	ELEVATION	
MON. LYCO-BASE	361,250.356	2,231,417.841	823.022	PDLE
MONUMENT SM-2	361,340.679	2,227,923.568	728.785	CONC.
MONUMENT SM-3	362,242.823	2,228,056.487	794.584	CONC.
MONUMENT SM-4	362,288.481	2,228,732.441	856.170	CONC.
MONUMENT SM-5	361,990.544	2,229,136.586	855.330	CONC.
MONUMENT SM-6	361,835.321	2,229,403.564	850.805	CONC.
MONUMENT SM-7	361,730.240	2,230,002.019	846.179	CONC.
MONUMENT SM-8	361,574.817	2,230,679.666	836.397	CONC.
MONUMENT SM-9	361,328.753	2,231,494.941	807.272	CONC.
MONUMENT SM-24	360,528.579	2,231,186.081	745.938	DISC
MONUMENT SM-25	359,817.232	2,229,200.905	721.431	DISC
MONUMENT SM-26	359,428.234	2,229,412.436	702.018	DISC
MONUMENT SM-27	358,960.747	2,229,149.762	698.603	DISC
MONUMENT SM-28	358,596.425	2,229,609.853	680.490	DISC
MONUMENT SM-29	358,288.246	2,229,650.859	656.368	DISC
MONUMENT SM-30	359,661.316	2,230,855.948	717.136	CROSS
MON. SM-WEST	358,938.607	2,217,497.058	658.064	STONE
MON. SM-EAST	355,379.264	2,235,041.684	495.476	STONE
MON. SM-G413	361,786.343	2,231,946.468	865.264	ROD
MON. SM-GREGG	353,353.196	2,231,810.280	623.237	DISC
MON. SM-LANE	349,899.064	2,231,539.134	600.941	DISC
CP-1	360,158.597	2,228,636.058	717.178	---
CP-2	360,655.444	2,228,210.984	722.977	---



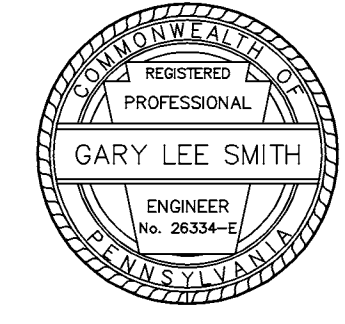
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

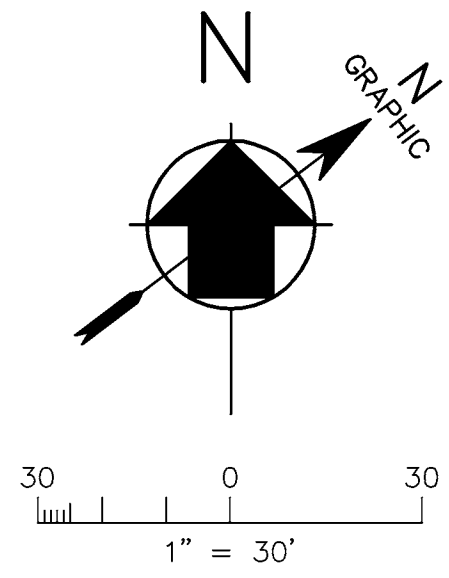


- LEGEND**
- CP-1 PROJECT CONTROL POINT
 - SM-9 SURVEY MONUMENT
 - WETLAND

- NOTES:**
- TOPOGRAPHY IS FROM AN AERIAL SURVEY BY NOR EAST MAPPING INC., DATED MARCH 3, 2011 WHICH HAS BEEN MODIFIED AND UPDATED BY A FIELD SURVEY WITHIN THE PROJECT AREA BY CUMMINGS & SMITH, INC. DATED DECEMBER 9, 2010.
 - HORIZONTAL AND VERTICAL CONTROL IS IN A LOCAL COORDINATE SYSTEM BASED ON THE PERMANENT SURVEY MONUMENTS SHOWN ON THIS DRAWING.
 - LANDFILL AND RECYCLING OPERATIONS BY THE OWNER WILL CONTINUE DURING THE TERM OF THIS CONTRACT. THE CONTRACTOR MUST PLAN AND COORDINATE HIS OPERATIONS SO THAT ACCESS TO THE LANDFILL, TRUCK SCALES, RECYCLING BUILDING AND SOIL STOCKPILE AREAS WILL NOT BE IMPAIRED.
 - IN ADDITION TO THE LANDFILL OPERATIONS FIELD 11 INCLUDING THE LEACHATE FORCE MAIN FROM THE EXISTING LEACHATE PUMPING STATION MAY BE UNDER CONSTRUCTION DURING THE TERM OF THIS CONTRACT. ALL WORK MUST BE COORDINATED TO AVOID CONFLICTS DURING CONSTRUCTION.
 - CONTRACTORS OFFICE, PARKING AND STORAGE AREAS WILL BE LIMITED TO THE AREAS SHOWN ON THIS DRAWING.
 - ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER.
 - DO NOT DISTURB EXISTING WETLANDS OR WATERCOURSES SHOWN ON THIS DRAWING.
 - UNLESS OTHERWISE NOTED ALL ELEMENTS IDENTIFIED WITH INCLINED LETTERING ARE EXISTING AND ALL ELEMENTS IDENTIFIED WITH VERTICAL LETTERING ARE TO BE PROVIDED UNDER THIS CONTRACT.
 - THE CONTRACTOR IS RESPONSIBLE TO NOTIFY PA ONE CALL AT 1-800-242-1776 A MINIMUM OF (3) THREE DAYS PRIOR TO ANY EXCAVATION AND REVISE THE PROJECT STATUS FROM DESIGN TO BUILD. THIS PROJECT IS PA ONE CALL TICKET NO. 20110760315.
 - SEE DWG. S-7401 FOR BUILDING CODE AND STRUCTURAL INFORMATION.

A	2-7-14	RECORD DRAWING	GJB		
No.	Date	Description	Made	Check	Appd.
REVISIONS					
DATE RELEASED FOR					
XREF Name Attached XREF File Name Insertion Point					
<p>Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120</p> <p>COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870</p> <p>LEACHATE STORAGE TANK CONSTRUCTION</p> <p>General</p> <p>SITE PLAN</p>					
GJB	GLS	GLS	File: G2-G-7402-A.DWG	1=1	7/8/11
Drawn	Checked	Approved	Plot Scale: 20809-00		Date
D-20809.00			G-7402		A
Size - Project			Drawing Number		Rev. Sheet
					2 of 45





NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\03-08-G-7403B-8B.dwg 2/14/2014 12:27:07 PM EST

No.	Date	Description	Made	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB		
REVISIONS					
DATE RELEASED FOR					
		W-LEACHATE-TANK-TOP-2011-TRIMMED-X	0,0		
		LY-UMAS-2010-LEACHATE-TANK-CP-X	0,0		

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-1870

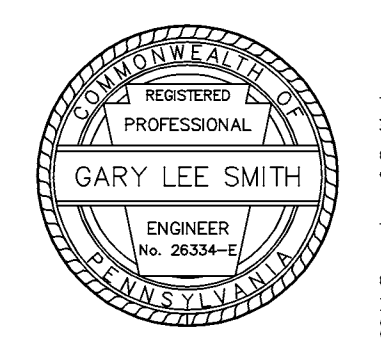
COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

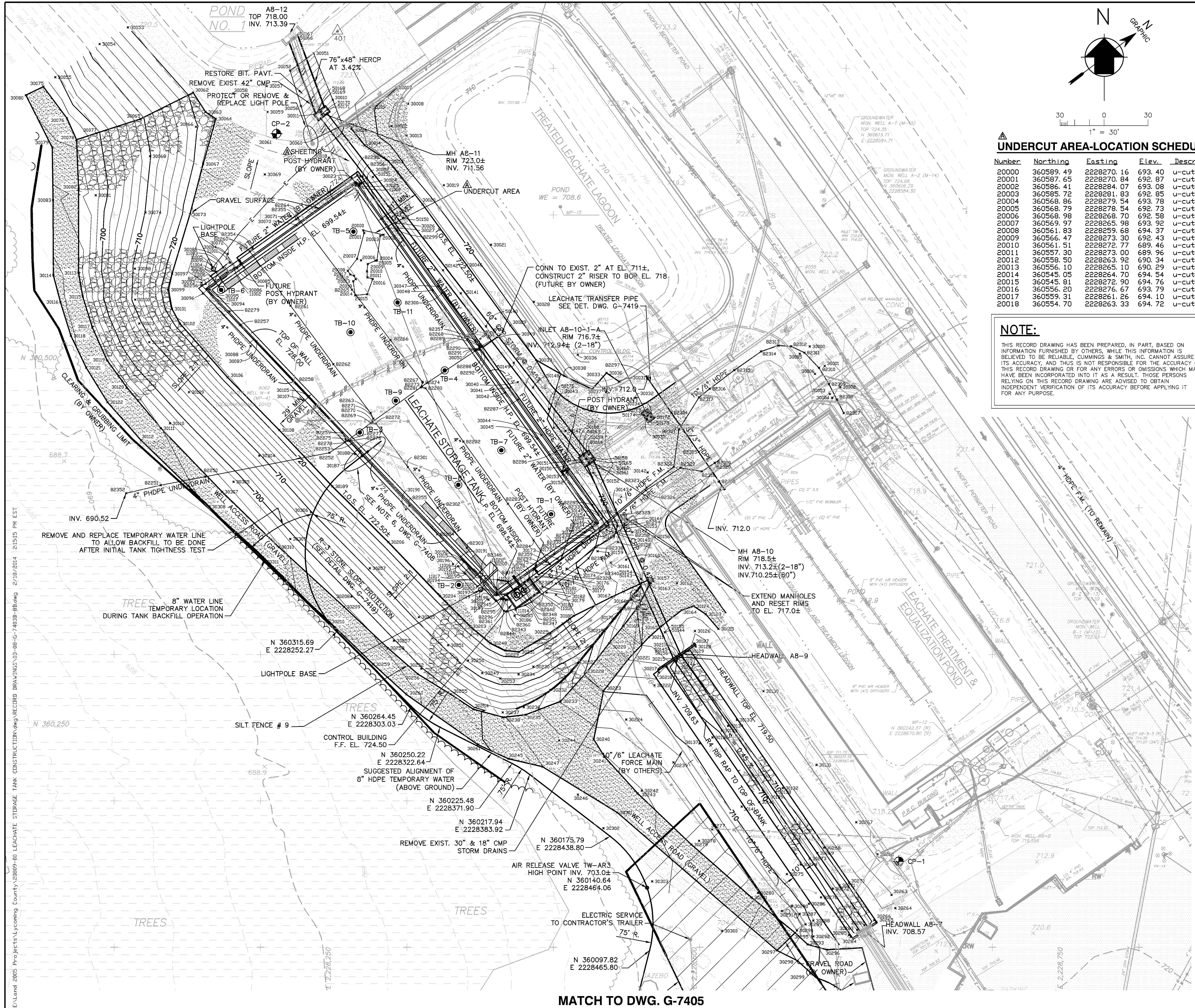
LEACHATE STORAGE TANK CONSTRUCTION

General
SITE PLAN
EXISTING CONDITIONS

GJB	GLS	GLS	File:03-08-G-7403B-8B.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809-00	

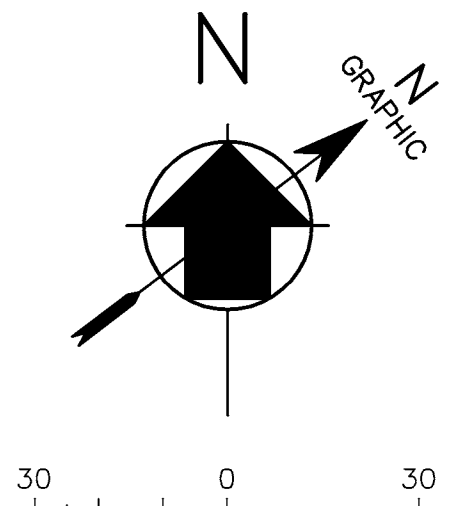
© 2011 Cummings & Smith, Inc. Size - Project: Drawing Number: **G-7403** Rev: **A** Sheet: **3 of 45**





LEGEND

- CP-1 PROJECT CONTROL POINT (SEE DWG. G-7402)
- SM-1 SURVEY MONUMENT (SEE DWG. G-7402)
- TB-1 SOIL TEST BORING



LOCATION SCHEDULE

199 LOCATION POINT

Number	Northing	Easting	Elev.	Description
11000	360519.91	2228264.99	727.85	cl crnr wall
11001	360567.36	2228179.17	724.23	nw crnr con pad
11002	360563.48	2228181.95	724.13	nw crnr con pad
11003	360564.13	2228174.46	724.17	sw crnr con pad
11004	360561.22	2228169.72	724.24	nw crnr con pad
11005	360563.55	2228167.35	726.91	tp cl light base 28in
11006	360558.19	2228165.94	724.14	sw crnr con pad
11007	360549.03	2228165.43	728.01	cl crnr wall
11008	360389.96	2228428.38	727.96	cl crnr wall
11009	360352.70	2228388.02	723.66	nw crnr con pad
11010	360393.66	2228351.15	726.91	tp cl light base 28in
11011	360346.35	2228392.64	723.53	ne crnr con pad
11012	360342.22	2228390.75	724.75	crnr pad
11013	360340.39	2228367.32	723.72	crnr con pad
11014	360330.53	2228374.28	724.55	crnr pad
11015	360363.42	2228338.66	724.30	nw crnr con pad
11016	360360.13	2228335.00	724.31	sw crnr con pad
11017	360351.00	2228343.33	724.34	sw crnr con pad
11018	360355.13	2228339.79	724.32	se crnr con pad
11019	360343.67	2228351.15	726.91	tp cl light base 28in
11020	360342.22	2228342.87	724.00	cl crnr wall
11021	360346.40	2228348.00	724.45	se crnr con pad

UNDERCUT AREA-LOCATION SCHEDULE

Number	Northing	Easting	Elev.	Descr.
20000	360589.49	2228270.16	693.40	u-cut
20001	360587.65	2228270.84	692.87	u-cut
20002	360586.41	2228284.07	693.08	u-cut
20003	360595.72	2228281.83	692.85	u-cut
20004	360568.86	2228279.54	693.78	u-cut
20005	360568.79	2228278.54	692.73	u-cut
20006	360568.98	2228268.70	692.58	u-cut
20007	360569.97	2228265.98	693.92	u-cut
20008	360561.83	2228259.68	694.37	u-cut
20009	360566.47	2228273.30	692.43	u-cut
20010	360561.51	2228272.77	689.46	u-cut
20011	360557.30	2228273.00	689.96	u-cut
20012	360558.50	2228263.92	690.34	u-cut
20013	360556.10	2228265.10	690.29	u-cut
20014	360545.05	2228264.70	694.54	u-cut
20015	360545.81	2228272.90	694.76	u-cut
20016	360556.20	2228276.67	693.79	u-cut
20017	360559.31	2228261.26	694.10	u-cut
20018	360554.70	2228263.33	694.72	u-cut

NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

NOTES:

- ALL EXISTING UTILITIES LABELED AS ABANDONED CAN BE REMOVED AND DISPOSED OF WITH NO SALVAGE VALUE TO THE OWNER.
- RESET EXISTING 3'x3' TELEPHONE AND 4'x4' ELECTRIC MANHOLES BY ADDING FULL DIMENSION CONCRETE RISER SECTIONS (3'x3' AND 4'x4') TO SET ENTRY COVER AT NEW SITE GRADES.
- SEE DWG. G-7408 FOR TEMPORARY WATER LINE NOTES.
- CONTRACTOR SHALL NOT REDUCE THE WATER LEVEL IN POND NO. 1 TO BELOW ELEVATION 710 AT ANY TIME DURING CONSTRUCTION.

No.	Date	Description	Made	Check	Appd.
B	2-7-14	RECORD DRAWING	GJB	-	-
A	7-27-12	ADDED SHEETING AT TANK	GJB	-	-

DATE RELEASED FOR

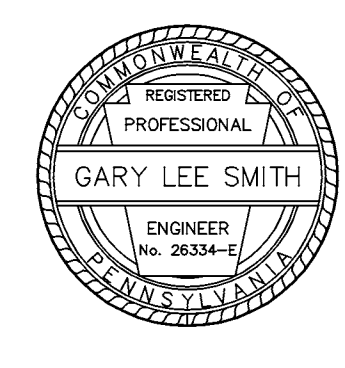
XREF Name	Attached XREF File Name	Insertion Point
-	-	-

Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-1720

COUNTY OF LYCOMING, PA
 ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
 General

GJB	GLS	GLS	File:03-08-G-7403B-8B.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809.00	
Size: Project	Drawing Number	Rev.	Sheet	
	G-7404	B	4 of 45	



MATCH TO DWG. G-7405

E:\land 2005 Projects\Lycoming County\STORAGE TANK CONSTRUCTION.dwg RECORD DRAWING 03-08-G-7403B-8B.dwg 2/19/2014 2:15:15 PM EST

LOCATION SCHEDULE (CONTINUED):

Table with columns: Number, Northing, Easting, Elev., Description. Rows 30000 to 30099.

Table with columns: Number, Northing, Easting, Elev., Description. Rows 30100 to 30189.

Table with columns: Number, Northing, Easting, Elev., Description. Rows 30190 to 30245.

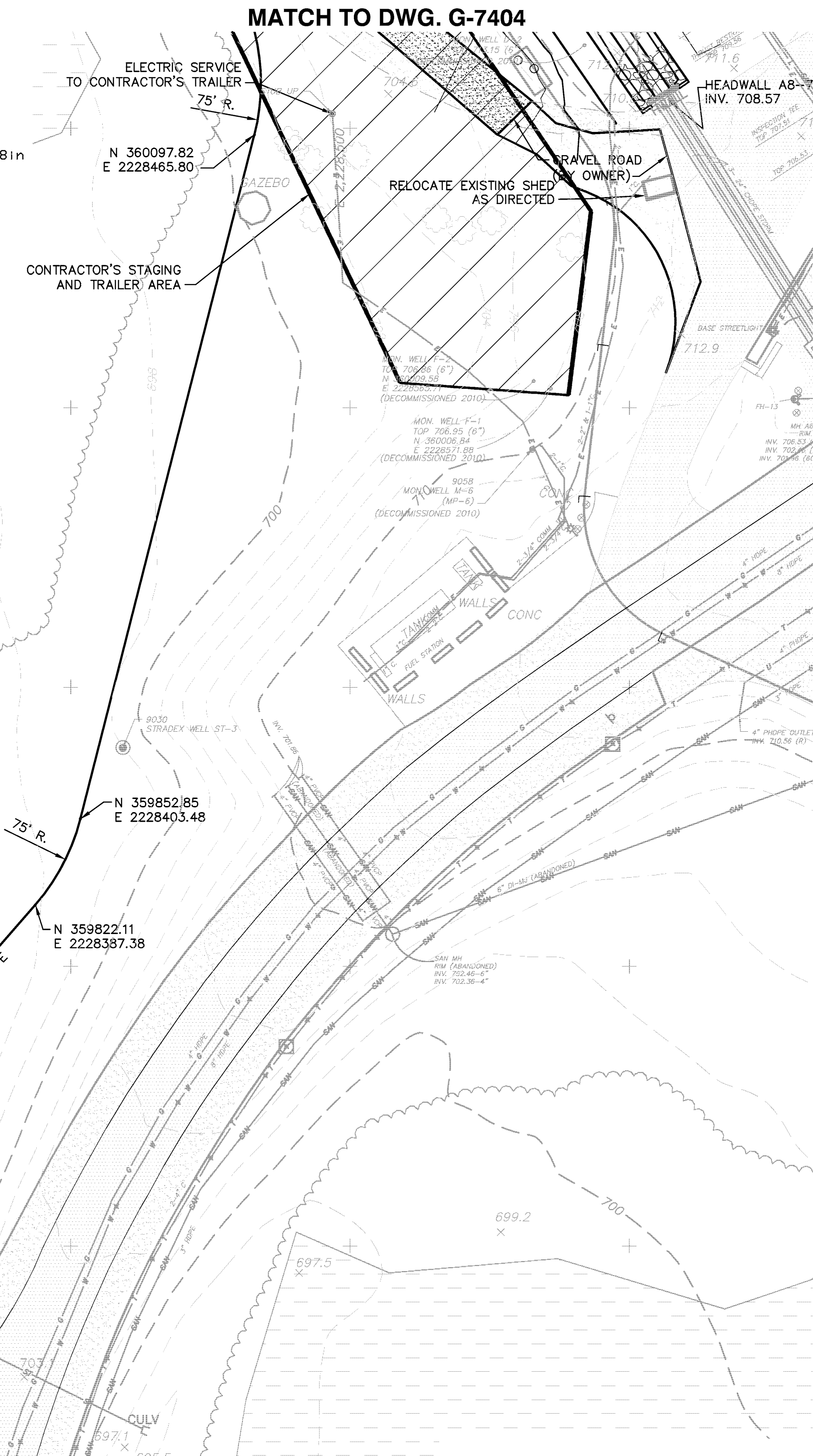
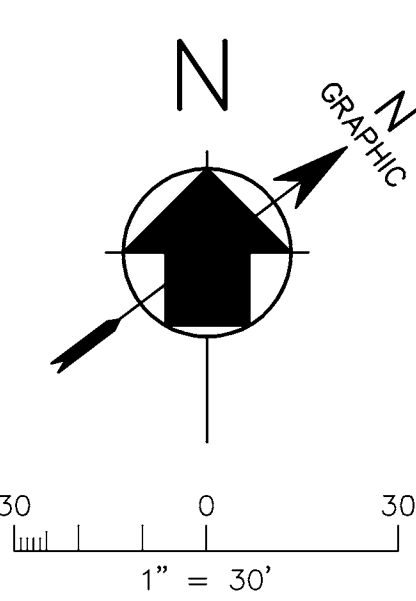


Table with columns: Number, Northing, Easting, Elev., Description. Rows 30246 to 30311.



TEMPORARY WATER LINE NOTES: SEE DWG. G-7408

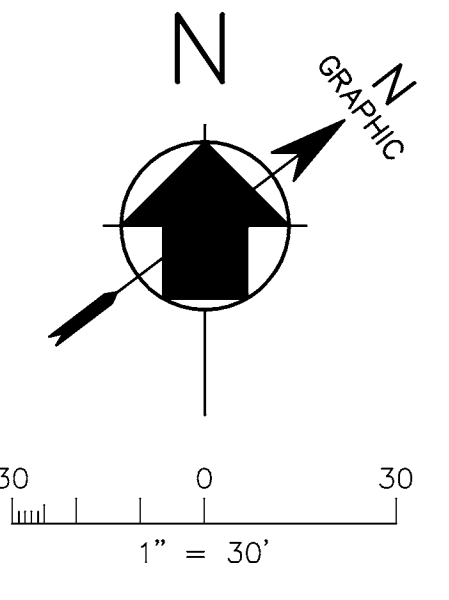
NOTE: THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS... CUMMINGS & SMITH, INC.

Table containing project information, revision history, and approval signatures. Includes project name 'LEACHATE STORAGE TANK CONSTRUCTION' and drawing title 'LOCATION AND GRADING PLAN-2'.

Vertical text on the left edge: E:\land 2005 Projects\Lycoming County\2008-08 LEACHATE STORAGE TANK DRAWING\03-08-G-7403B-8B.dwg 2/14/2014 12:47:35 PM EST

MATCH TO DWG. G-7406

MATCH TO DWG. G-7404

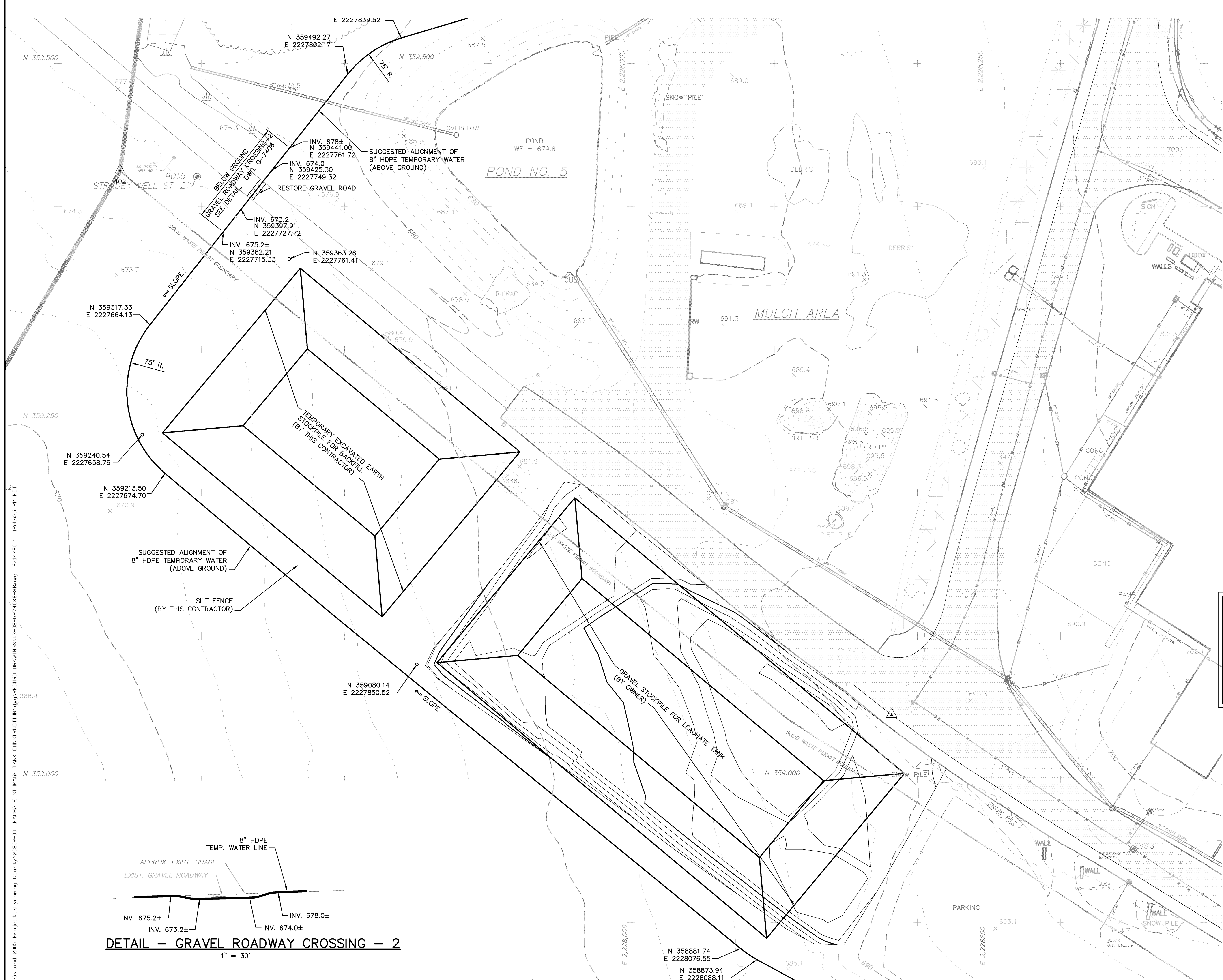
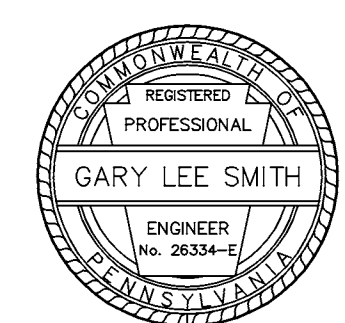


TEMPORARY WATER MAIN NOTES:

SEE DWG. G-7408.

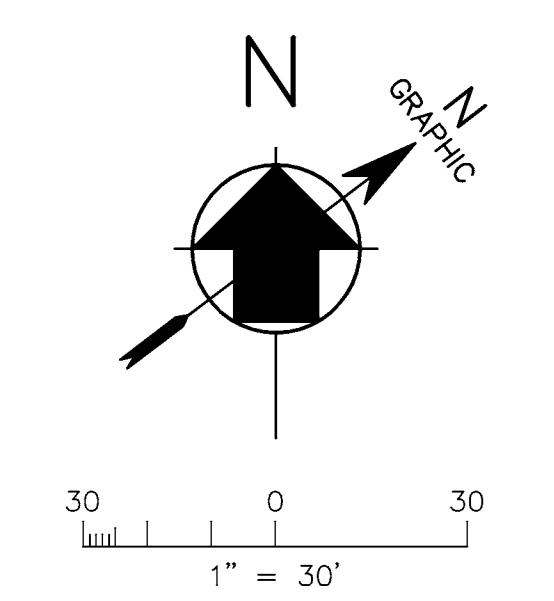
NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

A	2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Drawn	Checked	Appd.
REVISIONS					
DATE RELEASED FOR					
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
XREF Name			Attached XREF File Name	Insertion Point	Checked / Approved
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION General					
LOCATION AND GRADING PLAN-3					
GJB	GLS	GLS	File:03-08-G-7403B-8B.DWG	7/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date	
D-20809.00			20809.00		
Size - Project	Drawing Number	Rev.	Sheet		
	G - 7406	A	6 of 45		



DETAIL - GRAVEL ROADWAY CROSSING - 2
 1" = 30'

E:\Land 2005 Projects\Lycoming County\LD889-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG\RECORD DRAWINGS\03-08-G-7403B-8B.dwg 2/14/2014 12:47:35 PM EST



TEMPORARY WATER LINE NOTES:

SEE DWG. G-7408

NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

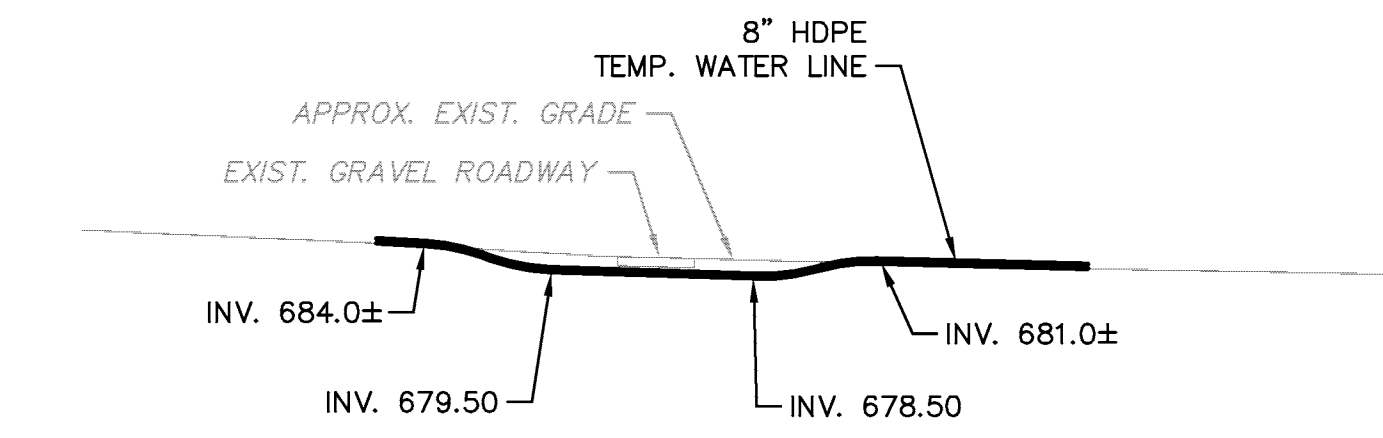
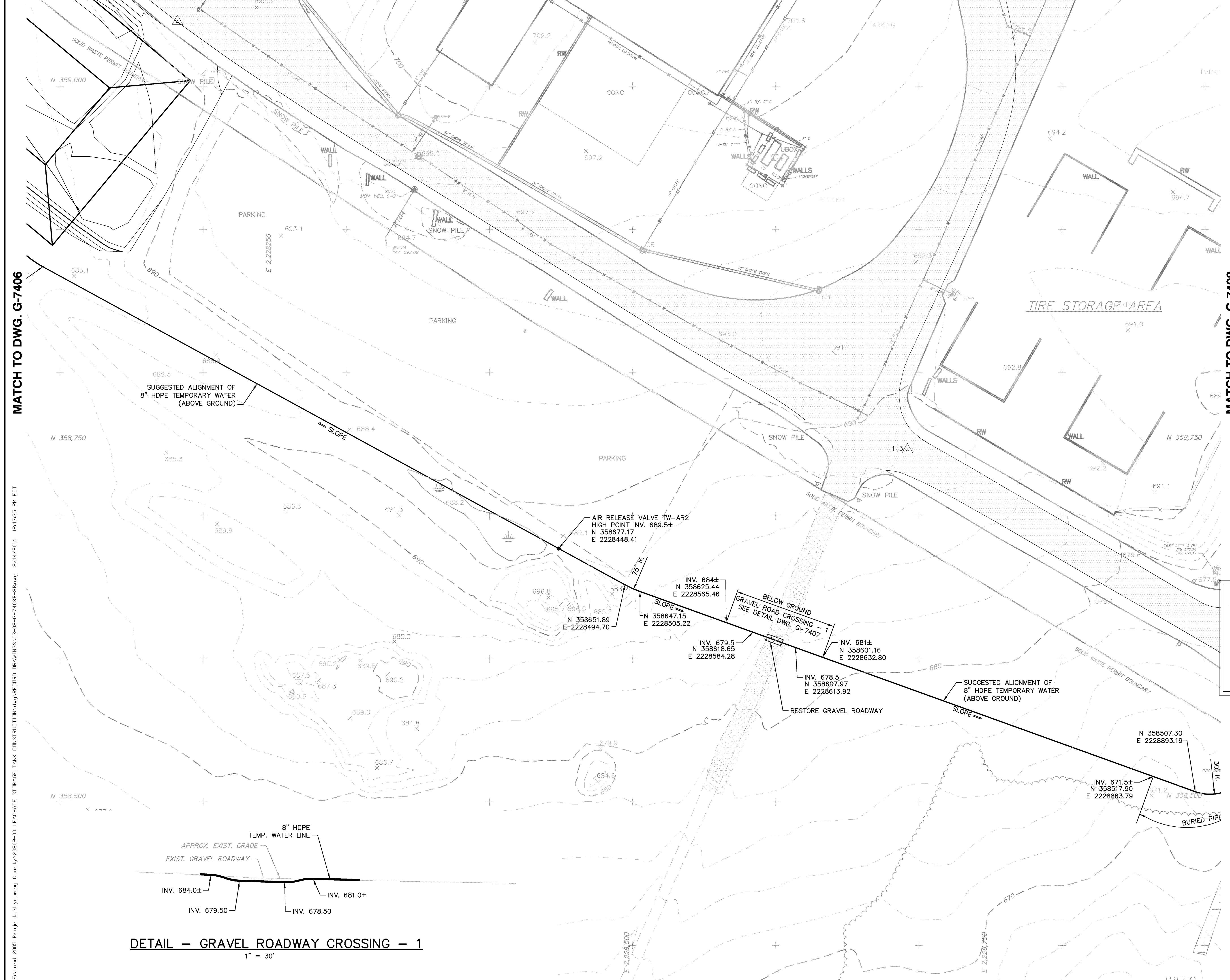
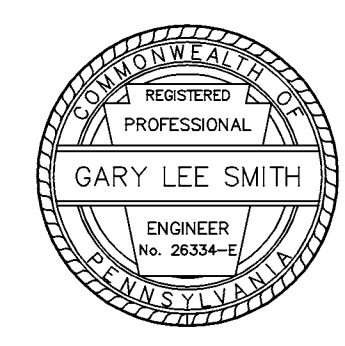
No.	Date	Description	Made	Check	Appd.
REVISIONS					
DATE RELEASED FOR					
XREF Name	Attached XREF File Name	Insertion Point			

Cummings & Smith, Inc.
 Consulting Engineers
 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
 General
LOCATION AND GRADING PLAN-4

GJB	GLS	GLS	File:03-08-G-7403B-8B.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 20809-00	Date
D-20809.00	G-7407	A	7	45
Size - Project	Drawing Number	Rev.	Sheet	

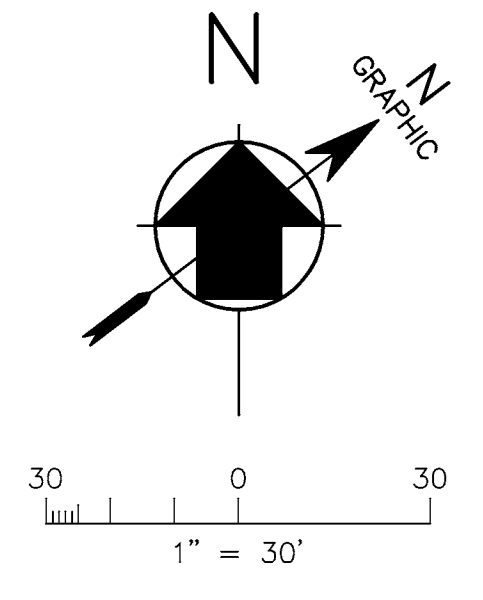
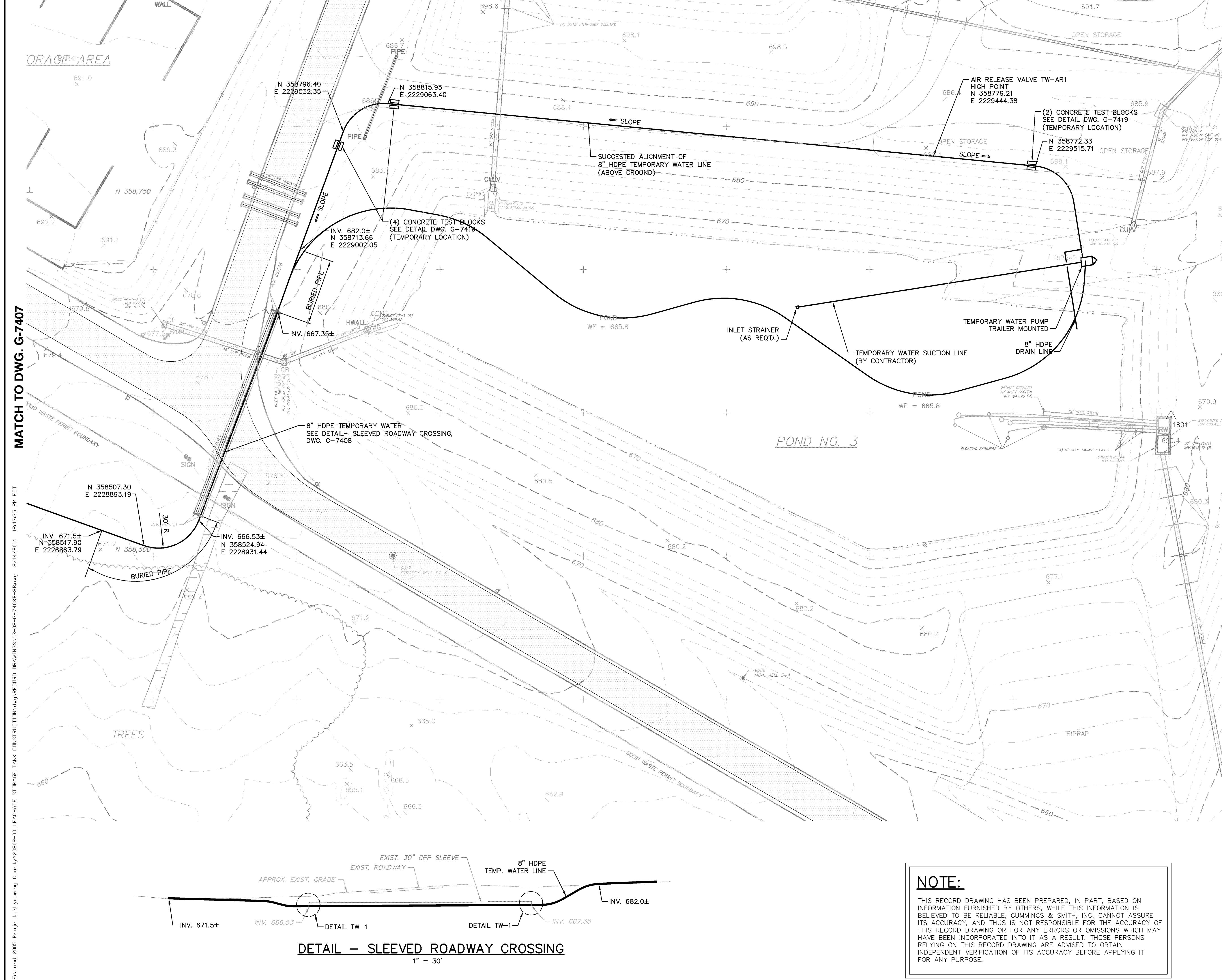


DETAIL - GRAVEL ROADWAY CROSSING - 1
 1" = 30'

MATCH TO DWG. G-7406

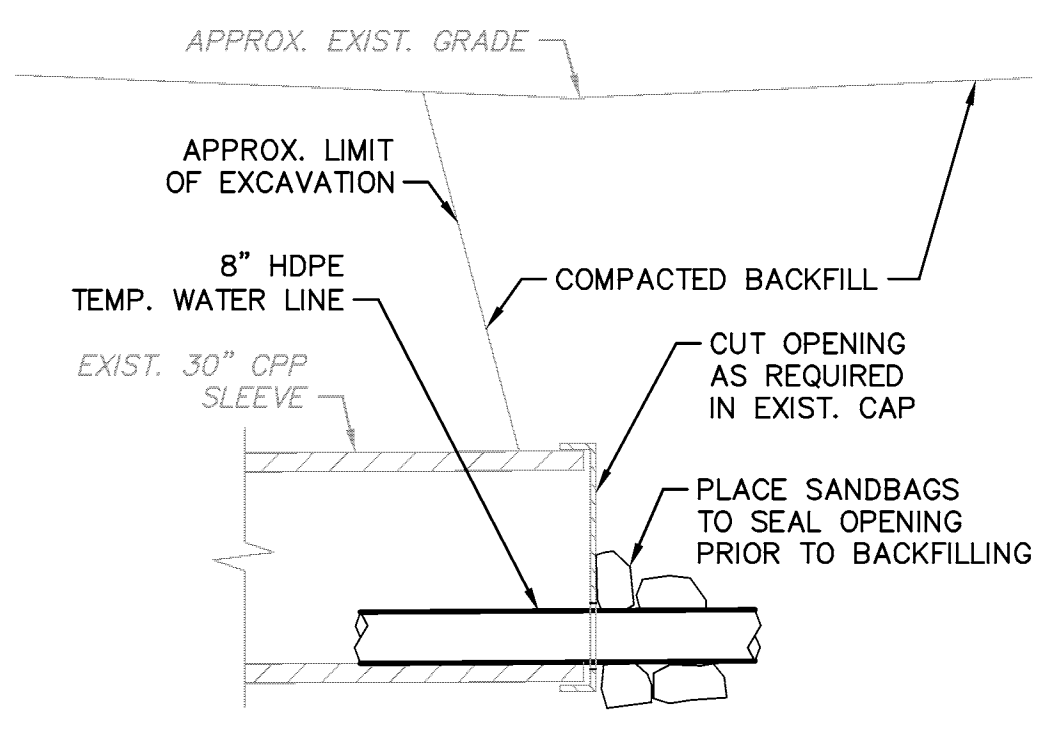
MATCH TO DWG. G-7408

E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction\dwg\RECORD DRAWINGS\03-08-G-7403B-8B.dwg 2/14/2014 12:47:35 PM EST

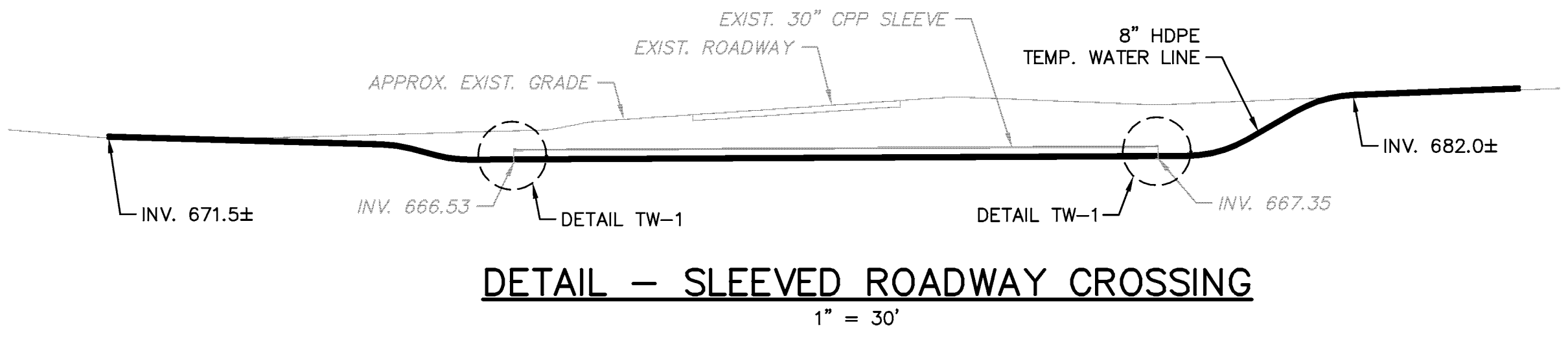


TEMPORARY WATER LINE NOTES

1. CONTRACTOR SHALL PROVIDE AIR RELEASE VALVES AT ALL HIGH POINTS ON THE TEMPORARY WATER LINE.
2. CONTRACTOR SHALL PROVIDE ALL VALVES, FITTINGS, ANCHORS, AND ALL OTHER ITEMS NEEDED TO CONNECT THE TEMPORARY WATER PUMP (SUPPLIED BY CONTRACTOR) TO THE TEMPORARY WATER LINE AND TO ALLOW PUMPING TO AND FROM THE LEACHATE TANK FOR TANK TESTING.
3. OWNER WILL OPERATE THE POND NO. 3 OUTLET VALVES TO MAINTAIN NORMAL OPERATING WATER LEVEL AT ELEVATION 670.0 DURING THIS PROJECT. WATER LEVEL MAY BE HIGHER OR LOWER DEPENDING ON RAINFALL DURING CONSTRUCTION.
4. THE ARRANGEMENT OF THE TEMPORARY WATER LINE SHOWN IS SUGGESTED FOR GUIDANCE. THE CONTRACTOR MAY, WITH THE ENGINEERS APPROVAL, MODIFY IT AS REQUIRED TO SUIT HIS NEEDS.
5. THE 8" SDR 17 HDPE PIPE WILL BE FURNISHED TO THE CONTRACTOR BY THE OWNER AND WILL BE LEFT IN PLACE AFTER TESTING. THE CONTRACTOR MAY REMOVE AND SALVAGE ALL VALVES, FITTINGS, PUMP AND ACCESSORIES SUPPLIED BY HIM. ALL ACCESSORIES PURCHASED FOR THE PROJECT SHALL BE TURNED OVER TO THE OWNER.
6. THE CONTRACTOR SHALL BRING THE TEMPORARY WATER LINE UP, OVER AND DOWN TO THE INSIDE BOTTOM OF THE TANK FOR TIGHTNESS TESTING. WATER DISCHARGED INTO THE TANK MUST BE DONE HORIZONTAL TO TANK INVERT LEVEL AND SHALL NOT BE ALLOWED TO FALL FROM TOP OF TANK WALL TO BOTTOM OF TANK. A "T" OR "L" IS REQUIRED AT THE BOTTOM OF THE TANK AND AN AIR RELEASE VALVE SHALL BE INSTALLED AT THE TOP OF THE RISER.



DETAIL - TW-1
NOT-TO-SCALE



DETAIL - SLEEVED ROADWAY CROSSING
1" = 30'

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	Date	Description	Made	Check	Appd.
A	2-7-14	RECORD DRAWING	GJB	-	-
REVISIONS					
DATE RELEASED FOR					
-	-	W-LEACHATE-TANK-TOP-2011-TRIMMED-X	0,0		
-	-	LY-UMAS-2010-LEACHATE-TANK-X	0,0		

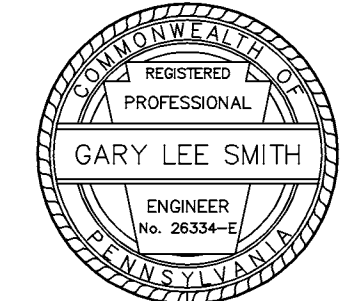
Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
General

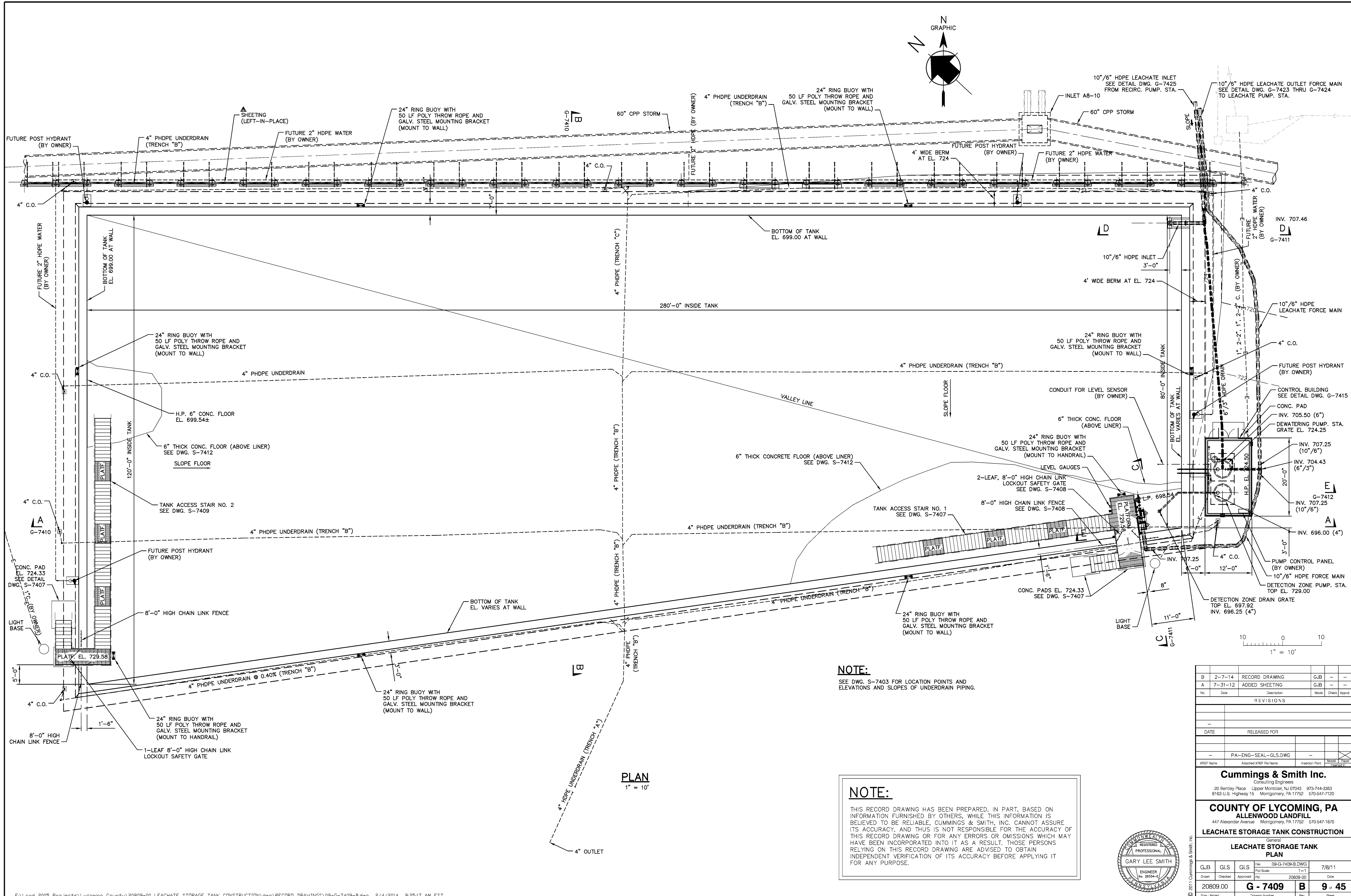
LOCATION AND GRADING PLAN-5

GJB	GLS	GLS	File:03-08-G-7403B-8B.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809-00	
Size - Project		Drawing Number		Rev.
		G - 7408		A 8 of 45



E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION\DWG\RECORD DRAWINGS\03-08-G-7403B-8B.dwg 2/14/2014 12:47:35 PM EST

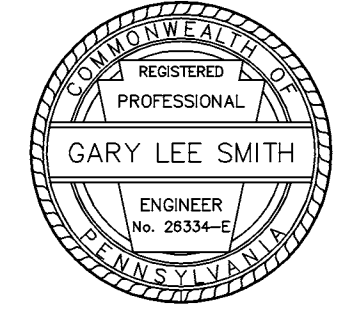
MATCH TO DWG. G-7407

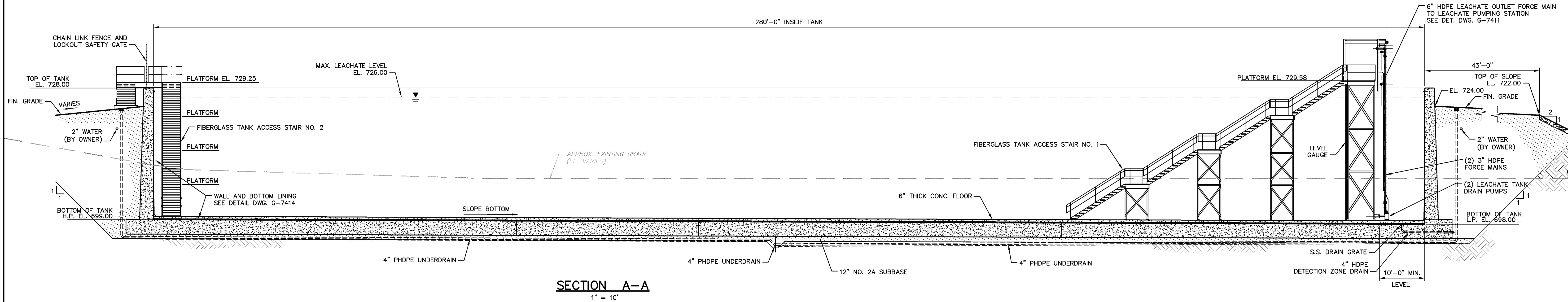


No.	Date	Description	Drawn	Check	Appr.
REVISIONS					

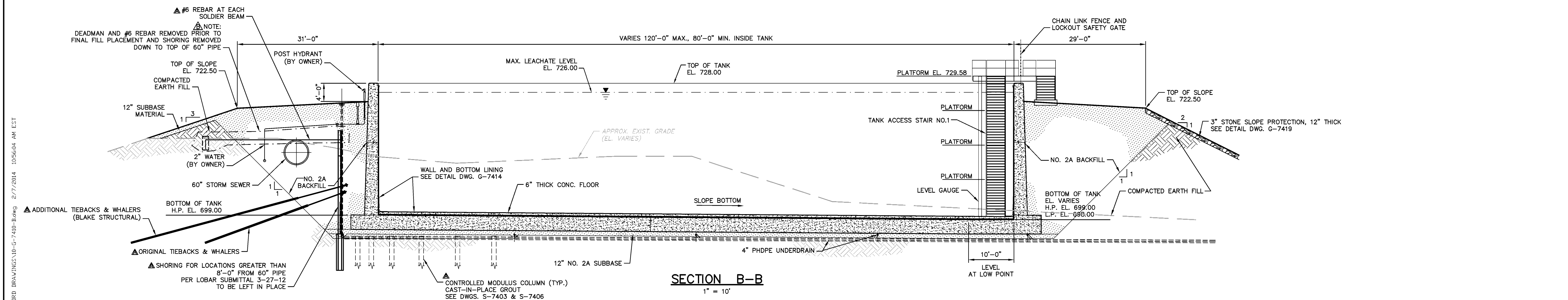
DATE	RELEASED FOR

Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
General LEACHATE STORAGE TANK PLAN					
GJB	GLS	GLS	File: 09-G-7409-B.DWG	7/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=10'	Date	
20809.00			20809.00		
Size - Project	Drawing Number	Rev.	Sheet		
	G - 7409	B	9 of 45		



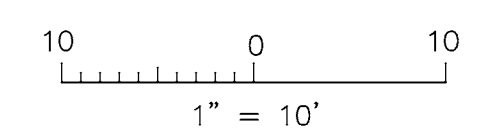
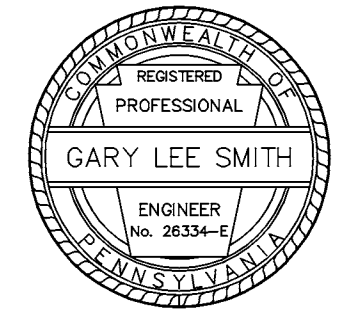


SECTION A-A
1" = 10'



SECTION B-B
1" = 10'

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



B	2-7-14	RECORD DRAWING	GJB	-	-
A	7-30-12	ADDED SHEETING & CMC'S	GJB	-	-
No.	Date	Description	Drawn	Check	Appr.
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
XREF Name	Attached XREF File Name	Insertion Point	Checked	Prepared	Approved

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

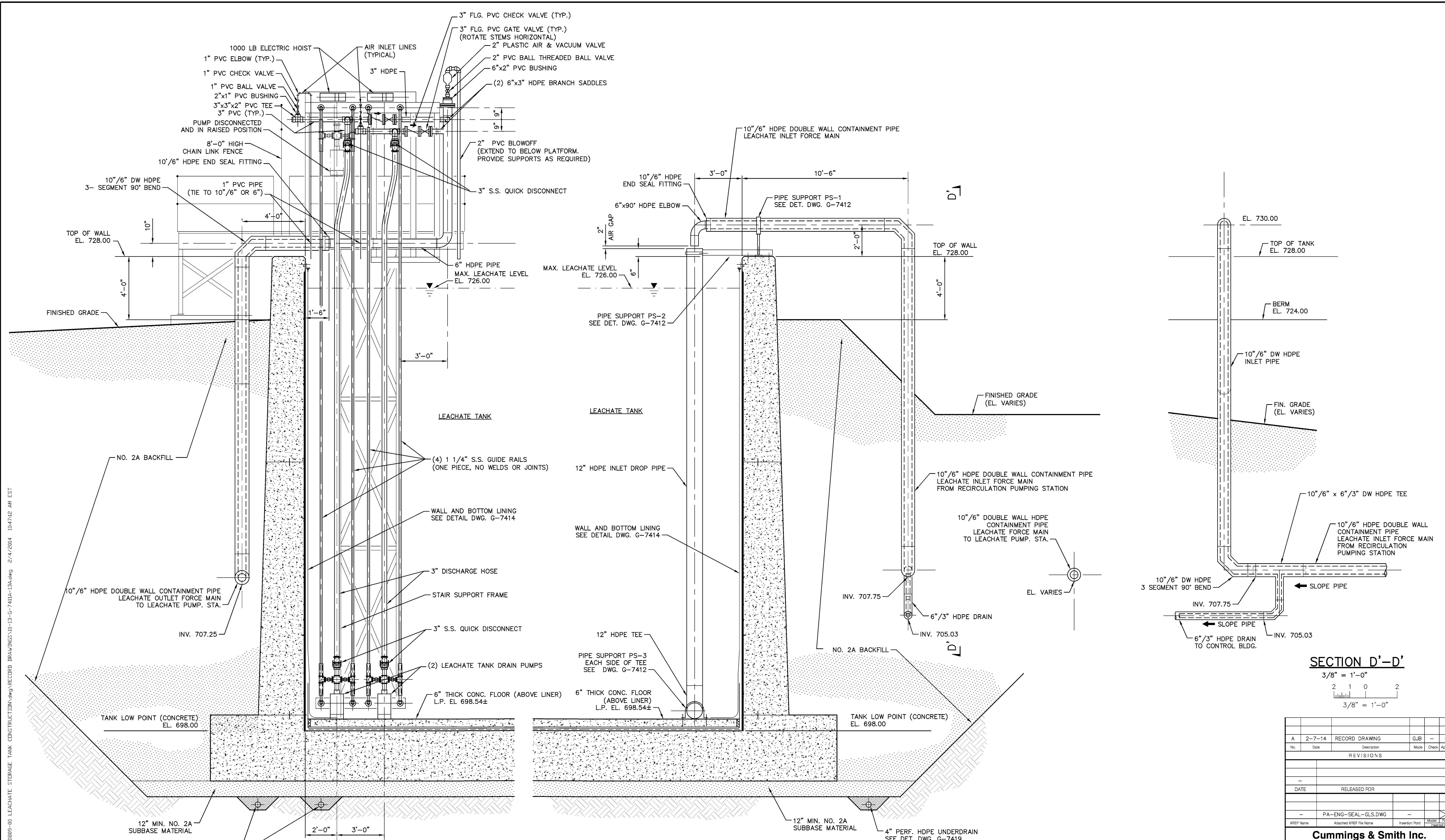
LEACHATE STORAGE TANK CONSTRUCTION

LEACHATE STORAGE TANK SECTIONS - 1

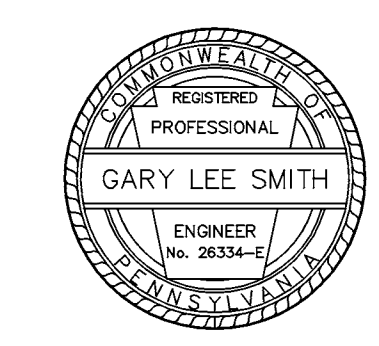
GJB	GLS	GLS	File: 10-G-7410-B.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 20809-00	Date
D-20809.00	G - 7410	B	10	45
Size - Project	Drawing Number	Rev.	Sheet	

© 2011 Cummings & Smith, Inc.

E:\Land 2005 Projects\Lycoming County\20809-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG RECORD DRAWINGS\10-G-7410-B.dwg 2/7/2014 10:56:04 AM EST



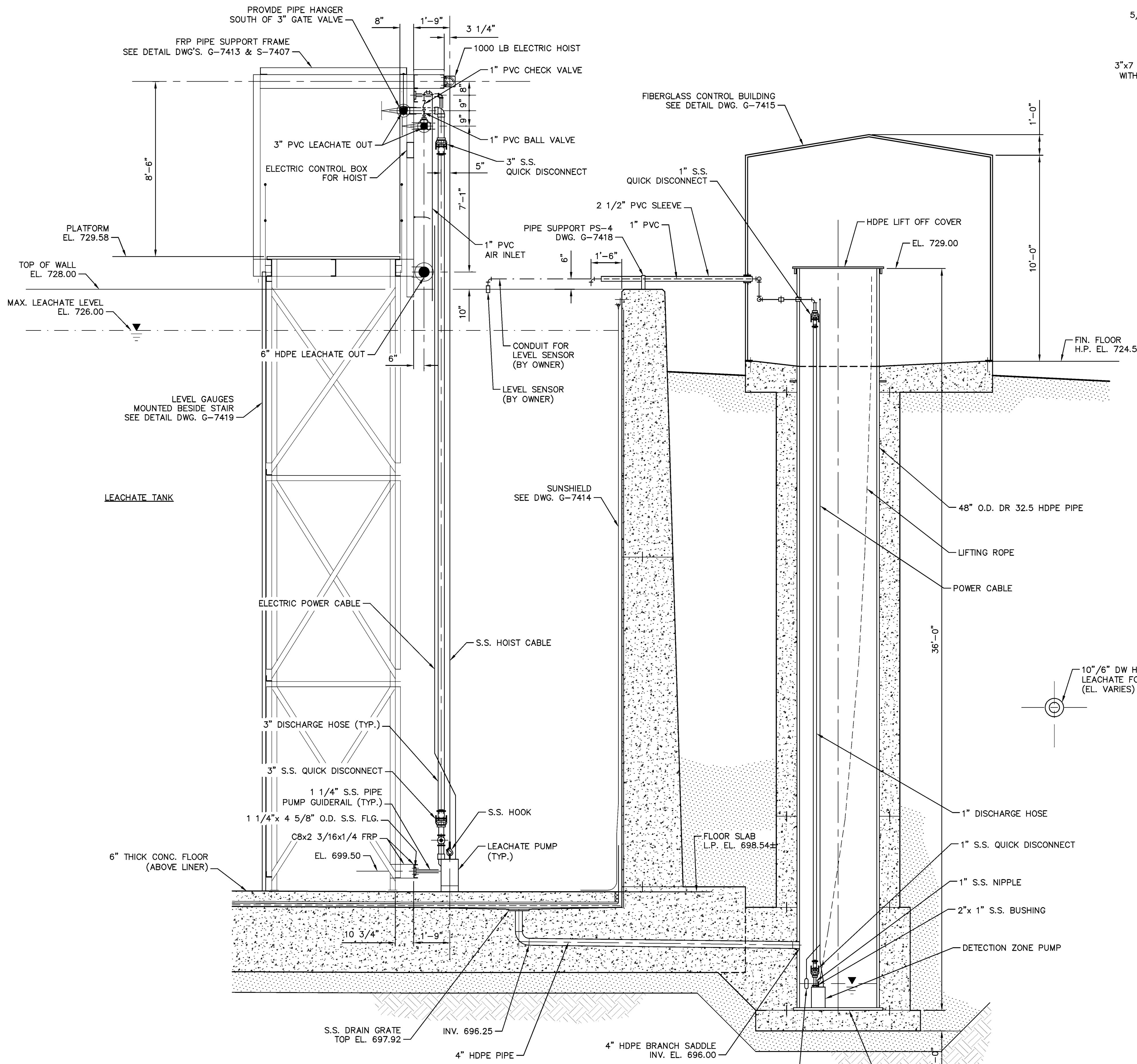
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	RECORD DRAWING	Distortion	Maker	Check	Appr.
REVISIONS						
DATE RELEASED FOR						
PA-ENG-SEAL-GLS.DWG						
XREF Name	Attached XREF File Name	Insertion Point	Block	Layer	Color	Weight
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120						
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870						
LEACHATE STORAGE TANK CONSTRUCTION General LEACHATE STORAGE TANK DETAILS - 1						
GJB	GLS	GLS	F441-13-G-7411A-13A.DWG	7/8/11		
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date		
D-20809.00			20809-00			
G - 7411			A	11 of 45		
Size - Project		Drawing Number		Rev. Sheet		

E:\Land 2005 Projects\Lycoming County\20809-00 LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\11-13-G-7411A-13A.dwg 2/4/2014 10:47:12 AM EST

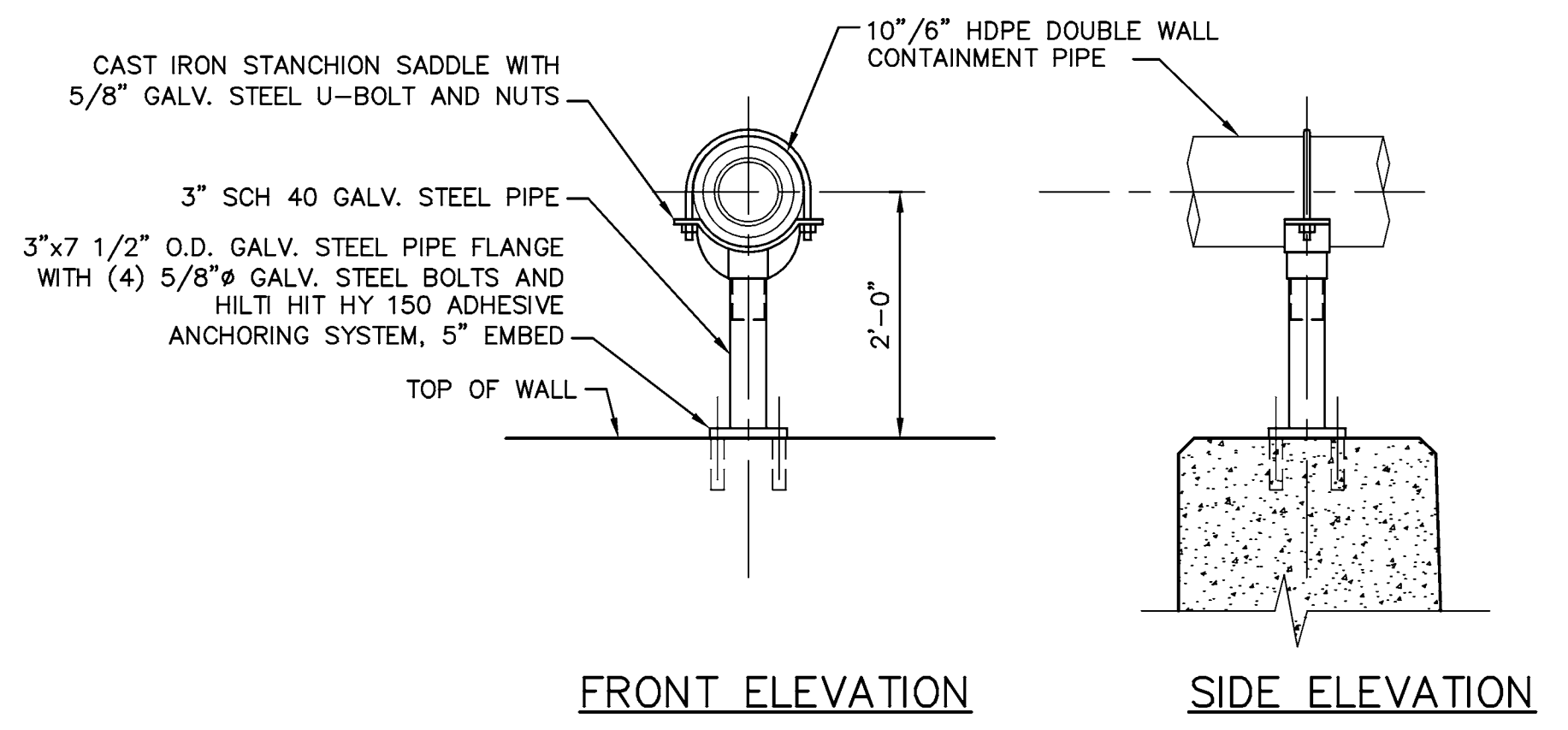
E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\11-13-G-7411A-13A.dwg 2/4/2014 10:49:34 AM EST



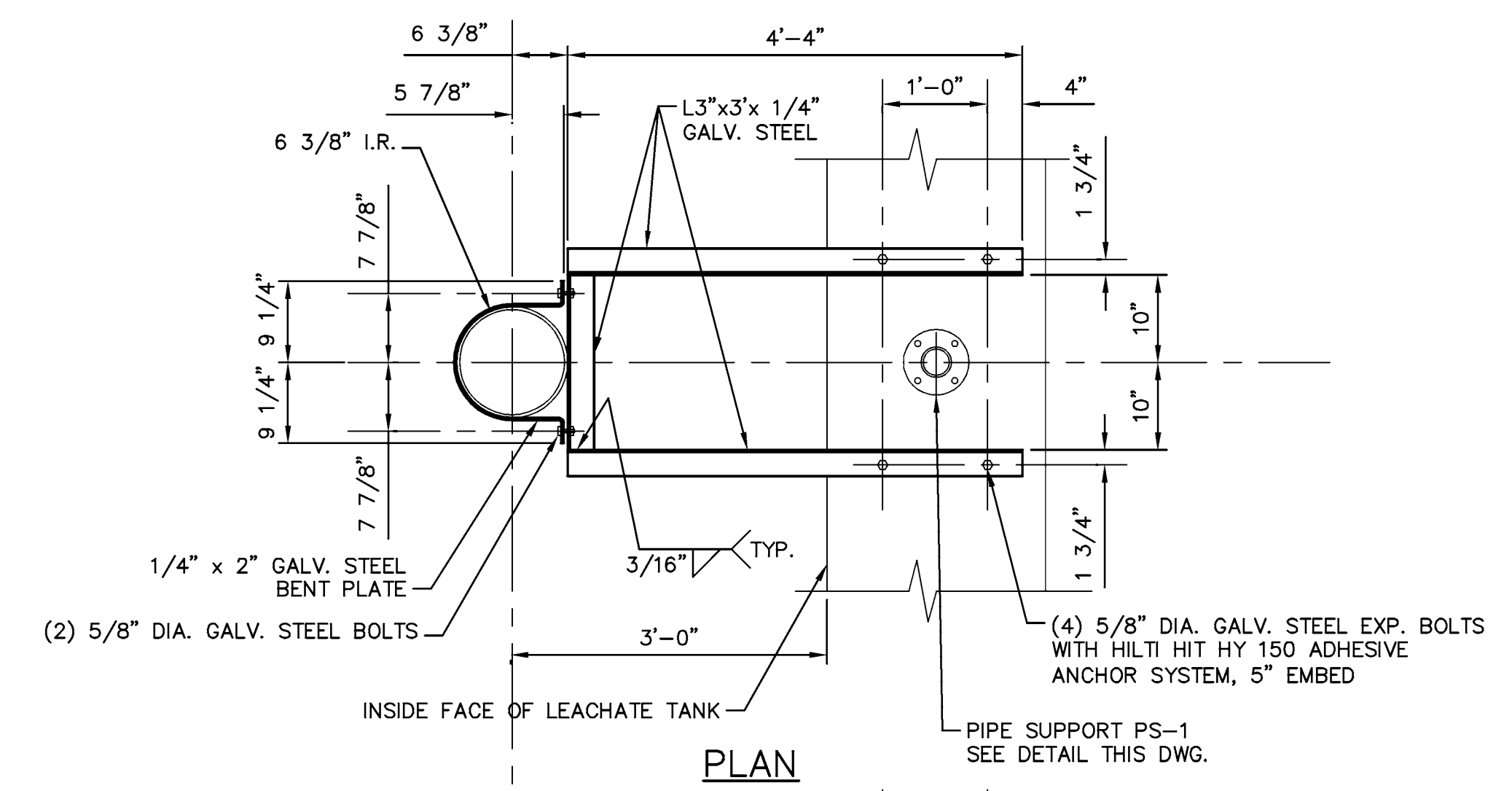
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

NOTE:
PROTECT HDPE WALL LINER AND HDPE GEOMEMBRANE FLOOR LINER FROM SUNLIGHT BY COVERING WITH OPAQUE TARP OR OTHER OPAQUE COVERING AT ALL TIMES DURING CONSTRUCTION EXCEPT WHEN ACTIVELY WORKING ON THOSE ELEMENTS.

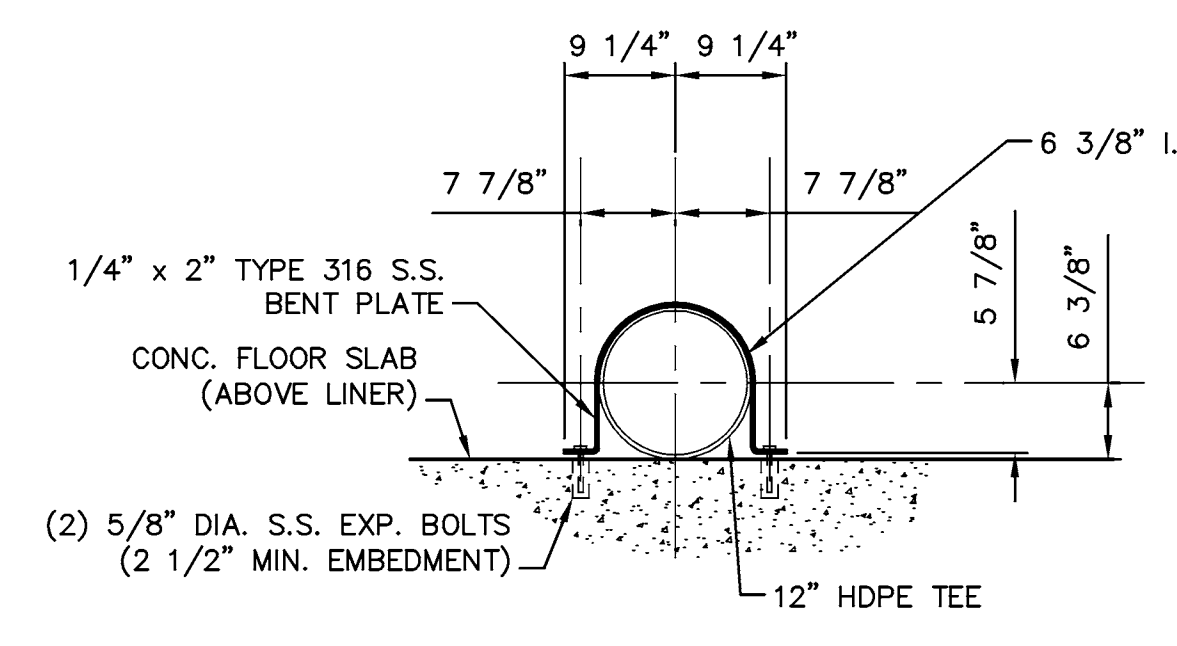
SECTION E-E
3/8" = 1'-0"



DETAIL - PIPE SUPPORT PS-1
3/4" = 1'-0"

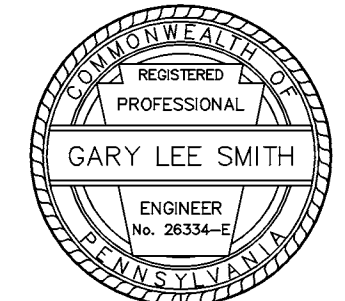


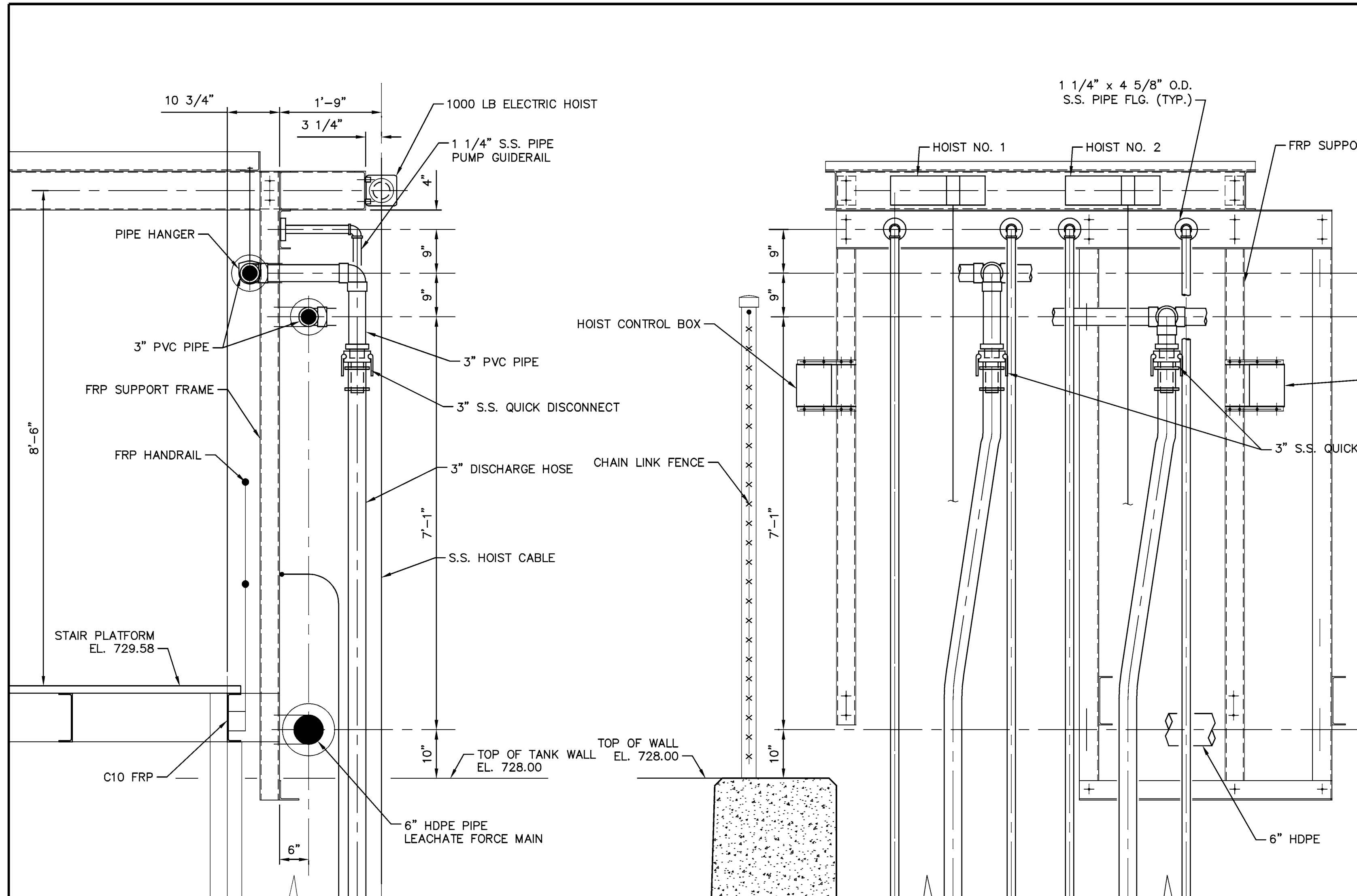
DETAIL - PIPE SUPPORT PS-2
3/4" = 1'-0"



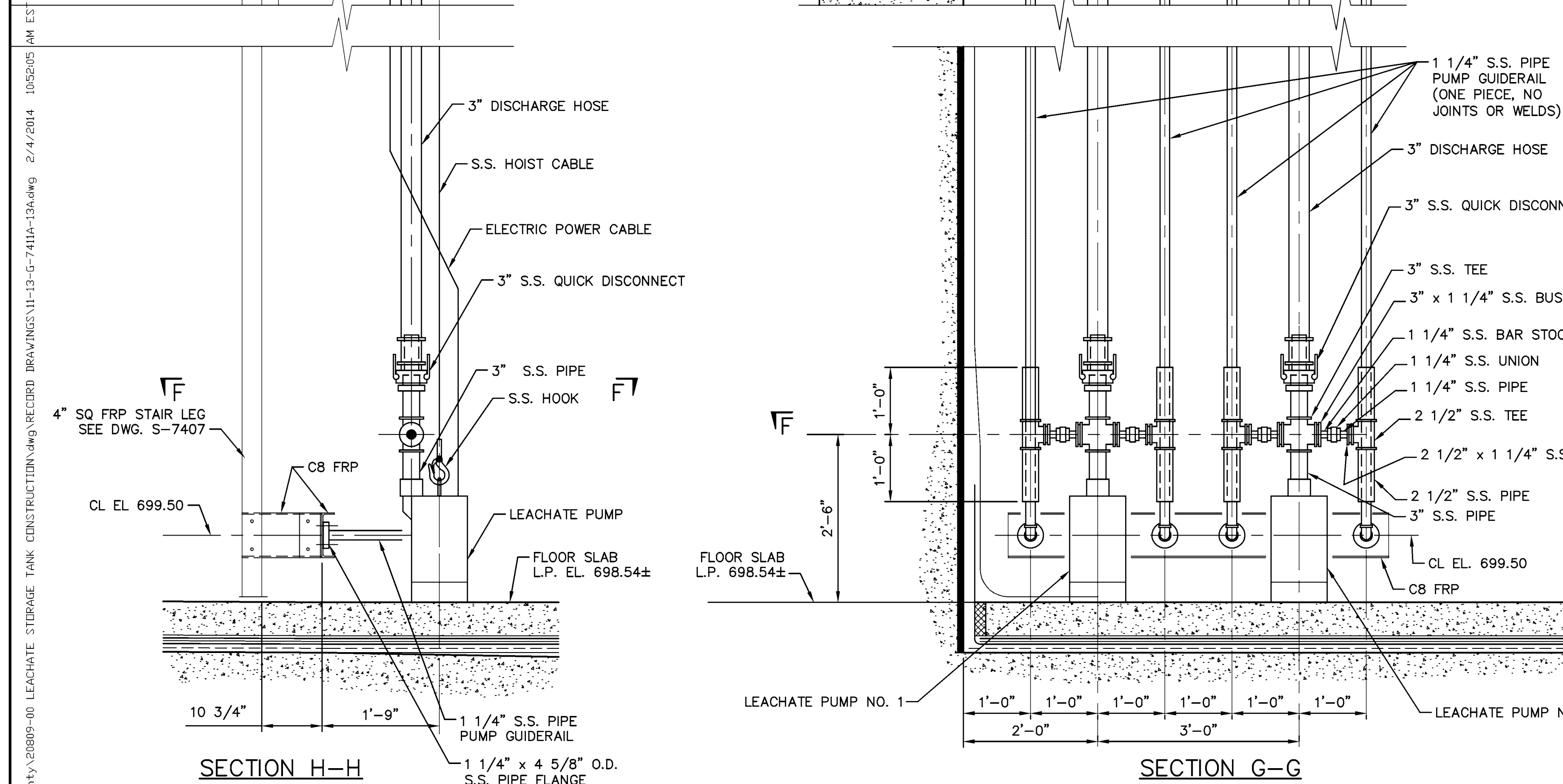
DETAIL - PIPE SUPPORT PS-3
3/4" = 1'-0"

No.	Date	Description	Drawn	Checked	App'd.
A	2-7-14	RECORD DRAWING	GJB		
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION General LEACHATE STORAGE TANK DETAILS - 2					
GJB	GLS	GLS	PA-1-13-G-7411A-13A.DWG	9/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date	
D-20809.00			20809-00		
Size - Project		Drawing Number		Rev.	Sheet
		G - 7412		A	12 of 45

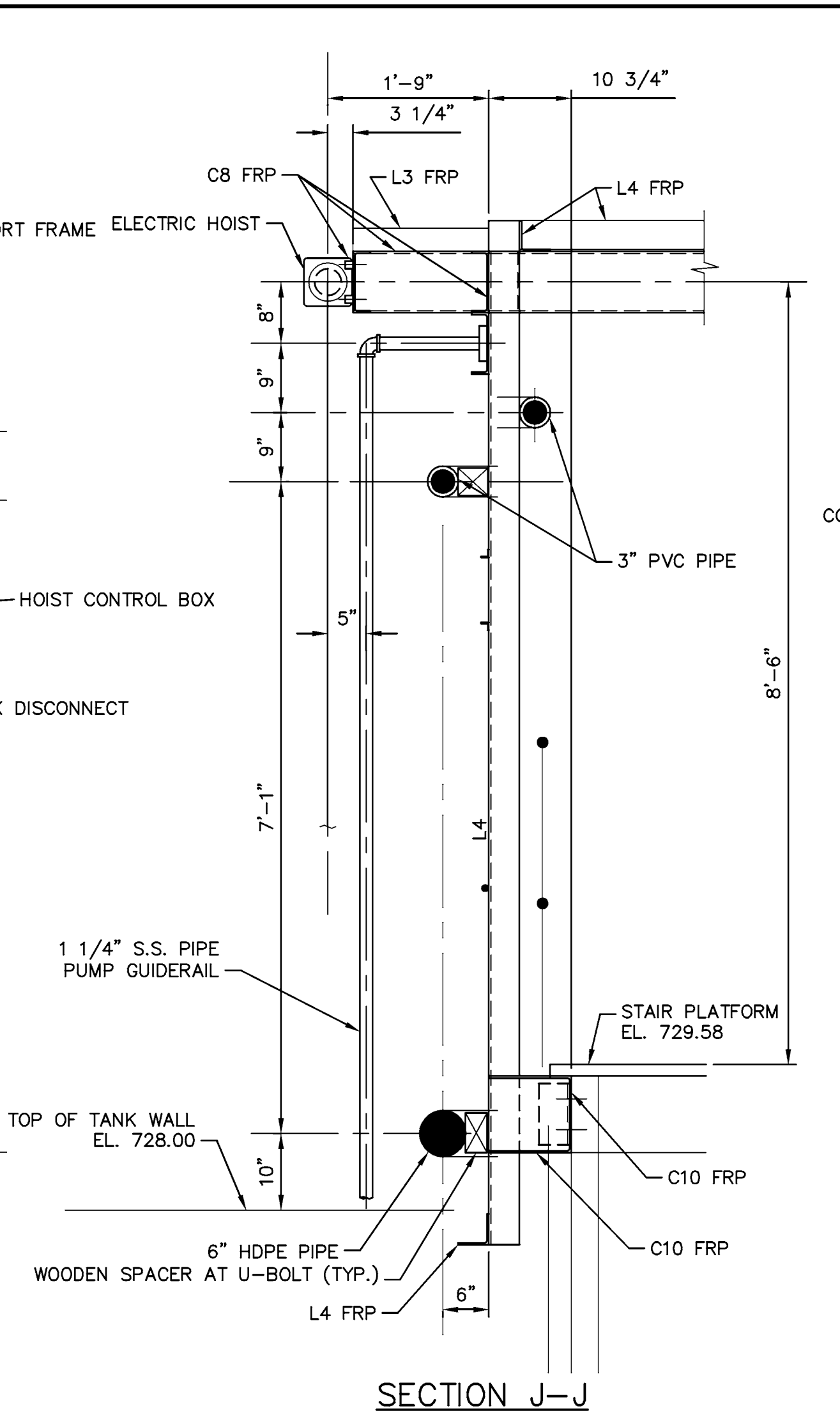




DETAIL - LEACHATE PUMP ASSEMBLY
3/4" = 1'-0"

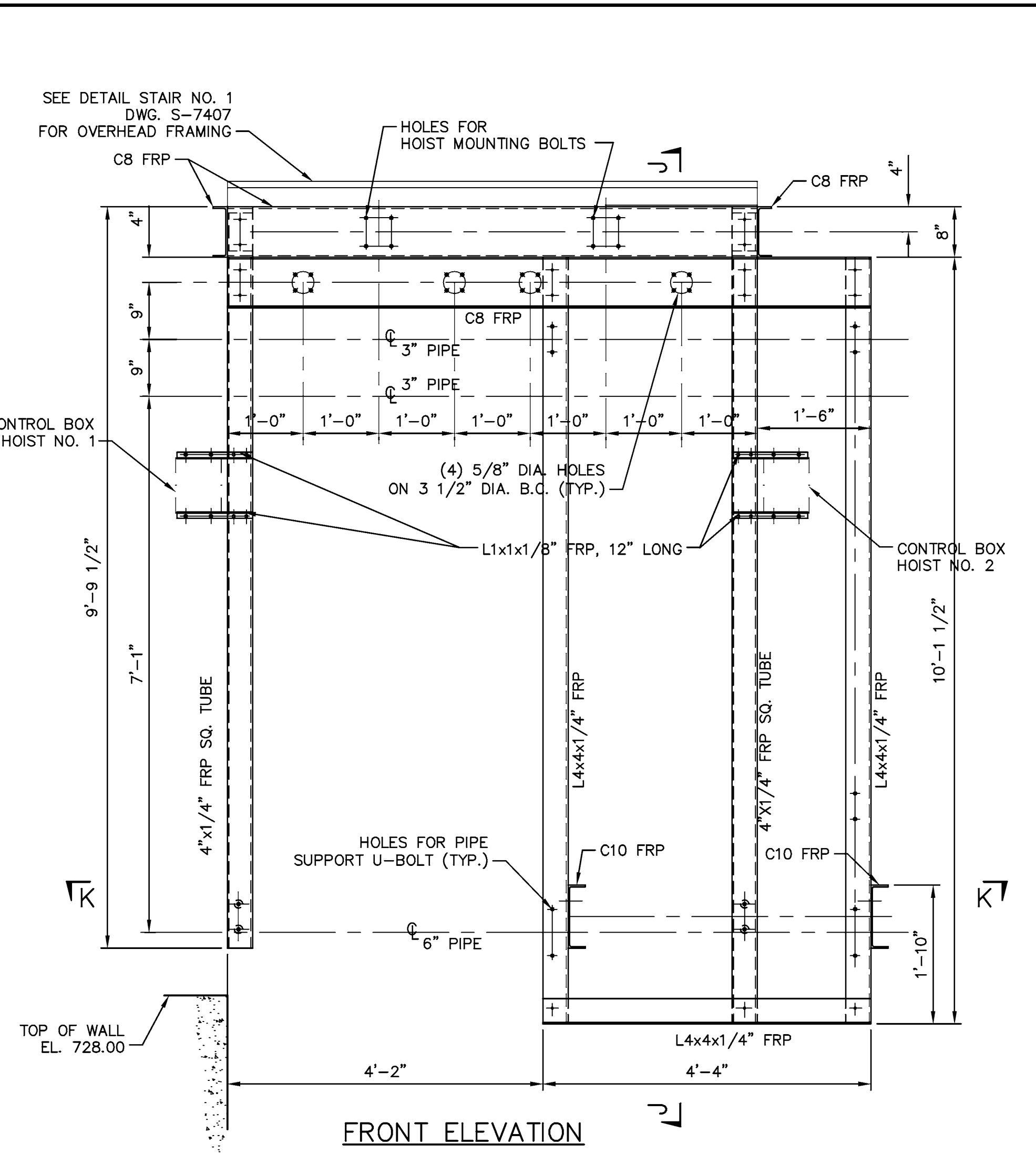


SECTION G-G

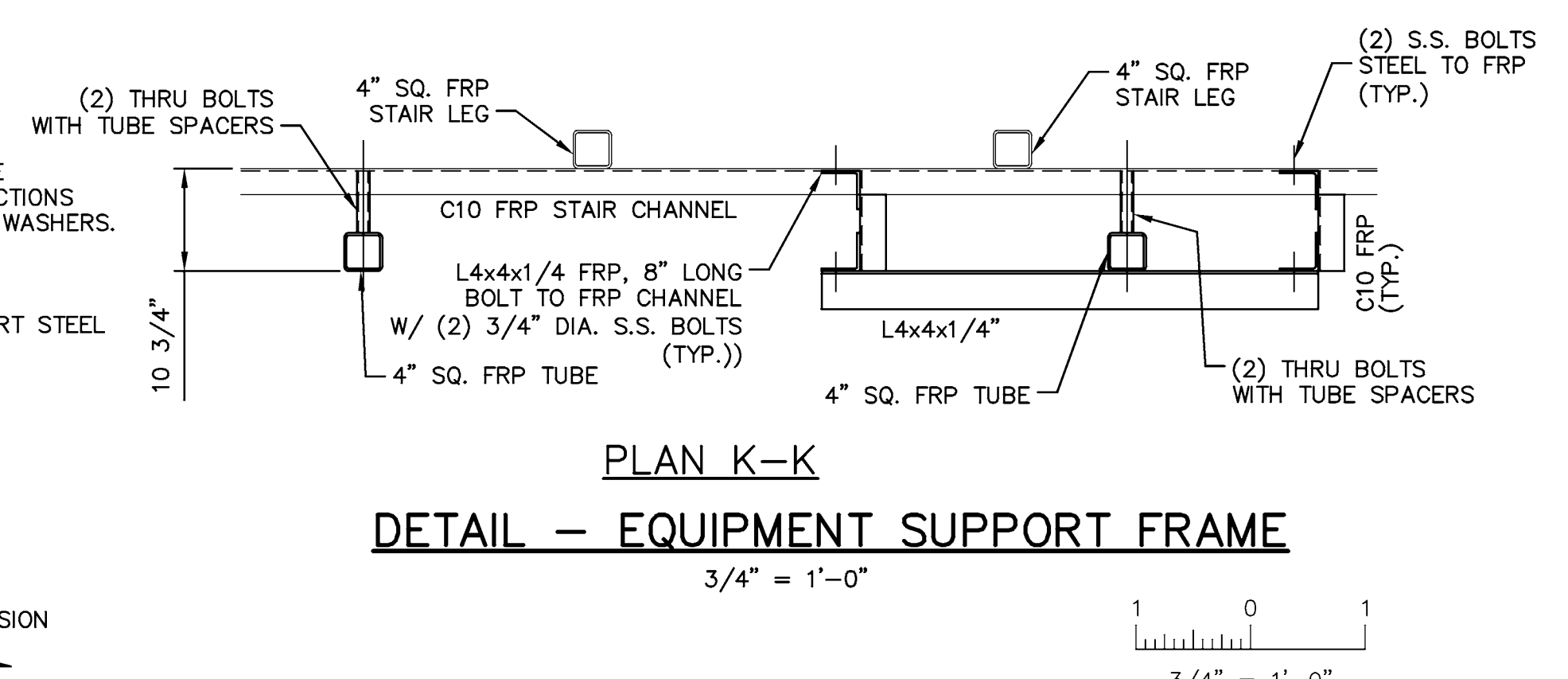


SECTION J-J

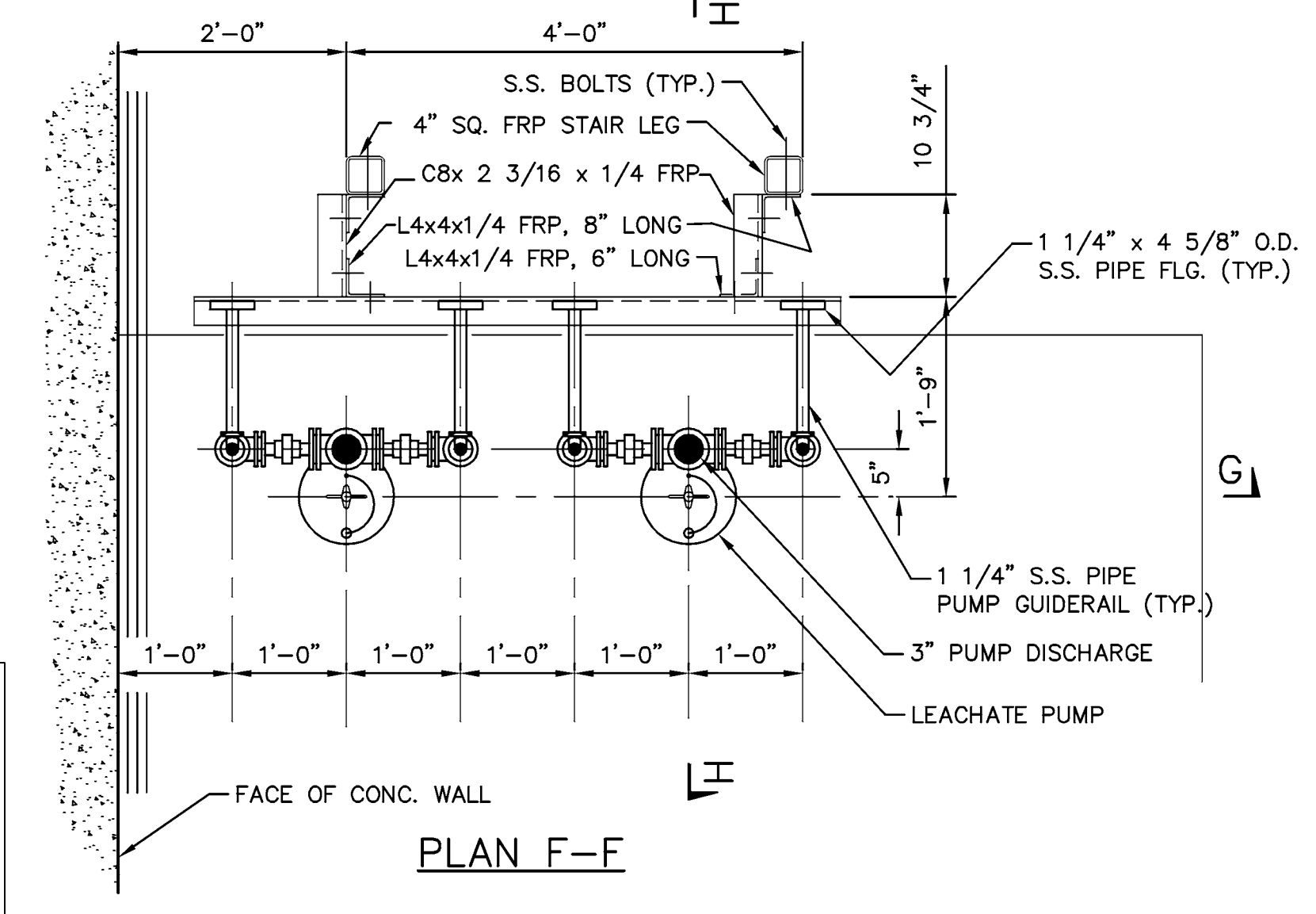
- SUPPORT FRAME NOTES:**
1. VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
 2. SUPPORT FRAME SHALL BE FIBERGLASS (FRP) CONSTRUCTION EXCEPT WHERE OTHERWISE NOTED. ALL CONNECTIONS TO FRAME AND PIPE SUPPORT CONNECTIONS SHALL BE BOLTED WITH STAINLESS STEEL BOLTS, NUTS, WASHER AND LOCK WASHERS.
 3. THIS DWG. IS A SUPPLEMENT TO DETAIL STAIR NO. 1, DWG. S-7407.
 4. PROVIDE PRESSURE TREATED WOODEN SPACERS BETWEEN PIPES AND SUPPORT STEEL AT ALL U-BOLTS.
 5. FRP MEMBER SIZES:
 - 4" SQ. = 4"x4"x1/4" FRP SQUARE TUBE
 - C10 = 10"x2 3/4"x1/2" FRP CHANNEL
 - C8 = 8"x2 3/16"x3/8" FRP CHANNEL
 - L4 = 4"x4"x1/4" FRP ANGLE
 - L3 = 3"x3"x1/4" FRP ANGLE
 6. FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES. LARGER DIMENSION MEMBERS MAY BE SUPPLIED.



FRONT ELEVATION

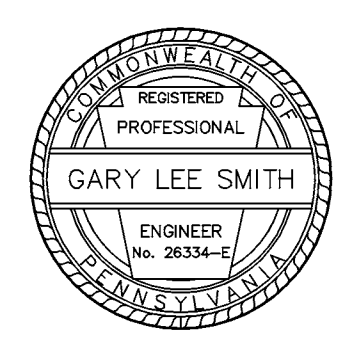


DETAIL - EQUIPMENT SUPPORT FRAME
3/4" = 1'-0"



PLAN F-F

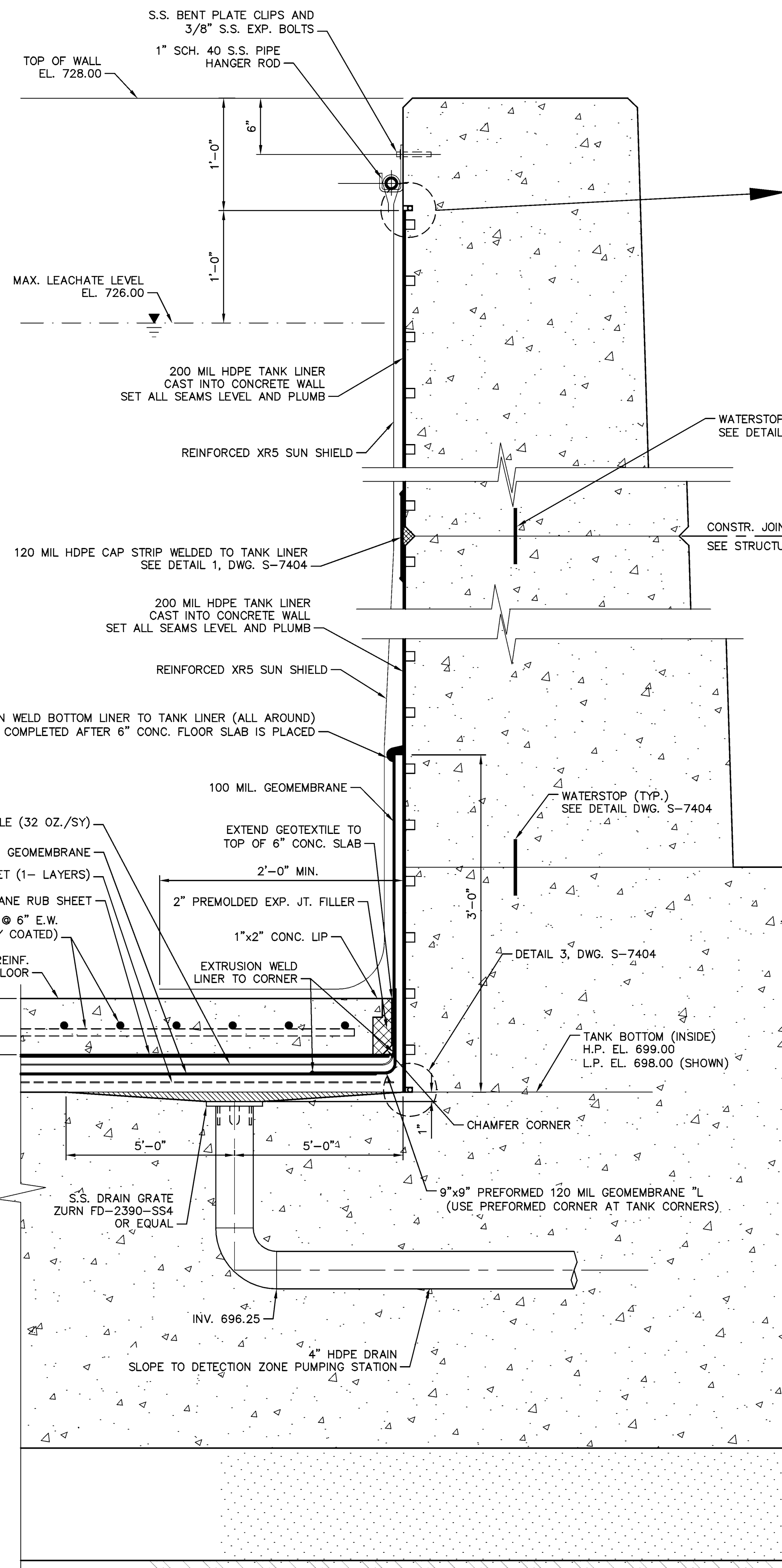
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



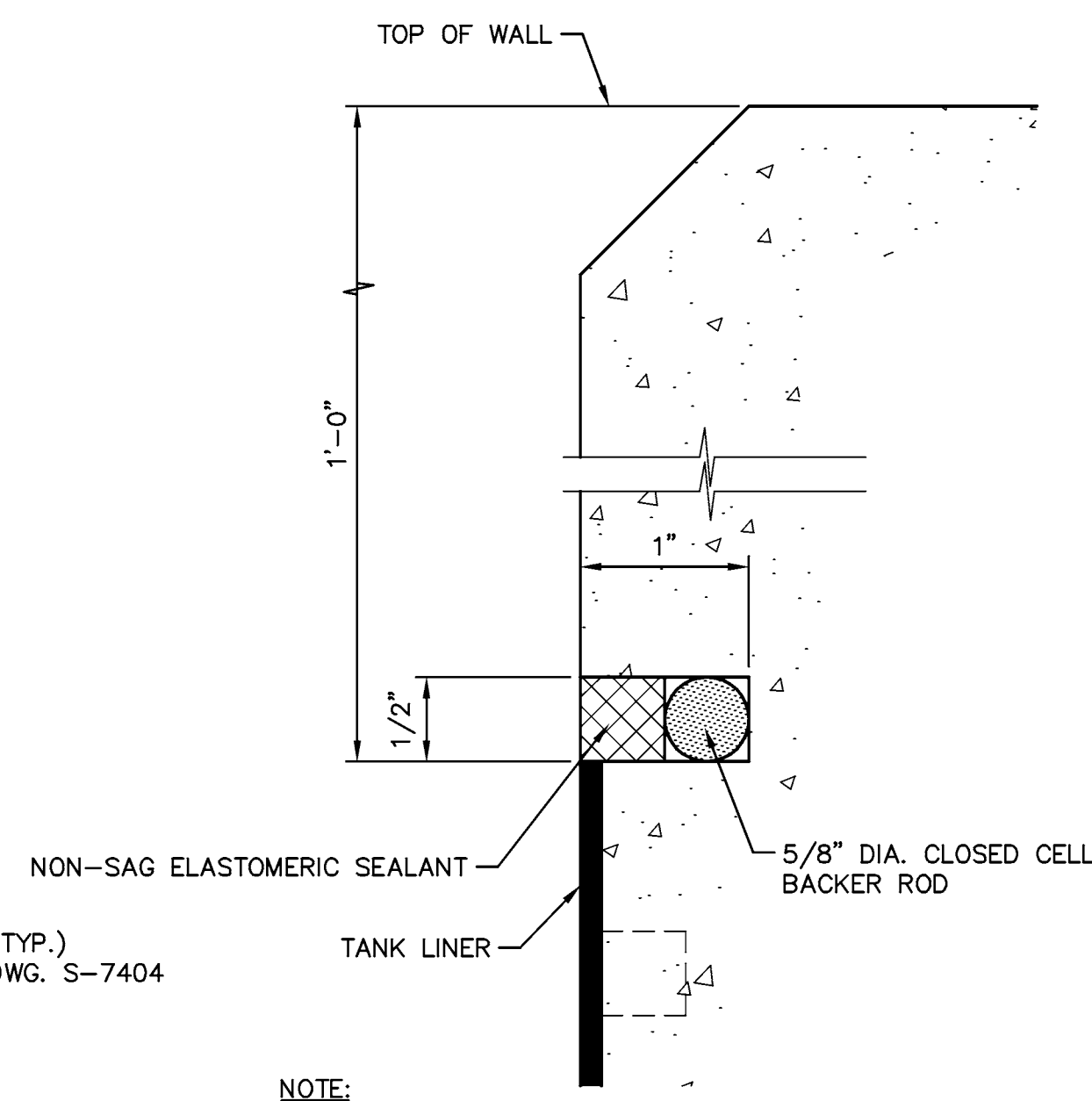
A	2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Made	Check	Appd.
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION General					
DETAIL - LEACHATE PUMP ASSEMBLY					
GJB	GLS	GLS	PA11-13-G-7411A-13A.DWG	7/8/11	
Drawn	Checked	Approved	Rev	20809-00	Date
D-20809.00			G - 7413	A	13 of 45
© 2011 Cummings & Smith, Inc.					

E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWINGS\11-13-G-7411A-13A.dwg 2/4/2014 10:52:05 AM EST

E:\Land 2005 Projects\Lycoming County\B889-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG RECORD DRAWINGS\14-G-7414-A.dwg 2/7/2014 12:19:42 PM EST



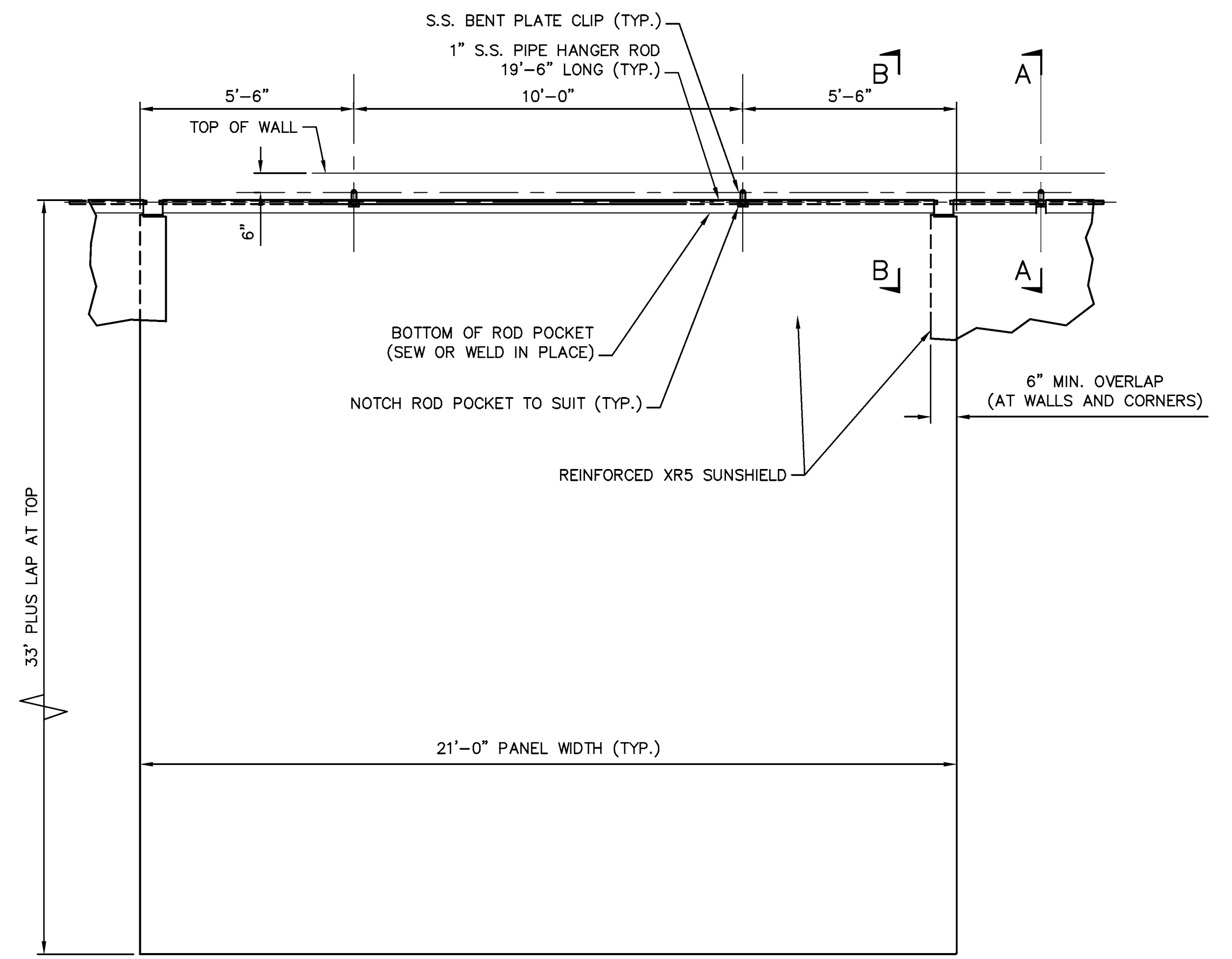
DETAIL - TYPICAL WALL AND BOTTOM LINING
NOT-TO SCALE



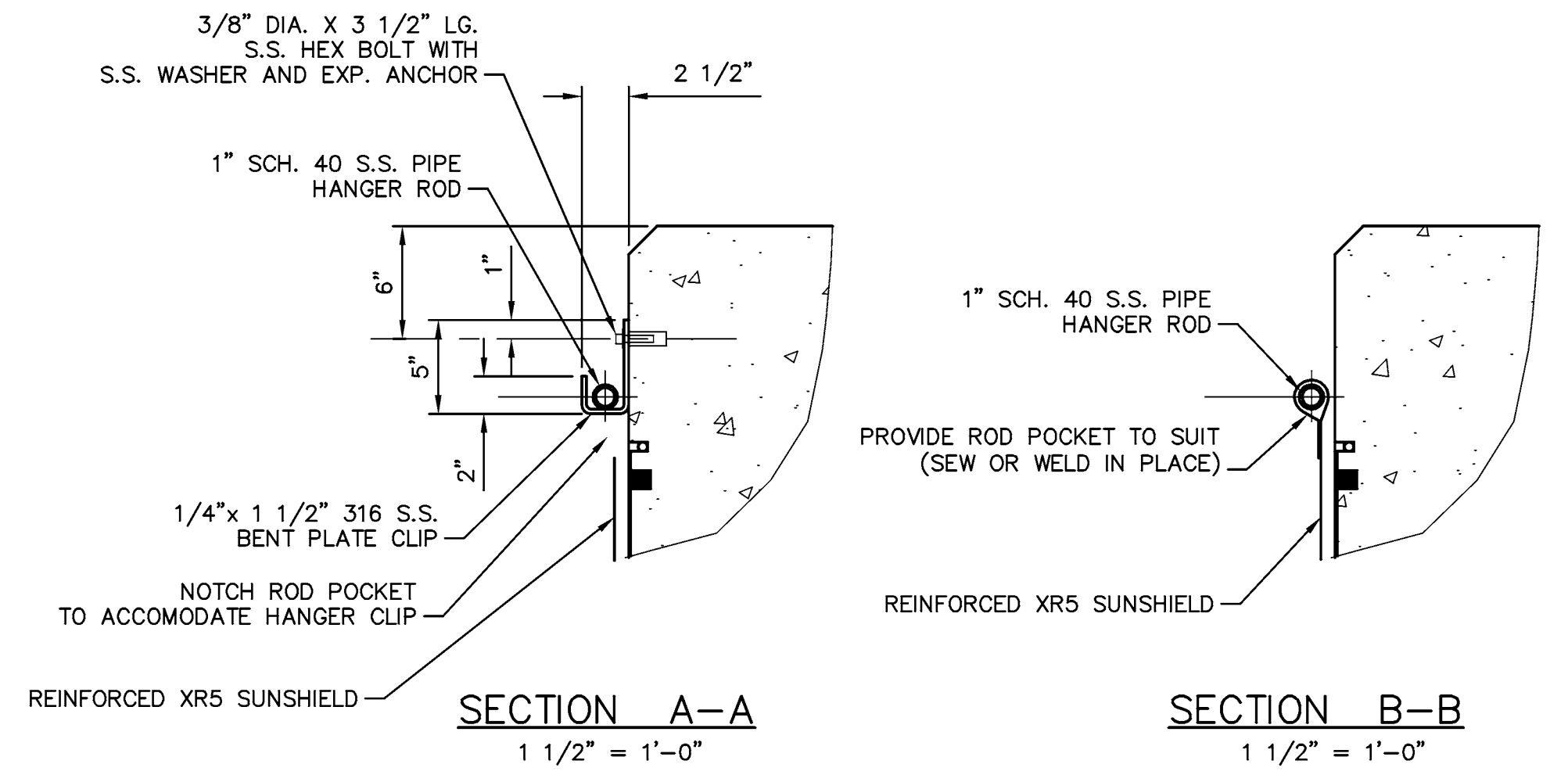
NOTE:
TYPICAL ALL AROUND TOP OF TANK.
JOINT SEALANT DETAIL
NOT-TO-SCALE

BOTTOM LINER NOTES:

1. THE HDPE BOTTOM GEOMEMBRANE LINER SHALL COVER THE ENTIRE TANK AND EXTEND UP THE SIDE WALLS AS SHOWN. GEOMEMBRANE SHALL BE LAID SHINGLE FASHION WITH THE UPHILL ROLL OVERLAYING THE DOWNHILL ROLL WHEREVER POSSIBLE. THE ENTIRE LINER INCLUDING CORNERS AND ENDS SHALL BE WELDED WATERTIGHT.
2. THE CONTRACTOR SHALL FURNISH DRAWINGS OF THE BOTTOM LINER COMPONENTS (GEONETS, 100 MIL GEOMEMBRANE AND GEOTEXTILE) INDICATING ALL PANELS, SEAMS, LOT OR ROLL NUMBER, DATE INSTALLED, SEAM TESTS AND REPAIRS. THE BASE DRAWINGS FOR EACH COMPONENT WILL BE FURNISHED BY THE ENGINEER FOR COMPLETION BY THE CONTRACTOR.
3. PROTECT HDPE WALL LINER AND HDPE GEOMEMBRANE FLOOR LINER FROM SUNLIGHT BY COVERING WITH OPAQUE TARP OR OTHER OPAQUE COVERING AT ALL TIMES DURING CONSTRUCTION EXCEPT WHEN ACTIVELY WORKING ON THOSE ELEMENTS.



TYPICAL FRONT ELEVATION OF SUNSHIELD PANEL
3/8" = 1'-0"



SECTION A-A
1 1/2" = 1'-0"

SECTION B-B
1 1/2" = 1'-0"

DETAIL - TYPICAL SUNSHIELD SUPPORT
SCALE AS NOTED

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Made	Check	Appr.
A	2-7-14	RECORD DRAWING	GJB	-	-

DATE	RELEASED FOR
-	-
-	PA-ENG-SEAL-GLS.DWG

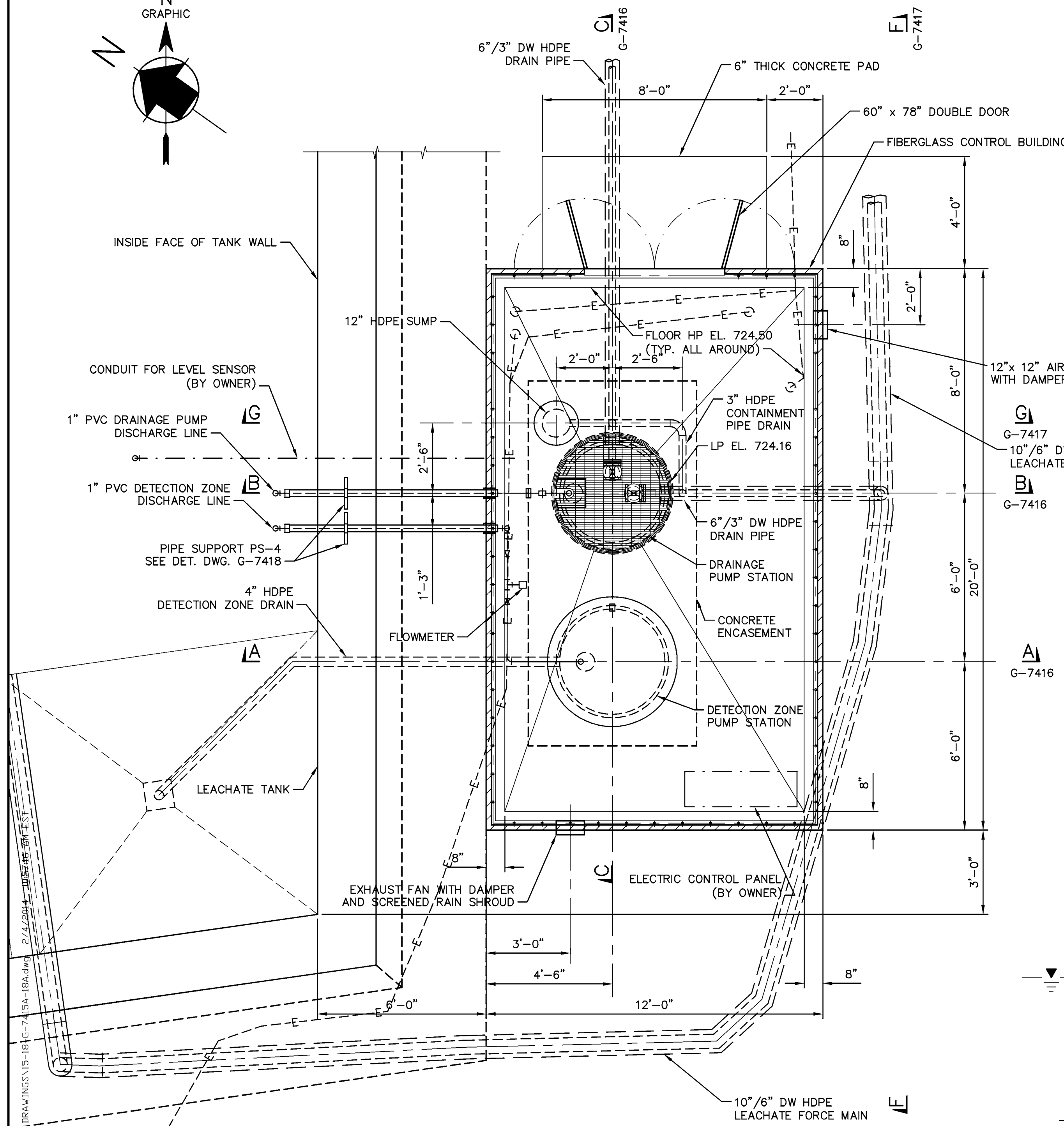
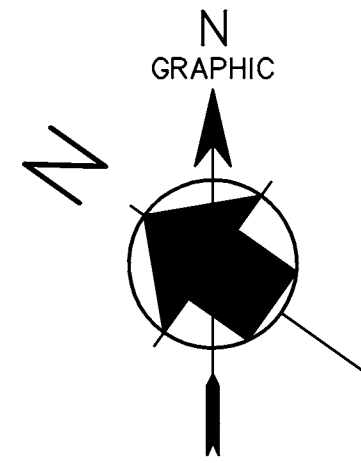
Drawn	Checked	Approved	Date
GJB	GLS	GLS	9/8/11

Size	Project	Drawing Number	Rev.	Sheet
D-20809.00	G-7414	A	14	45

Cummings & Smith, Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

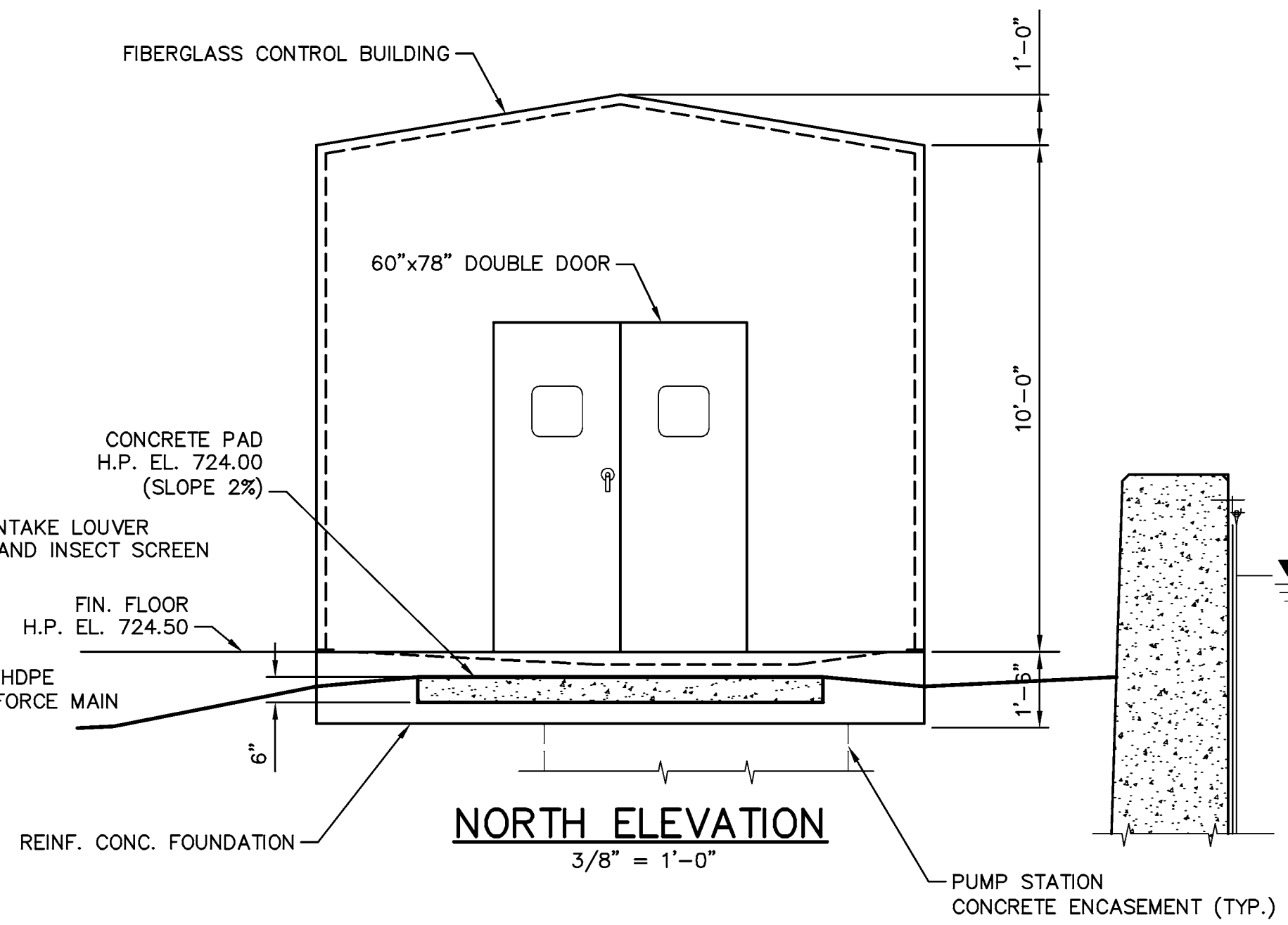
LEACHATE STORAGE TANK CONSTRUCTION
General
LEACHATE STORAGE TANK
DETAILS - 2



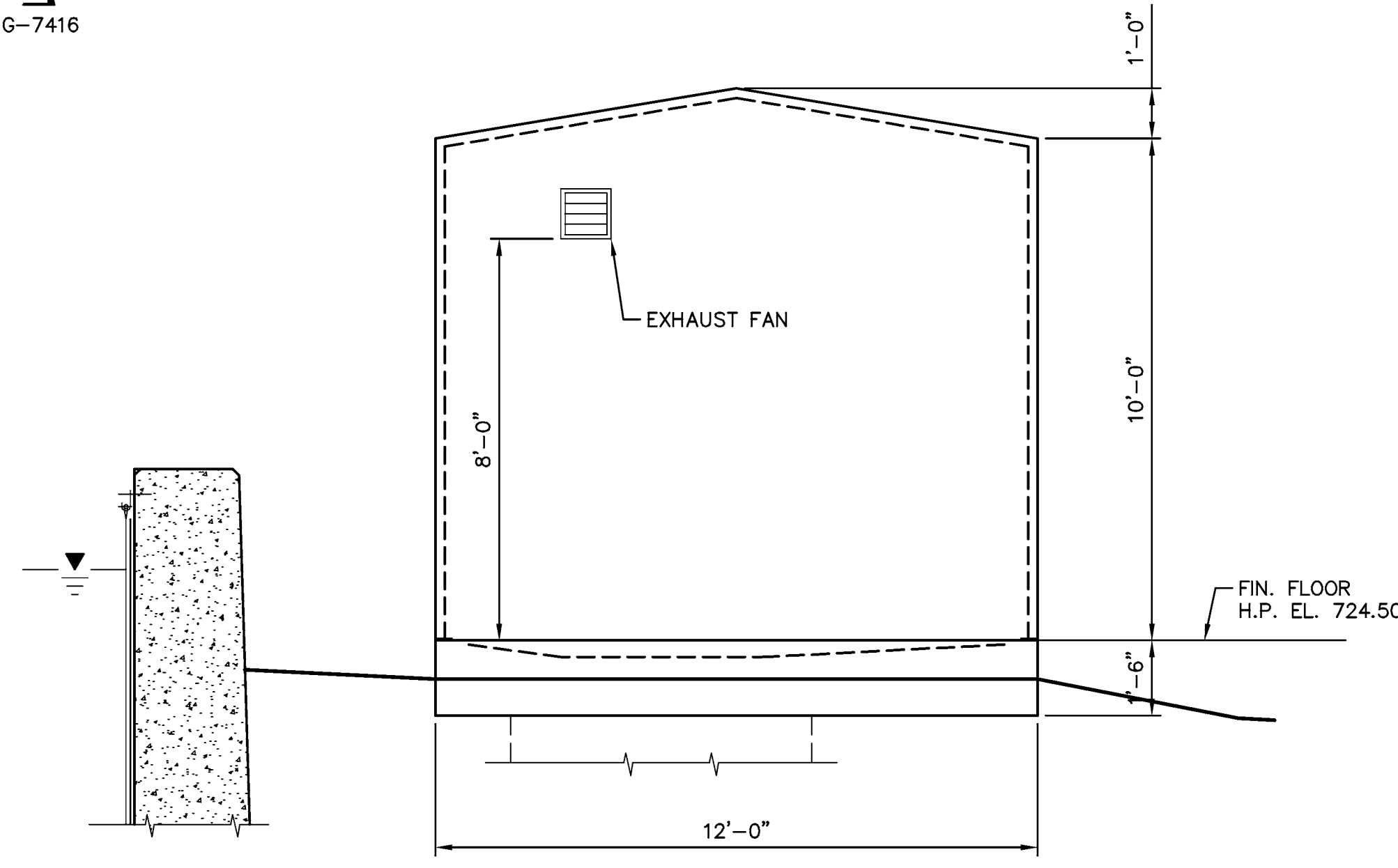
PLAN
3/8" = 1'-0"

NOTE:

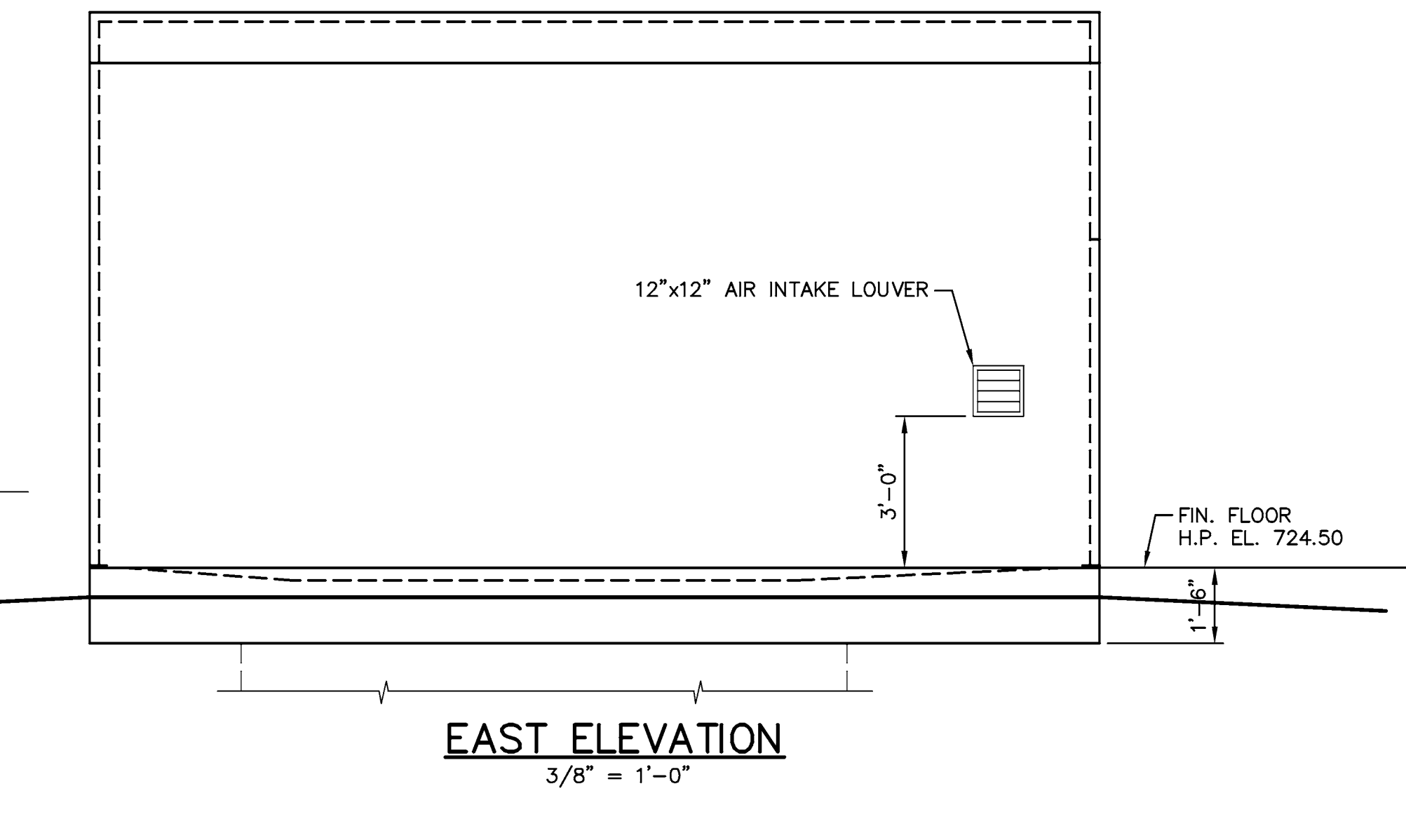
1. SEE DWG'S. S-7413 THROUGH S-7415 FOR CONTROL BUILDING CONCRETE REINFORCEMENT.
2. UNLESS OTHERWISE NOTED ALL ELECTRIC WORK FOR POWER, LIGHTING AND CONTROLS WILL BE DONE BY THE OWNER. THIS CONTRACTOR SHALL COORDINATE AND SCHEDULE THE ELECTRIC REQUIREMENTS FOR ALL RUNS THROUGH THE BUILDING STRUCTURE AT NO ADDITIONAL EXPENSE TO THE OWNER.



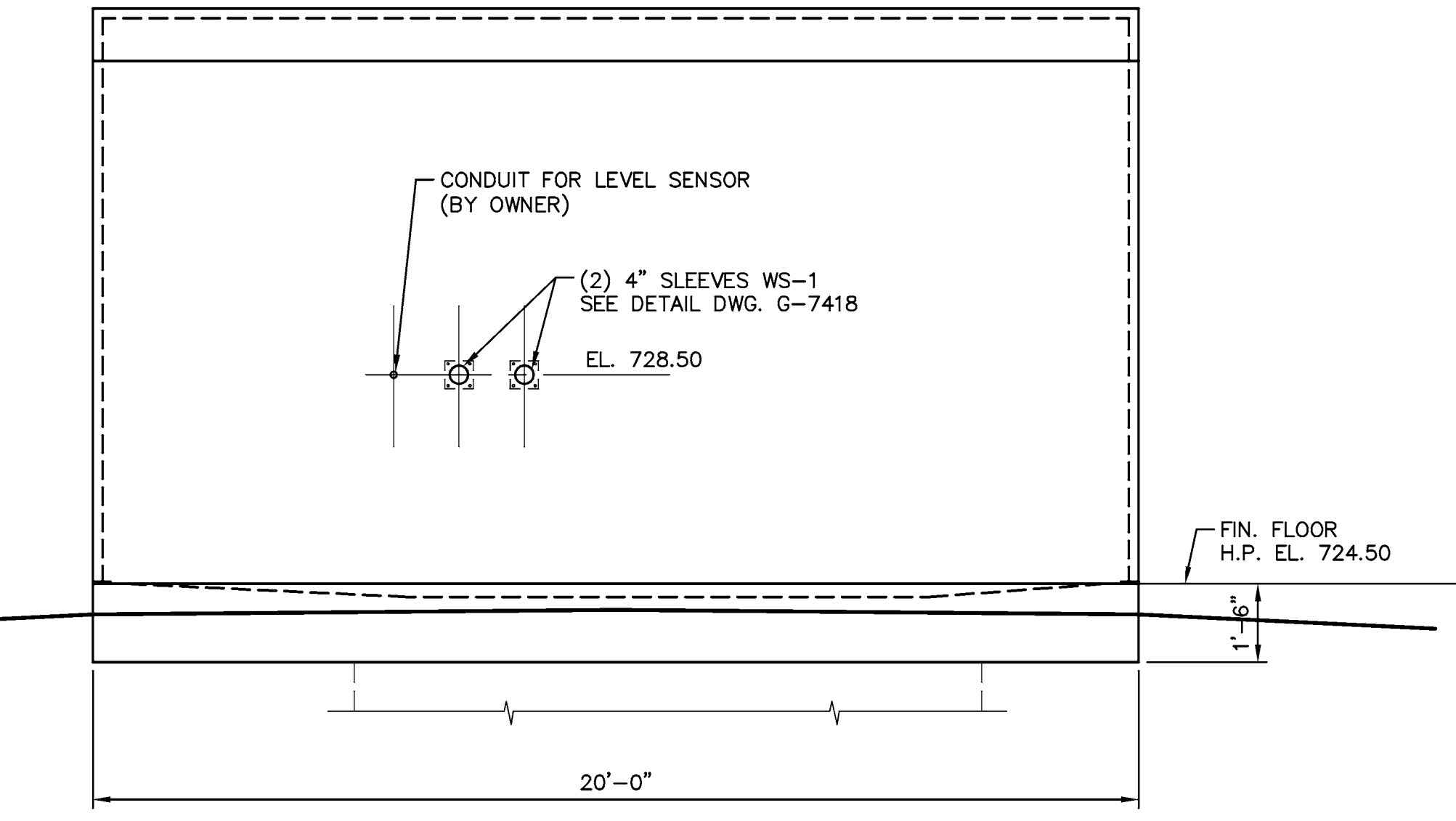
NORTH ELEVATION
3/8" = 1'-0"



SOUTH ELEVATION
3/8" = 1'-0"



EAST ELEVATION
3/8" = 1'-0"



WEST ELEVATION
3/8" = 1'-0"

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

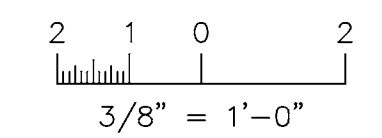
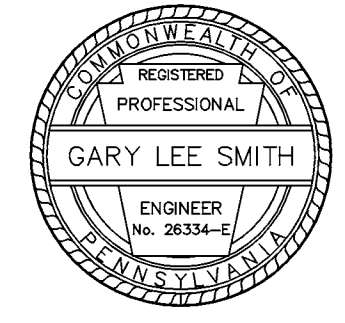
No.	Date	Description	By	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB	-	-

REVISIONS

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

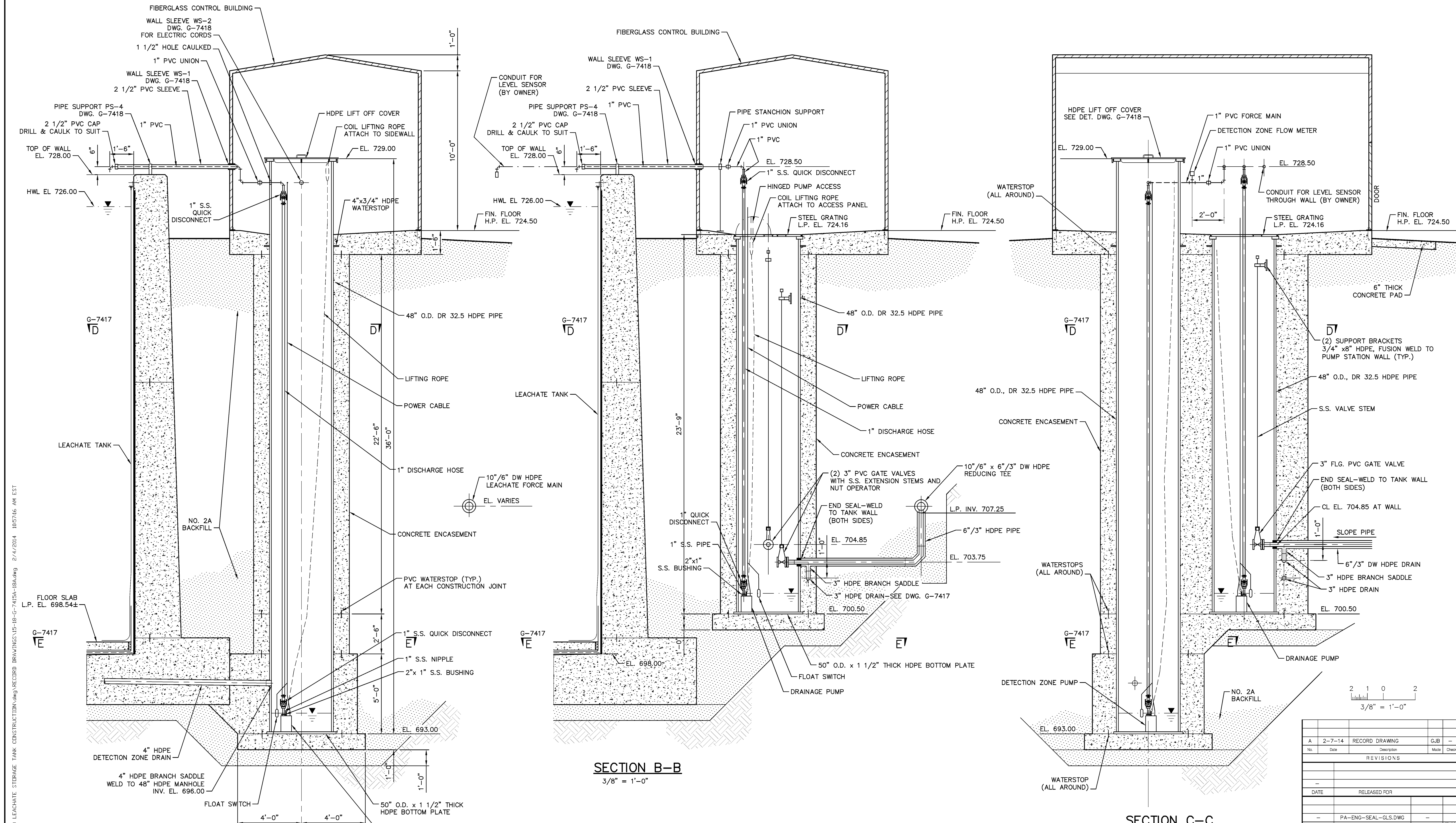
LEACHATE STORAGE TANK CONSTRUCTION



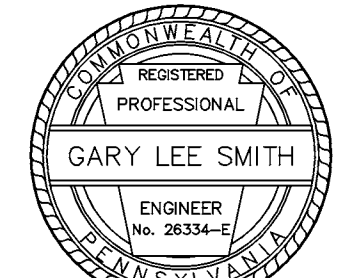
Drawn	Checked	Approved	Date
GJB	GLS	GLS	7/8/11

Project: **G-7415** Drawing Number: **A** Sheet: **15** of **45**

E:\Land 2005 Projects\Lycoming County\20809-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG\RECORD\DRAWINGS\15-18\G-7415A-18A.DWG 2/14/2011 10:48:15 AM

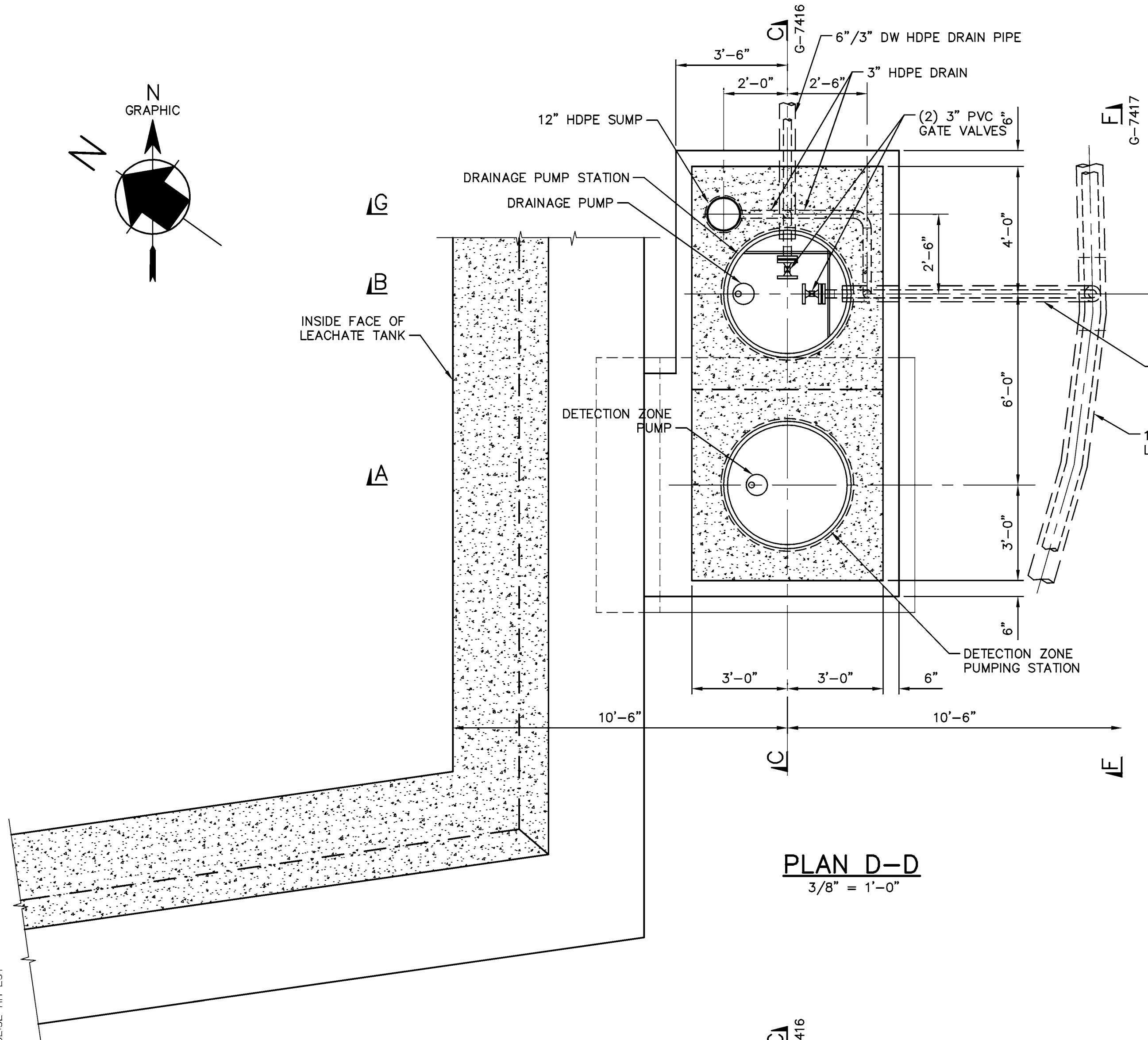
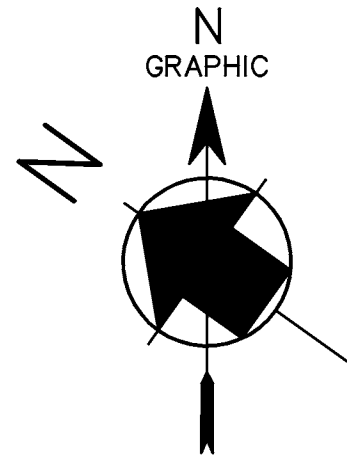


NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

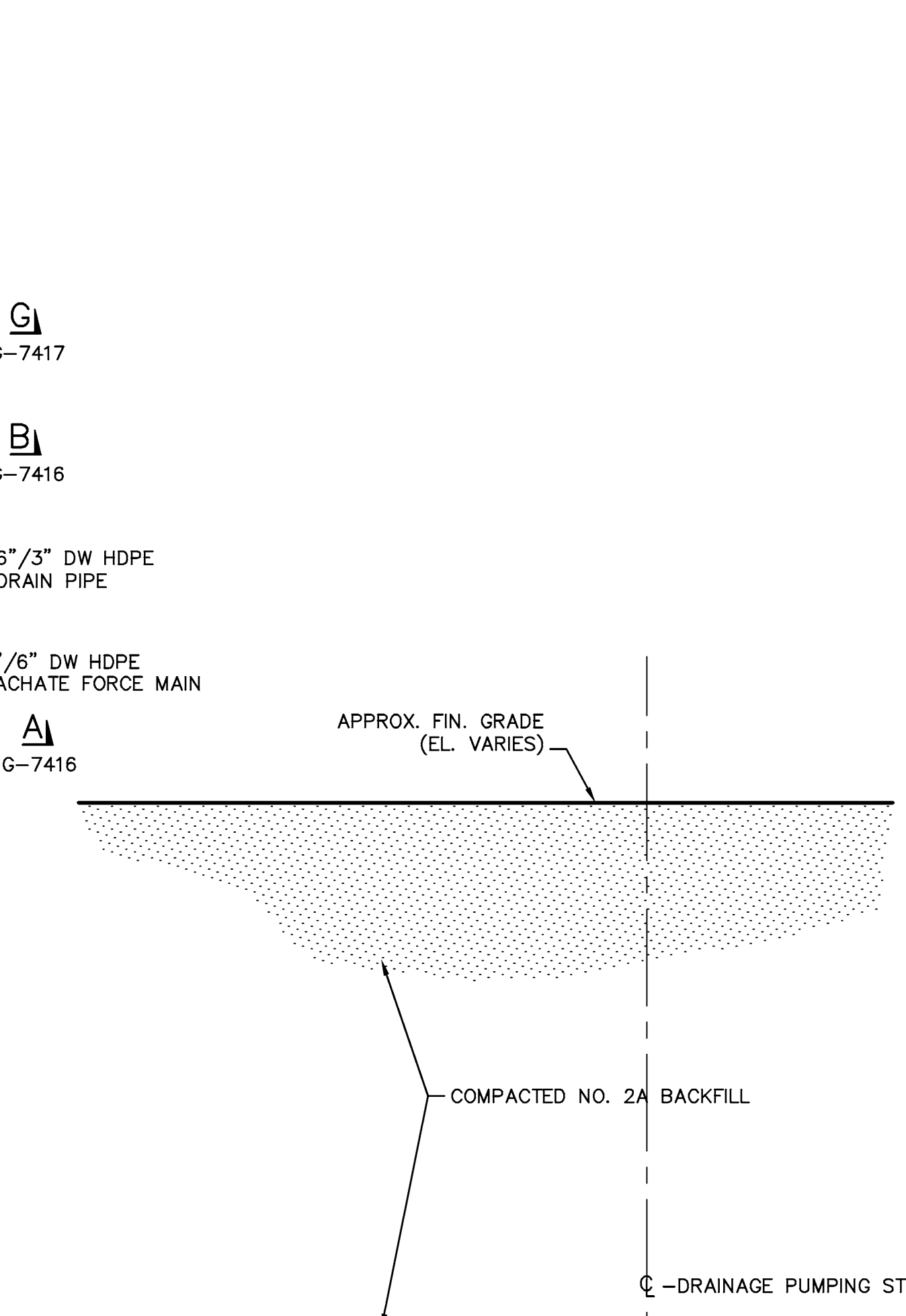


2-7-14	RECORD DRAWING	GJB	-	-
REVISIONS				
DATE RELEASED FOR				
PA-ENG-SEAL-GLS.DWG				
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120 COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870 LEACHATE STORAGE TANK CONSTRUCTION General CONTROL BUILDING SECTIONS-1				
GJB	GLS	GLS	F445-18-G-7415A-18A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00	G - 7416	A	20809-00	16 of 45

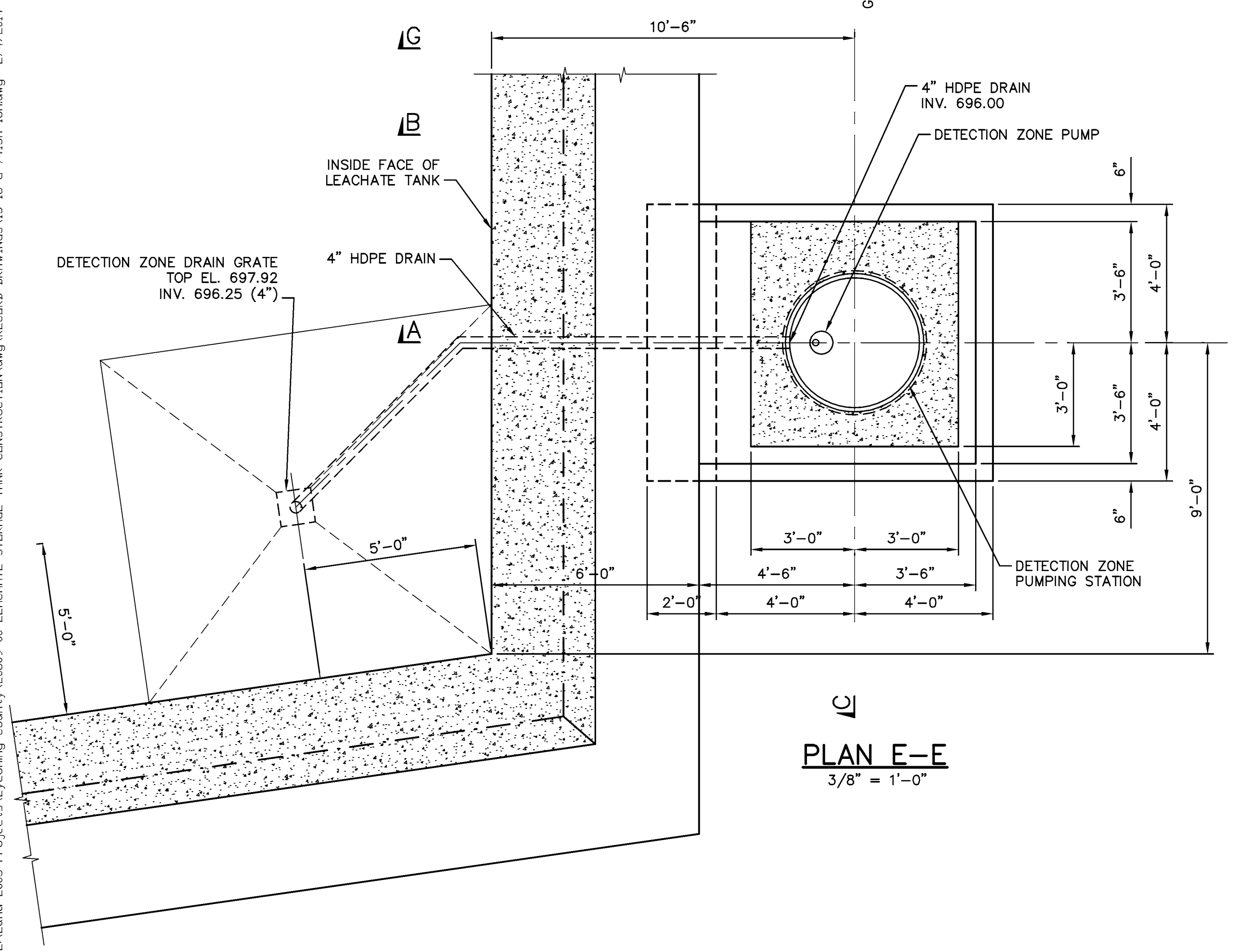
E:\Land 2005 Projects\Lycoming County\120889-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG\RECORD DRAWINGS\15-18-G-7415A-18A.dwg 2/4/2014 10:57:06 AM EST



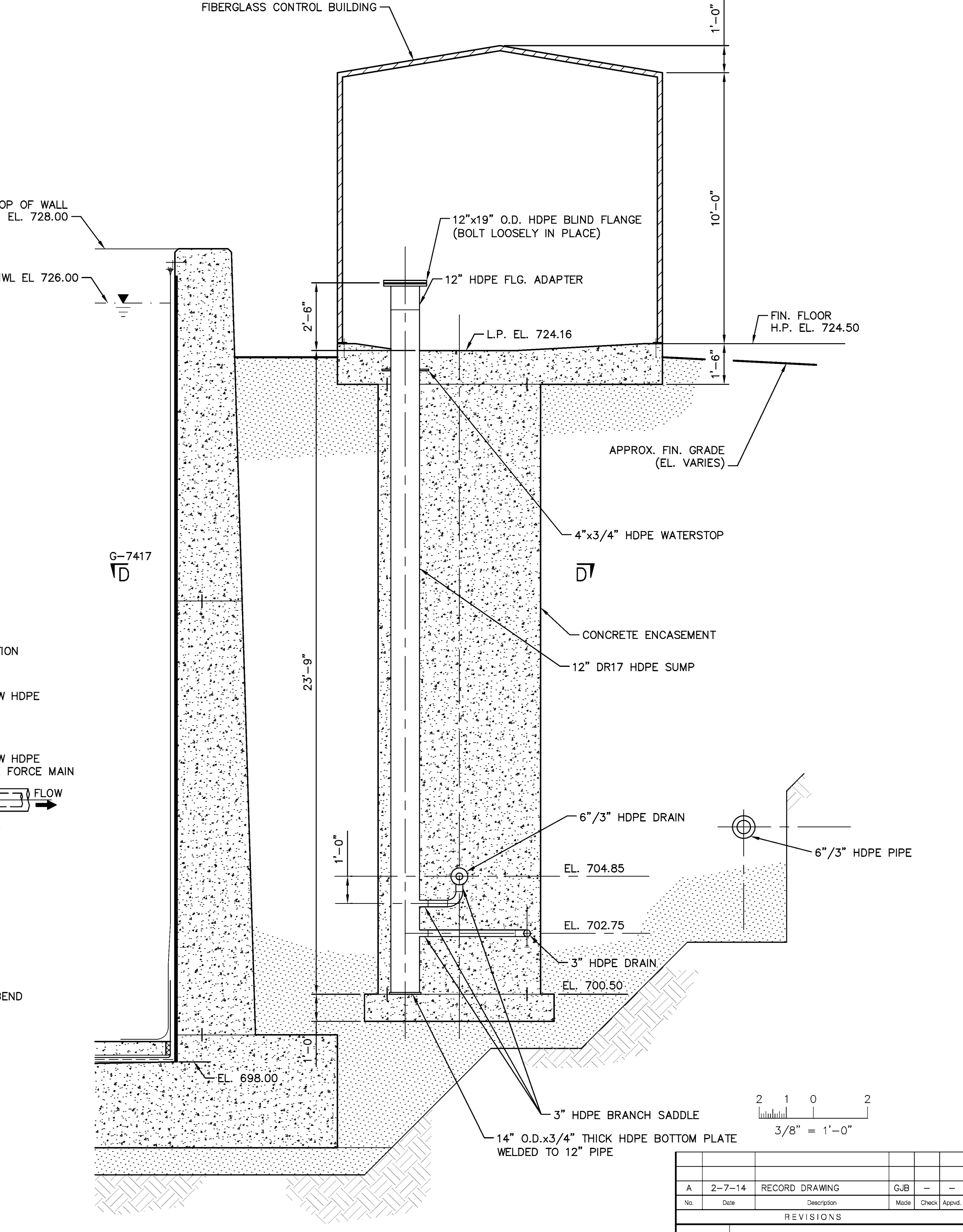
PLAN D-D
3/8" = 1'-0"



SECTION F-F
3/8" = 1'-0"



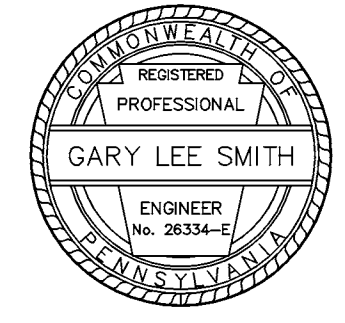
PLAN E-E
3/8" = 1'-0"



SECTION G-G
3/8" = 1'-0"

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	REVISIONS	Discipline	Maker	Check	Appr.
A	2-7-14	RECORD DRAWING		GJB		

DATE	RELEASED FOR		
XREF Name	Attached XREF File Name	Insertion Point	Insertion Point

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

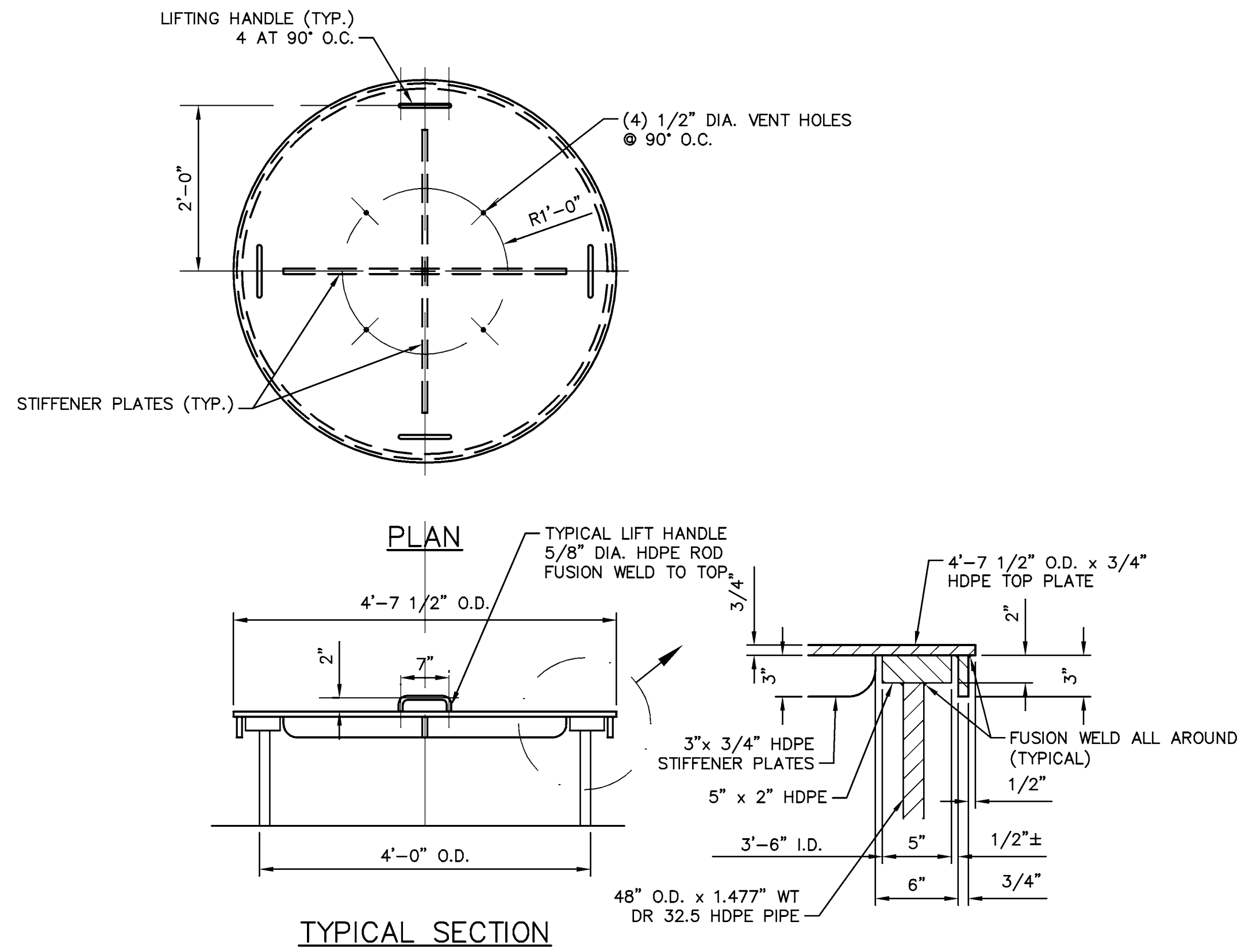
LEACHATE STORAGE TANK CONSTRUCTION

General
CONTROL BUILDING
SECTIONS-2

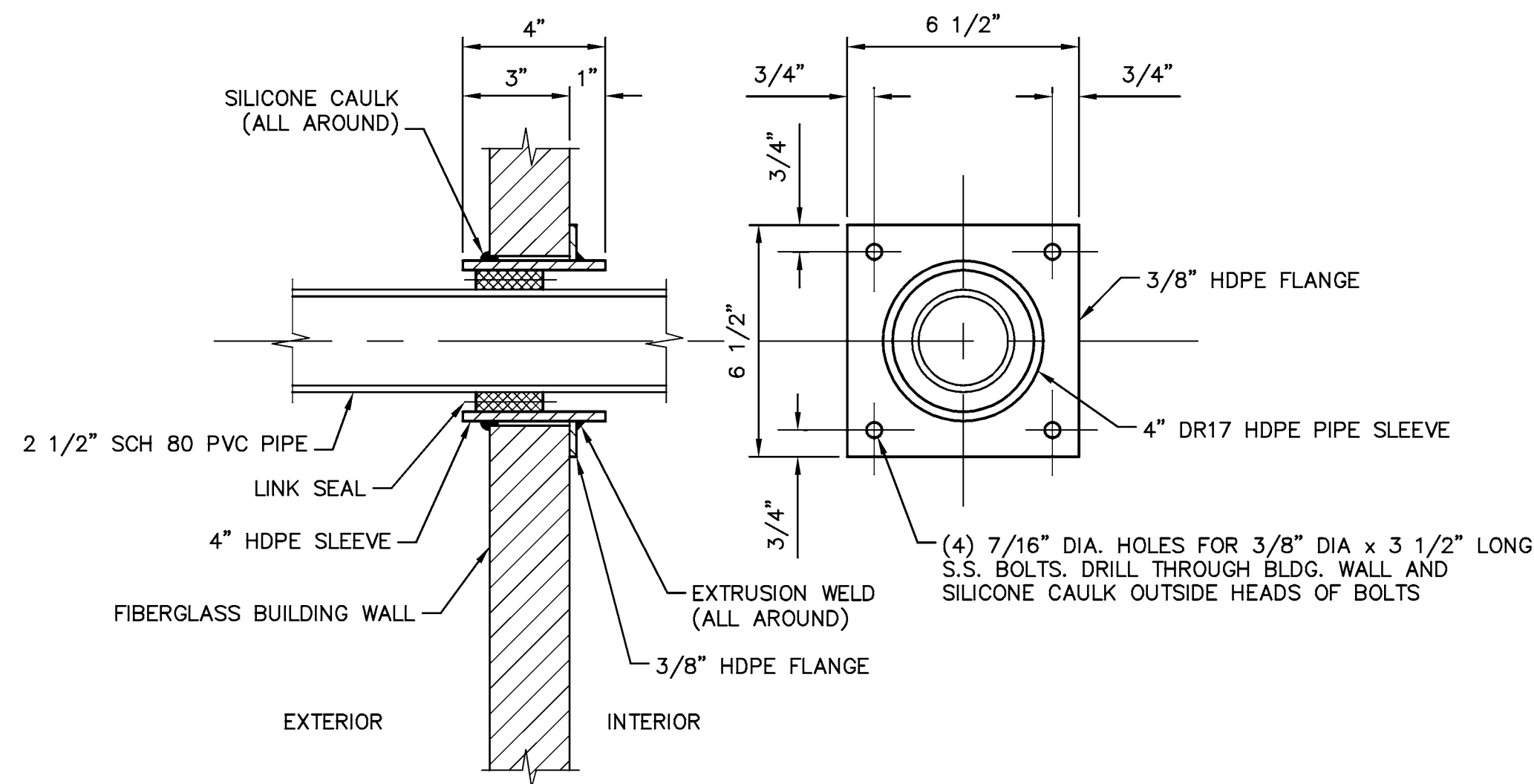
GJB	GLS	GLS	F445-18-G-7415A-18A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809-00	

Size - Project: Drawing Number: **G - 7417** Rev: **A** 17 of 45

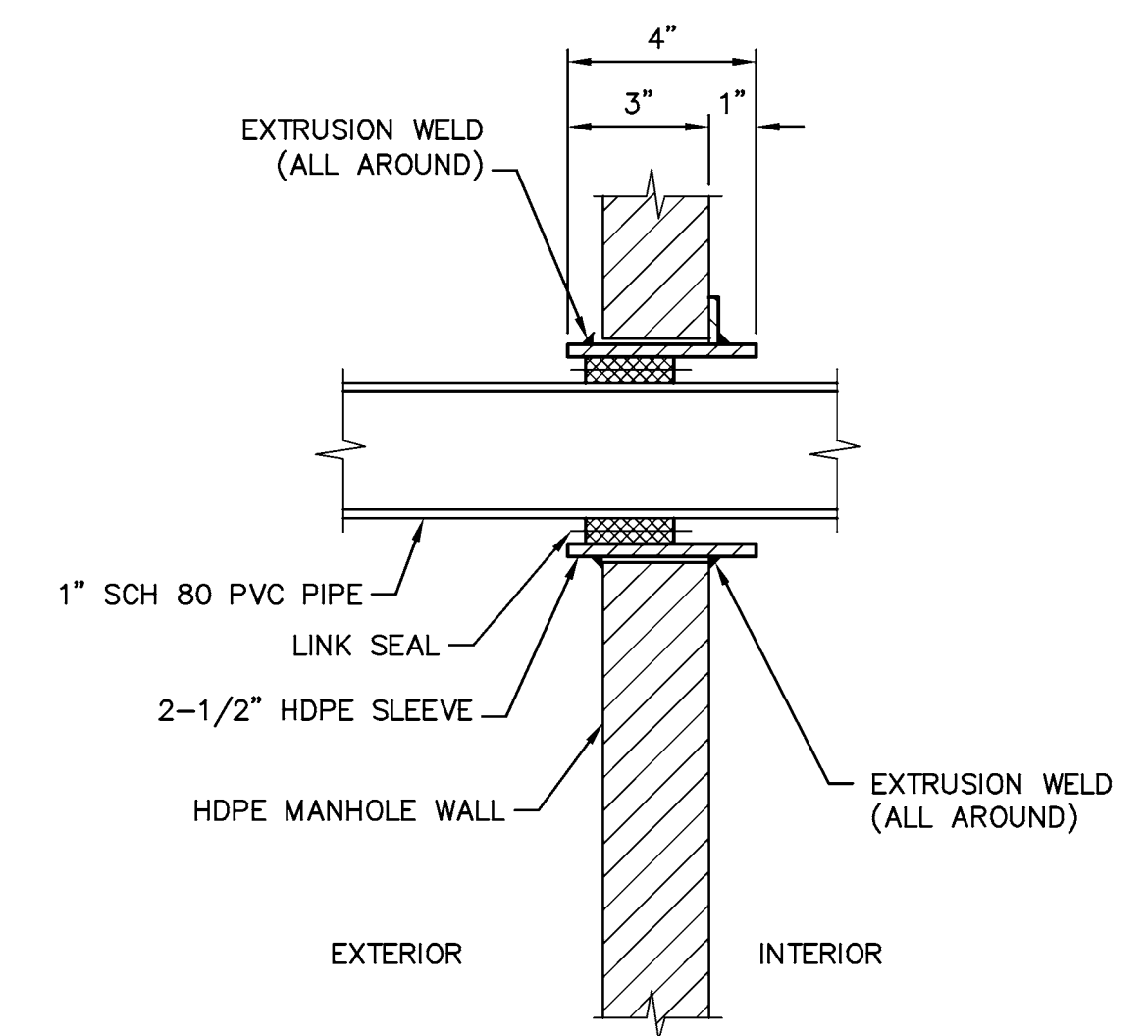
E:\Land 2005 Projects\Lycoming County\20809-00 LEACHATE STORAGE TANK CONSTRUCTION\DWG\RECORD DRAWINGS\15-18-G-7415A-18A.dwg 2/4/2014 10:02:32 AM EST



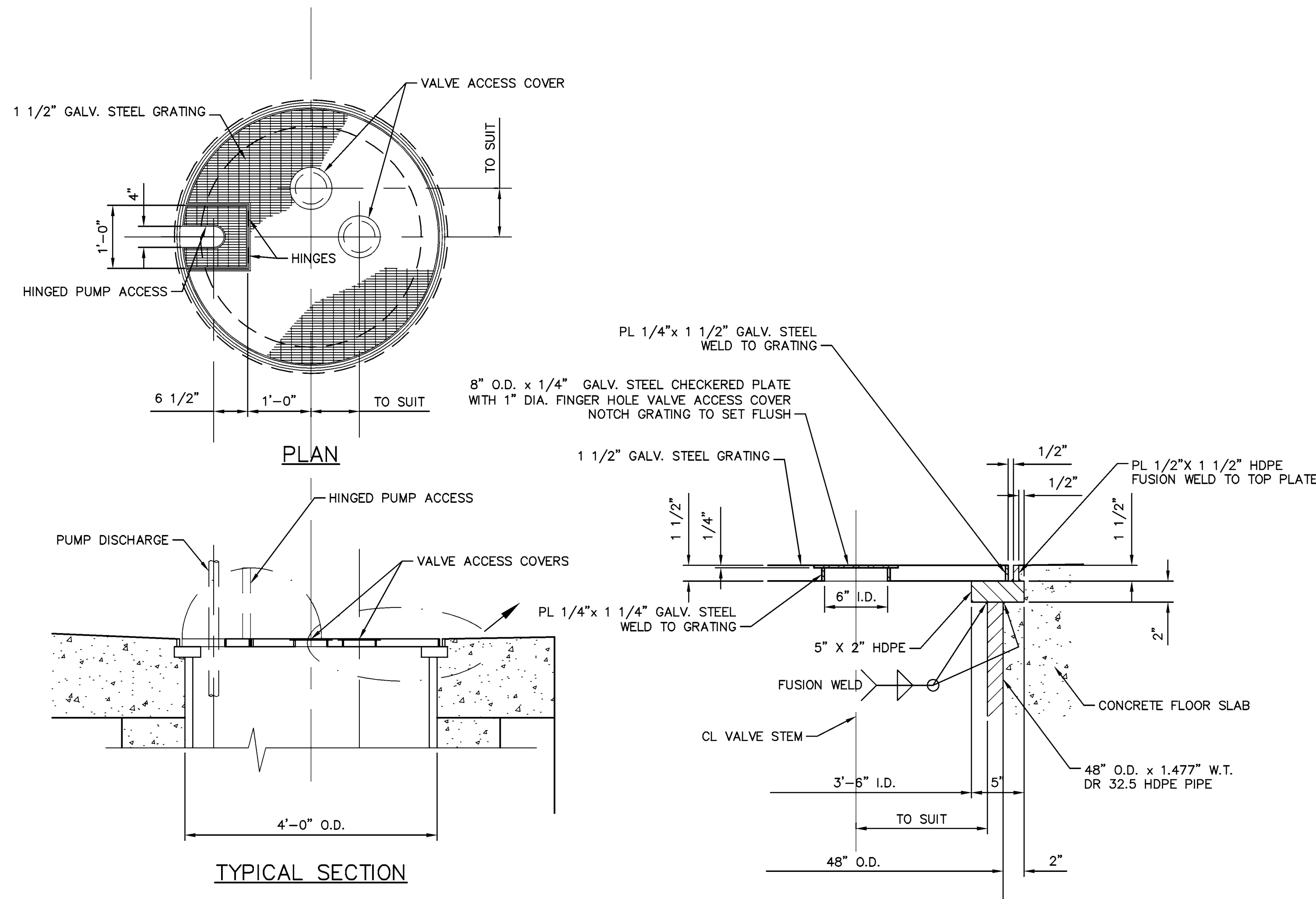
DETAIL - LIFT OFF COVER FOR DETECTION ZONE PUMP STATION
3/4" = 1'-0"



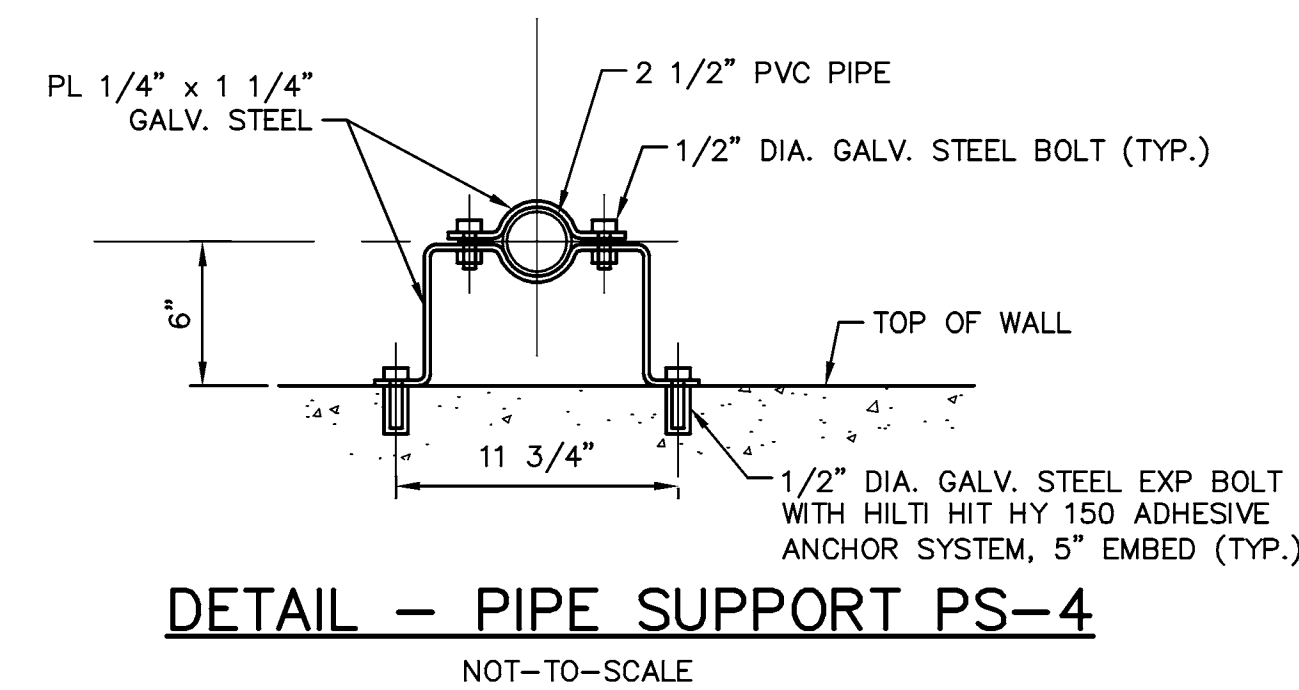
DETAIL - WALL SLEEVE WS-1
NOT-TO-SCALE



DETAIL - WALL SLEEVE WS-2
NOT-TO-SCALE



DETAIL - DRAINAGE PUMP STATION COVER GRATING
3/4" = 1'-0"



DETAIL - PIPE SUPPORT PS-4
NOT-TO-SCALE

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



A	2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Made	Check	App'd.
REVISIONS					
DATE RELEASED FOR					
XREF Name Attached XREF File Name Insertion Point					

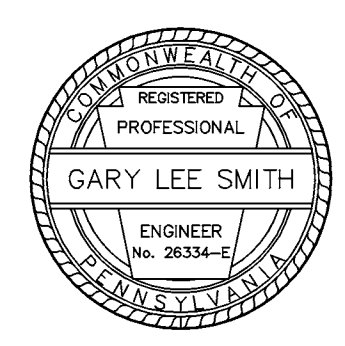
Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

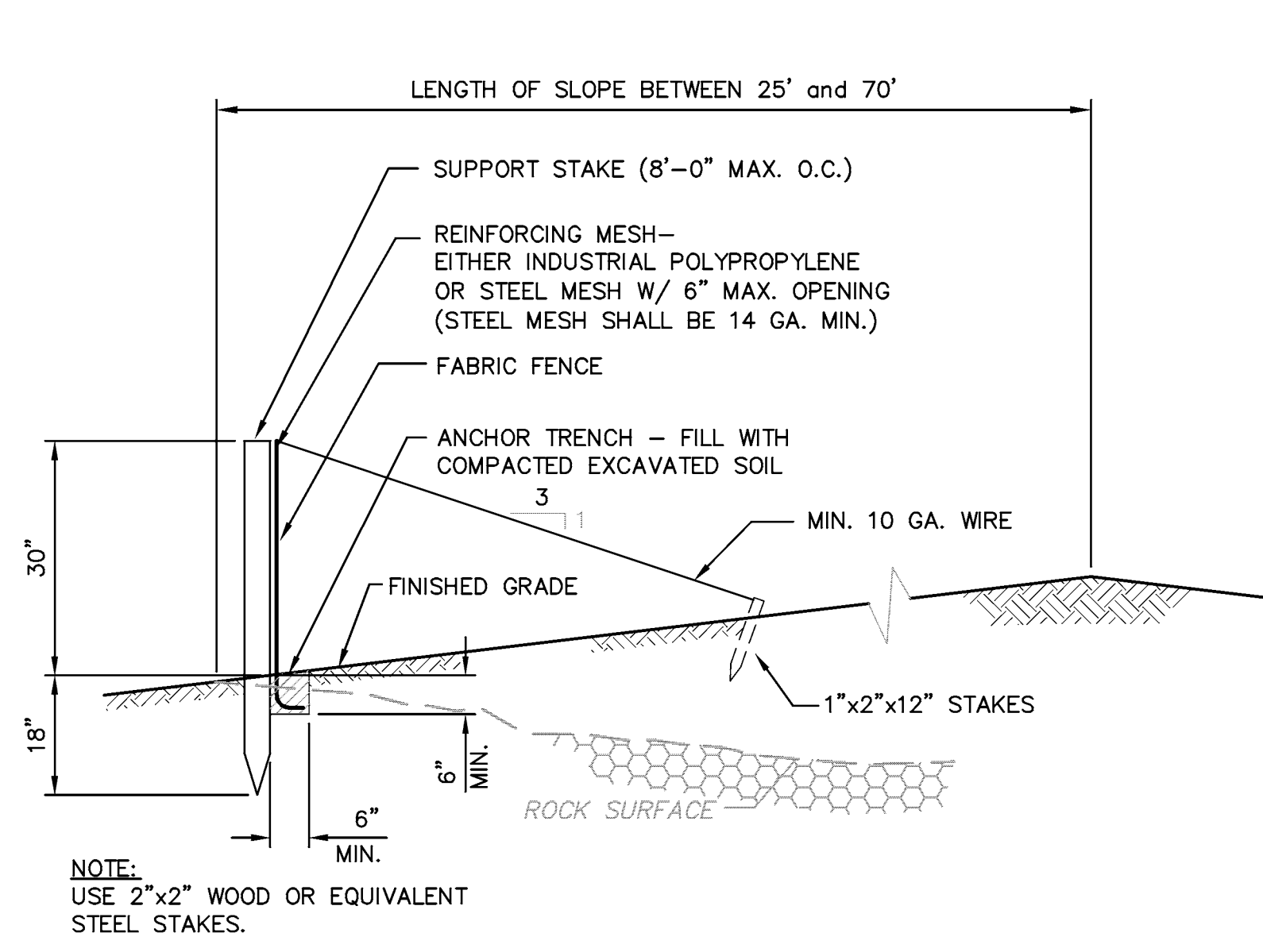
LEACHATE STORAGE TANK CONSTRUCTION

General
CONTROL BUILDING
DETAILS

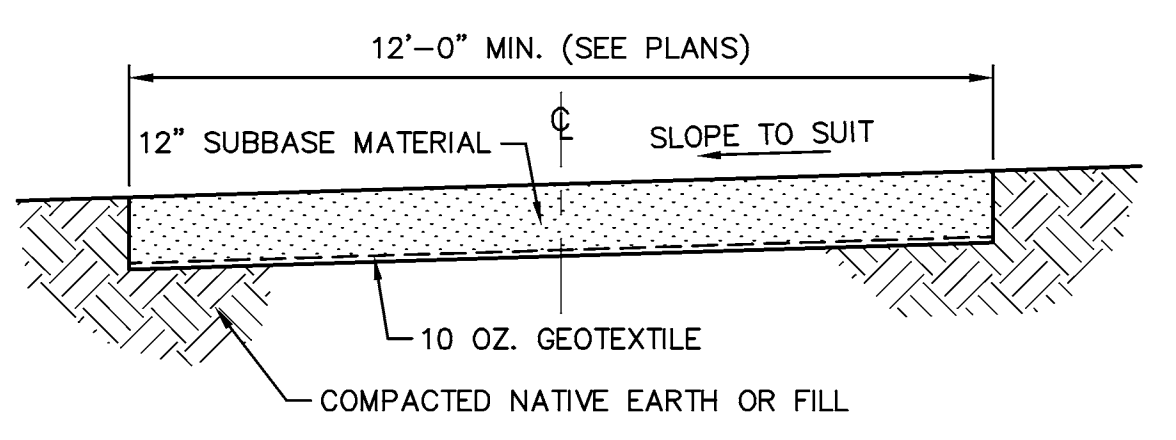
GJB	GLS	GLS	F445-18-G-7415A-18A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809-00	
Size - Project	Drawing Number	Rev.	Sheet	
	G - 7418	A	18 of 45	



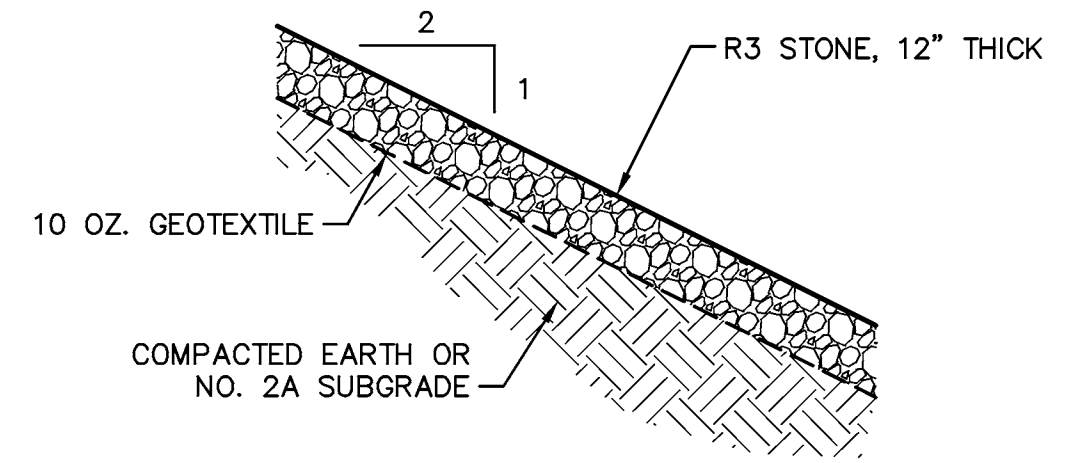
E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWING\15-18-G-7415A-18A.dwg 2/4/2014 10:03:02 AM EST



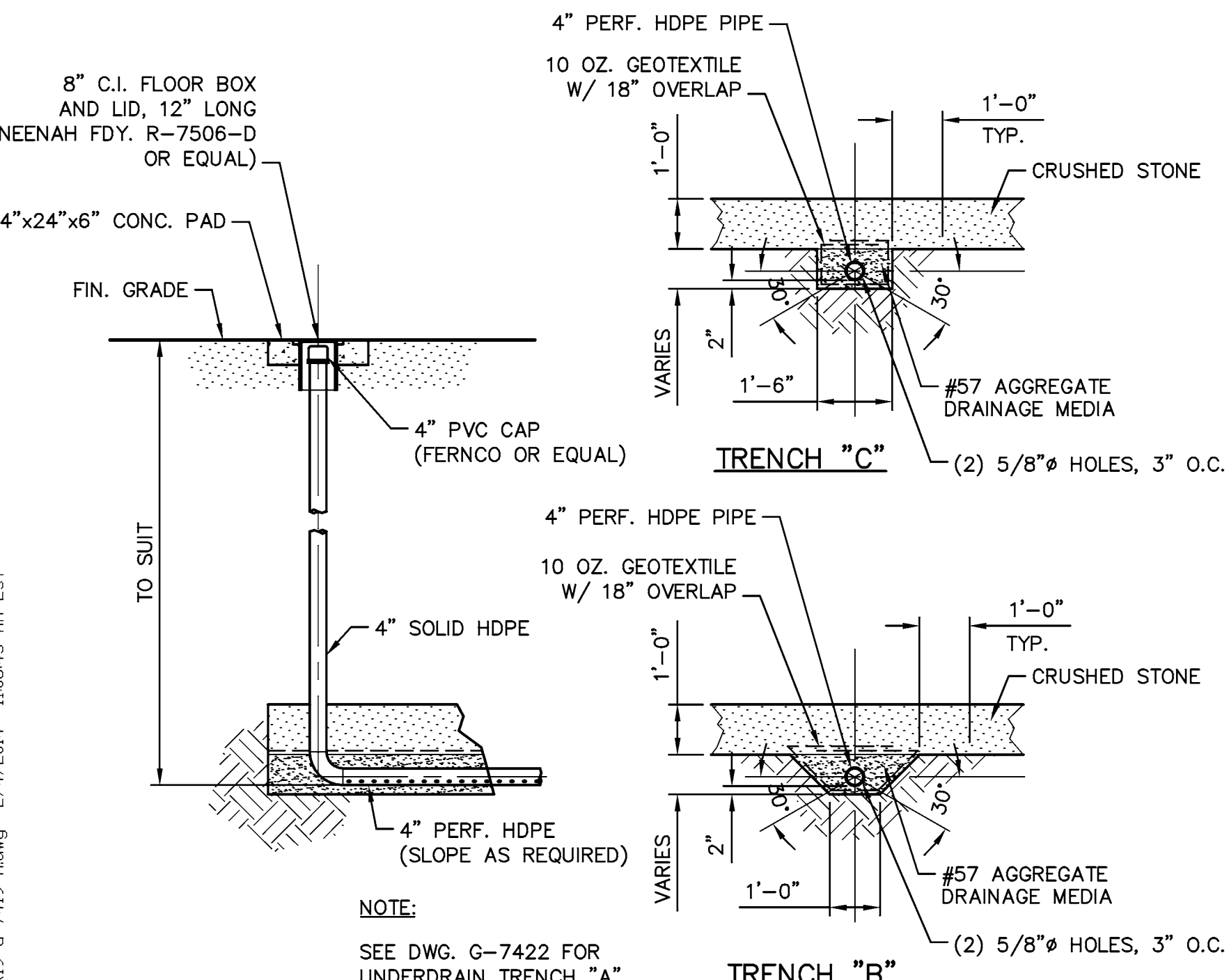
SILT FENCE DETAIL—STANDARD #20
REINFORCED FILTER FABRIC FENCE (30" HIGH)
 NOT-TO-SCALE



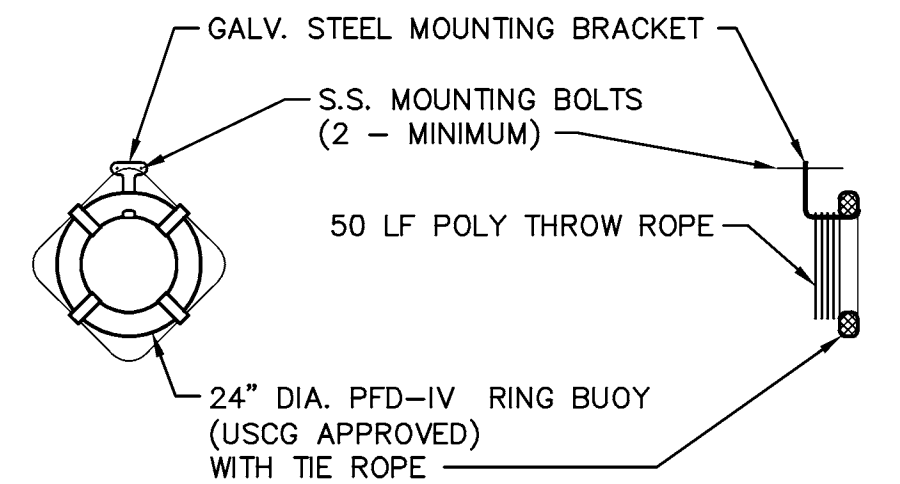
DETAIL — TYPICAL WELL ACCESS ROAD
 NOT-TO-SCALE



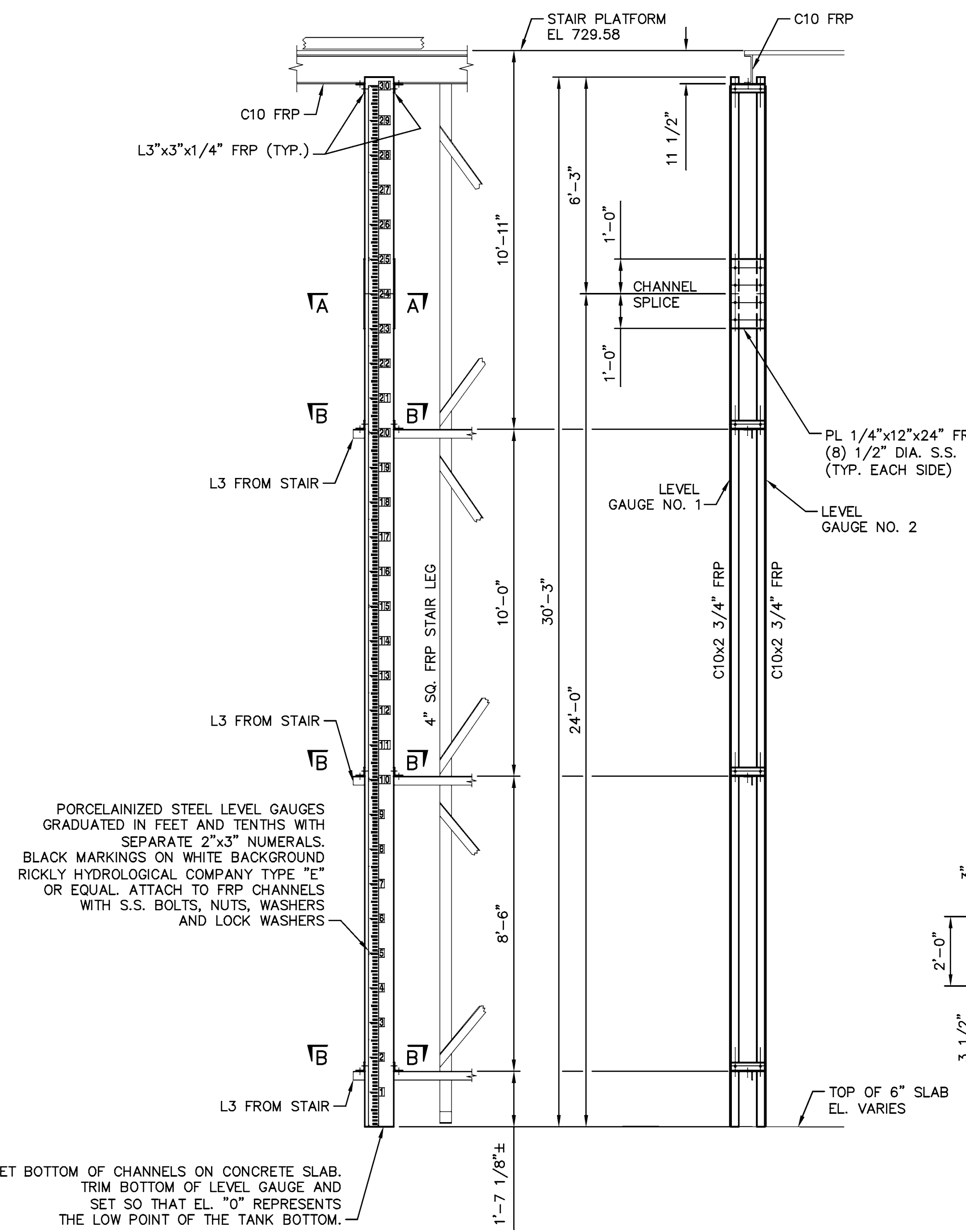
DETAIL — SLOPE PROTECTION
 NOT-TO-SCALE



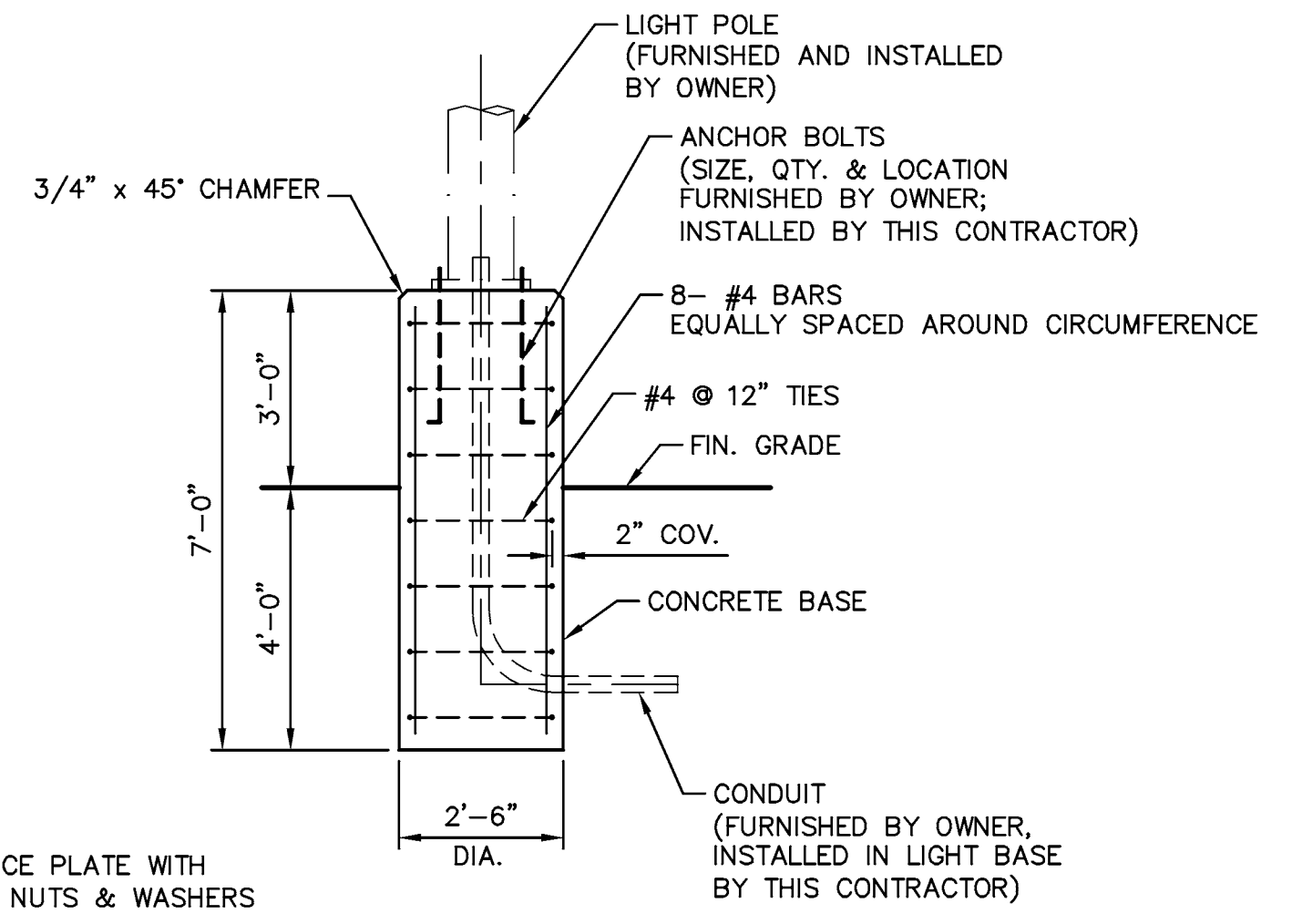
DETAIL — TYPICAL UNDERDRAIN
 NOT-TO-SCALE



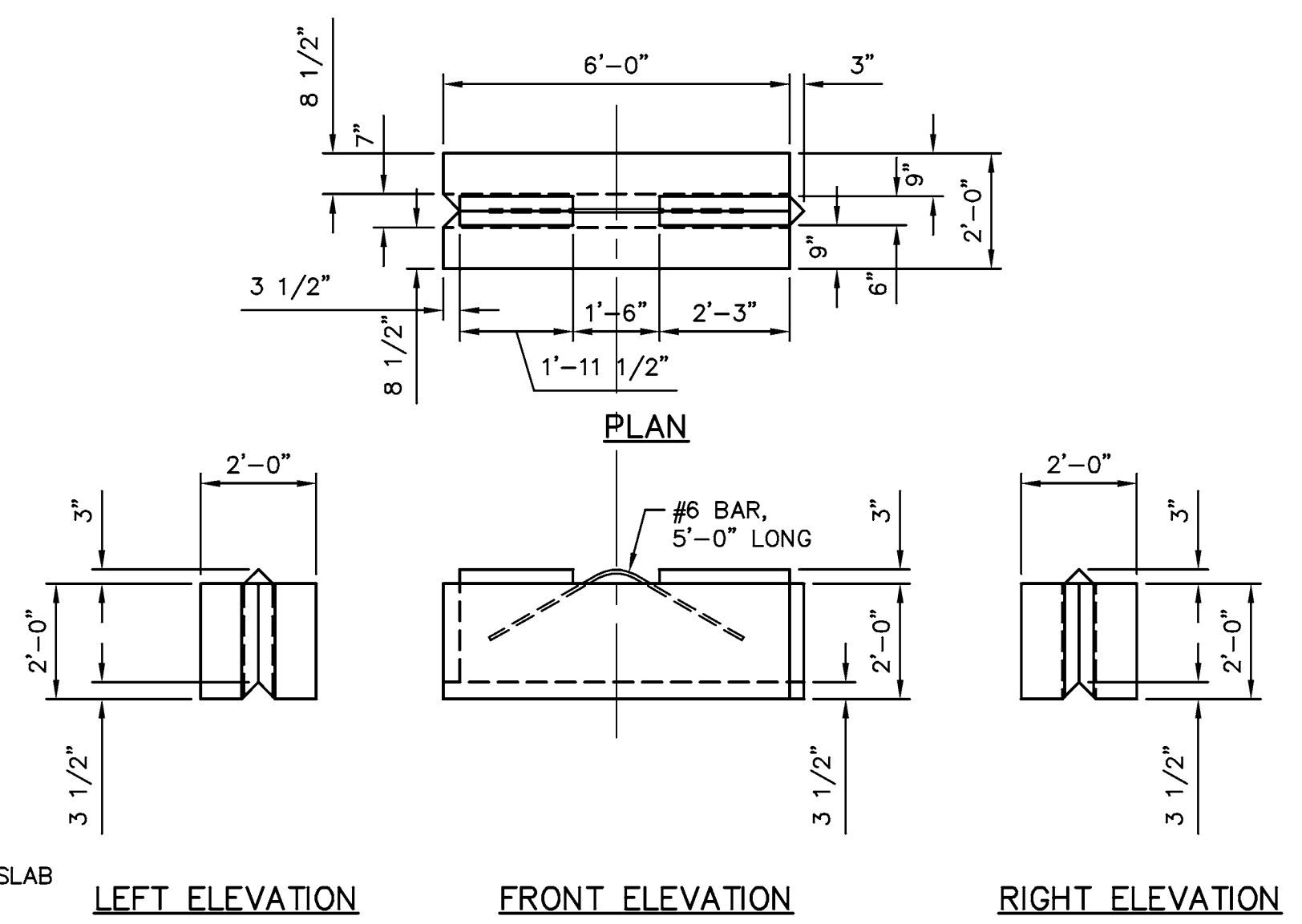
DETAIL — TYPICAL RING BUOY
 NOT-TO-SCALE



DETAIL — TYPICAL LEVEL GAUGE
 NOT-TO-SCALE

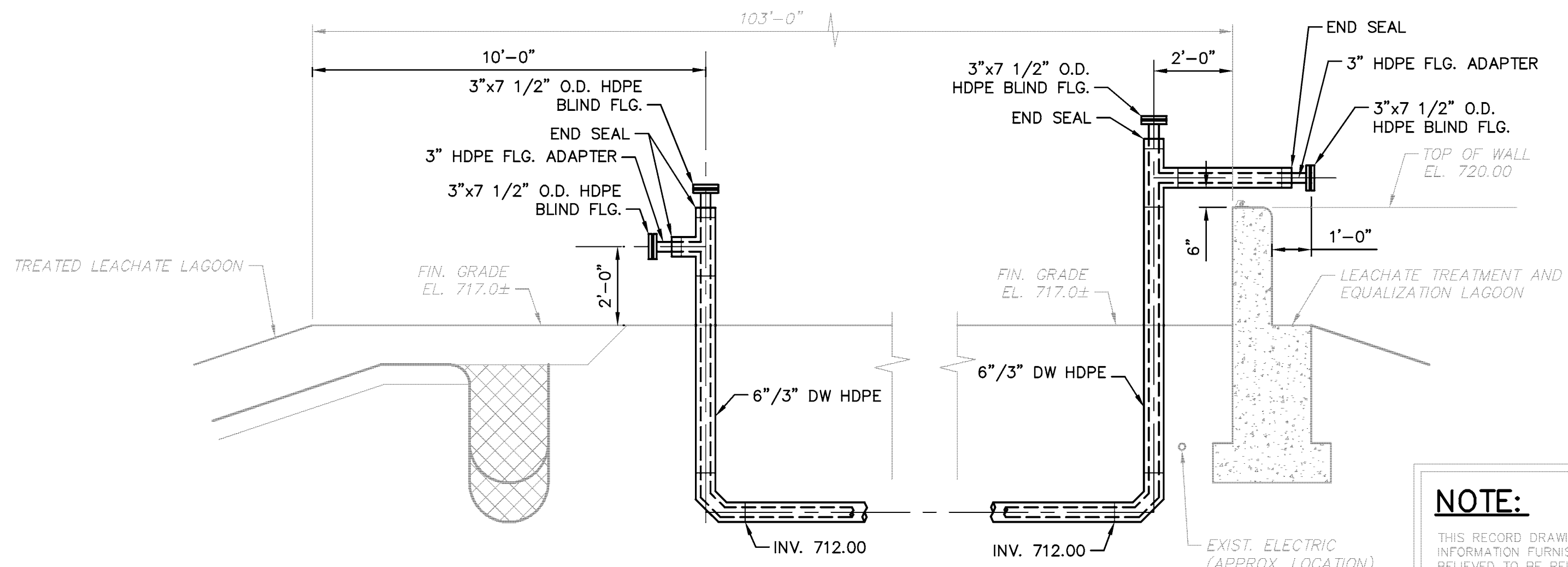


DETAIL — LIGHT BASE
 NOT-TO-SCALE



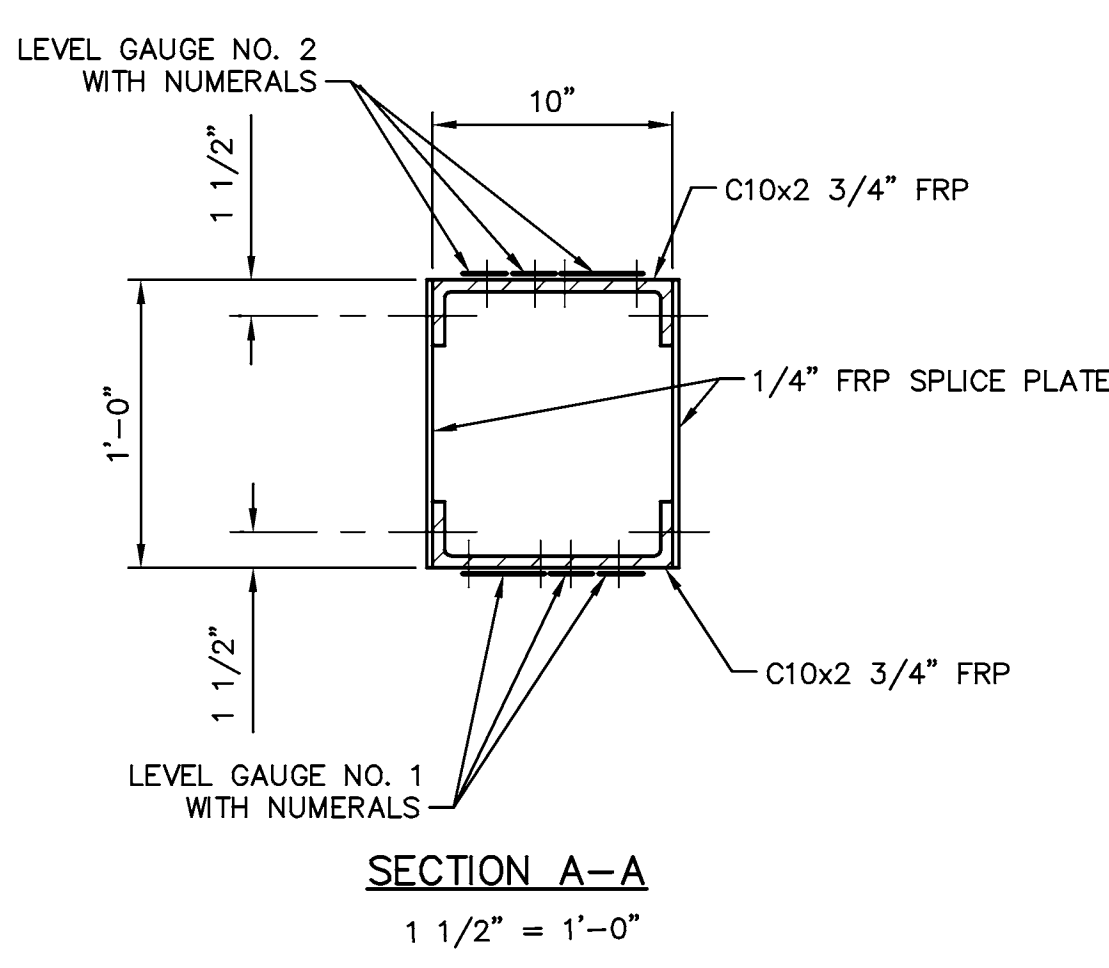
DETAIL — TYPICAL CONCRETE TEST BLOCK
 NOT-TO-SCALE

- NOTES:**
- CAST 10 TEST BLOCKS FROM A SINGLE CONCRETE DELIVERY TRUCK.
 - CAST ADDITIONAL LOTS OF 10 TEST BLOCKS UNTIL 28 DAY CONCRETE STRENGTH IS DEMONSTRATED.

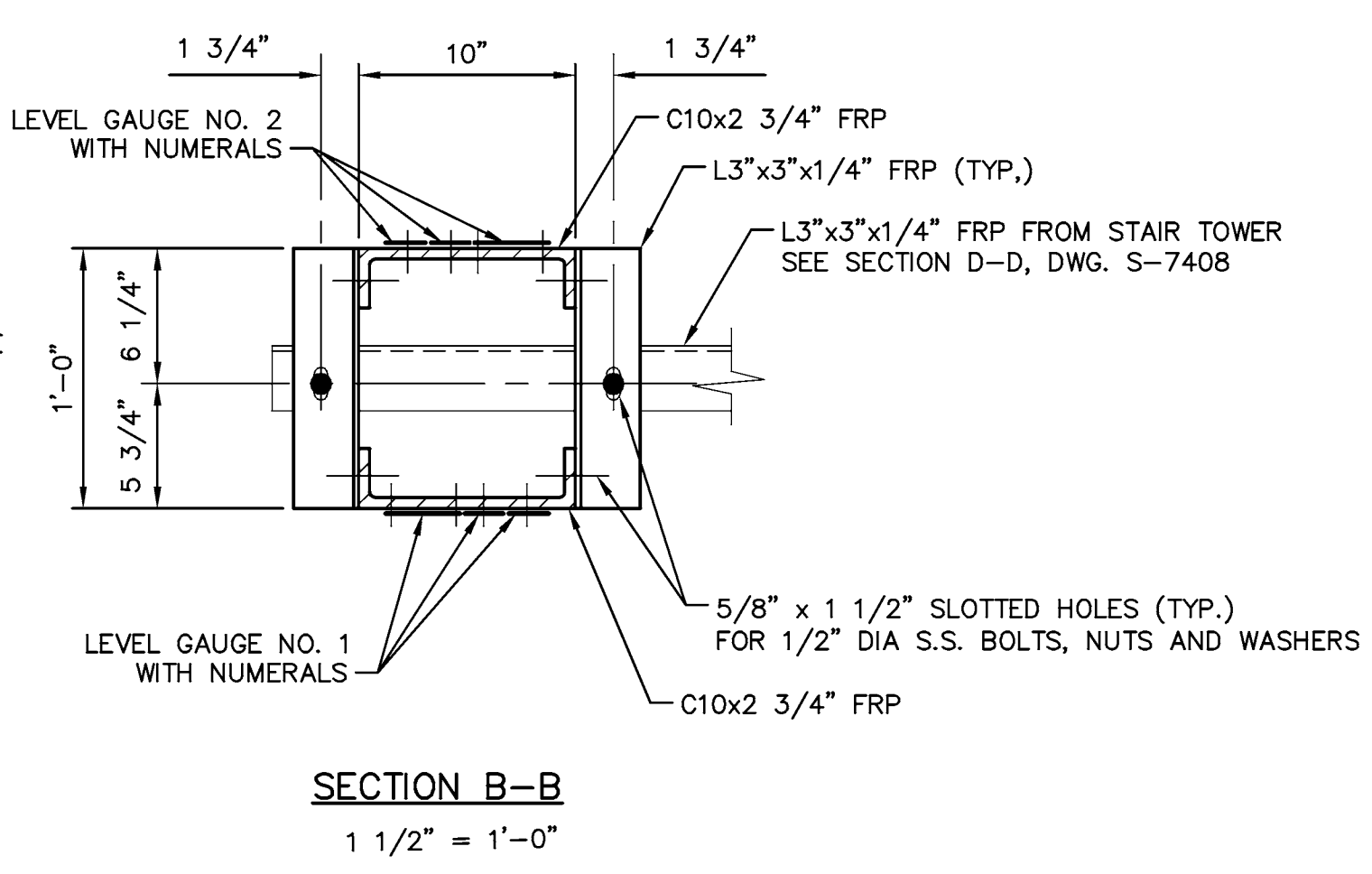


DETAIL — LEACHATE TRANSFER PIPE
 NOT-TO-SCALE

NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

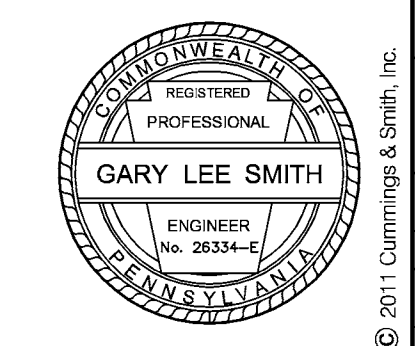
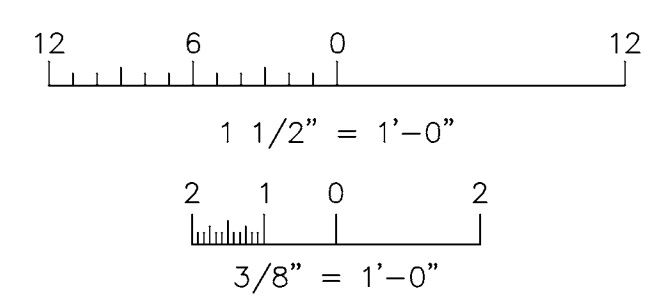


SECTION A-A
 1 1/2" = 1'-0"



SECTION B-B
 1 1/2" = 1'-0"

DETAIL — TYPICAL LEVEL GAUGE
 NOT-TO-SCALE



No.	Date	Description	Made	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB		

DATE	RELEASED FOR

FILE	DATE	BY	REVISION
PA-ENG-SEAL-GLS.DWG			

MISCELLANEOUS SITE DETAILS			
GJB	GLS	GLS	File: 19-G-7419-A.DWG
Drawn	Checked	Approved	Plot Scale: 1"=1'
D-20809.00			20809-00
Size: Project	Drawing Number	Rev.	Sheet
	G-7419	A	19 of 45

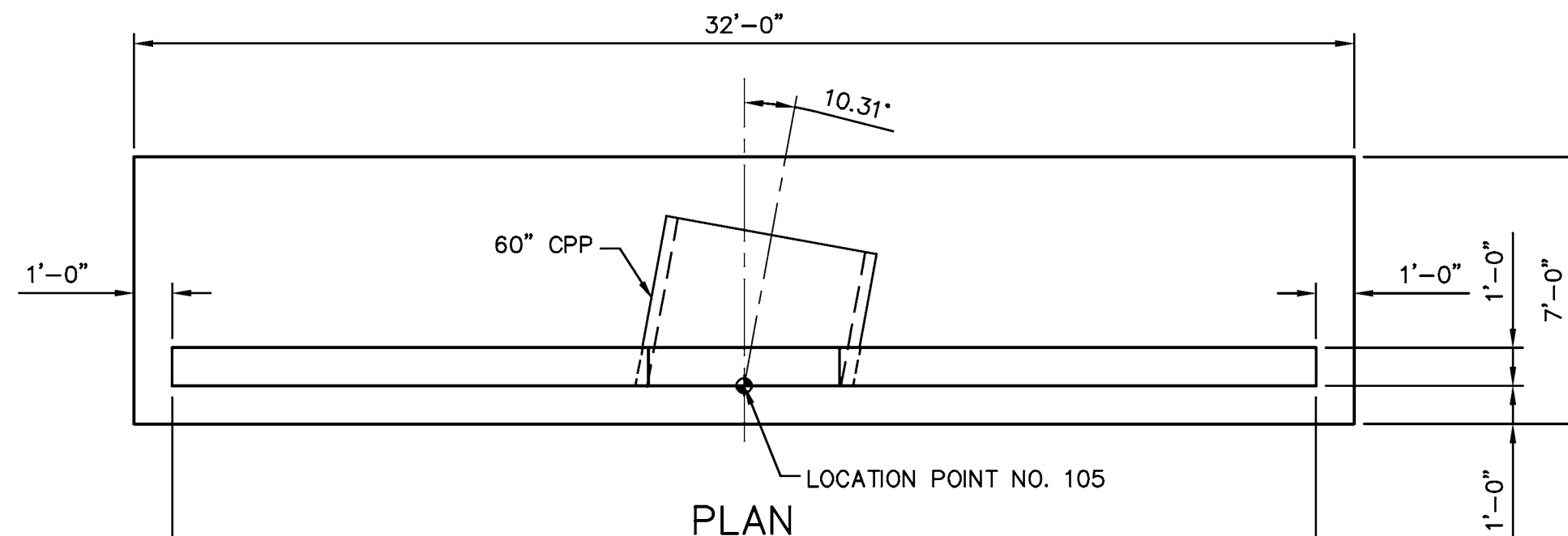
Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

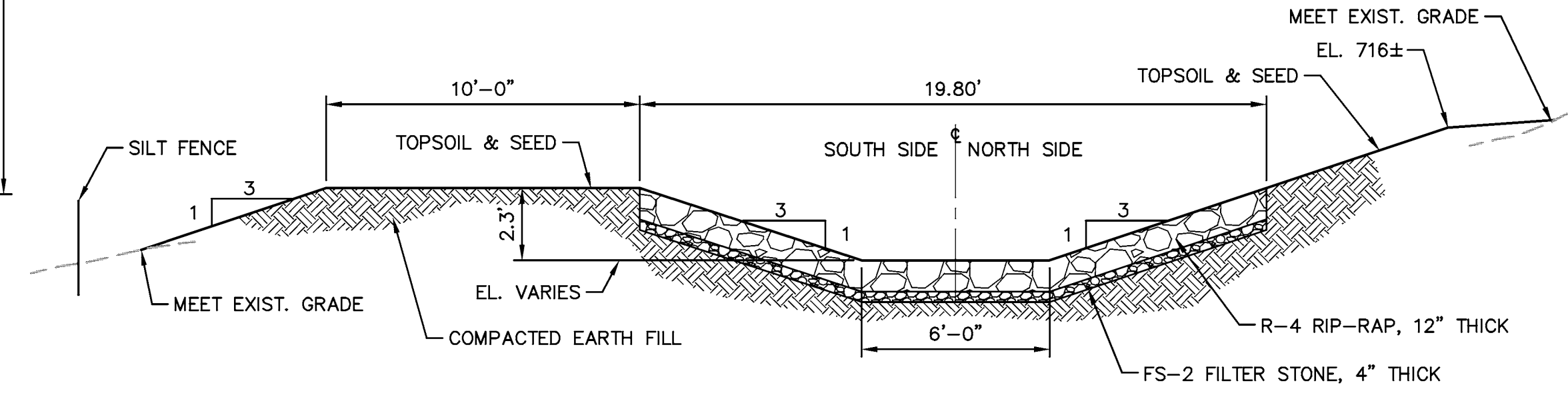
LEACHATE STORAGE TANK CONSTRUCTION
 General

E:\Land 2005 Projects\Lycoming County\120889-00 LEACHATE STORAGE TANK CONSTRUCTION.dwg RECDRAW BRW\JLS\19-G-7419-A.dwg 2/4/2014 11:06:43 AM EST

E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWINGS\20-22-G-7420A-22A.dwg 2/4/2014 11:09:12 AM EST

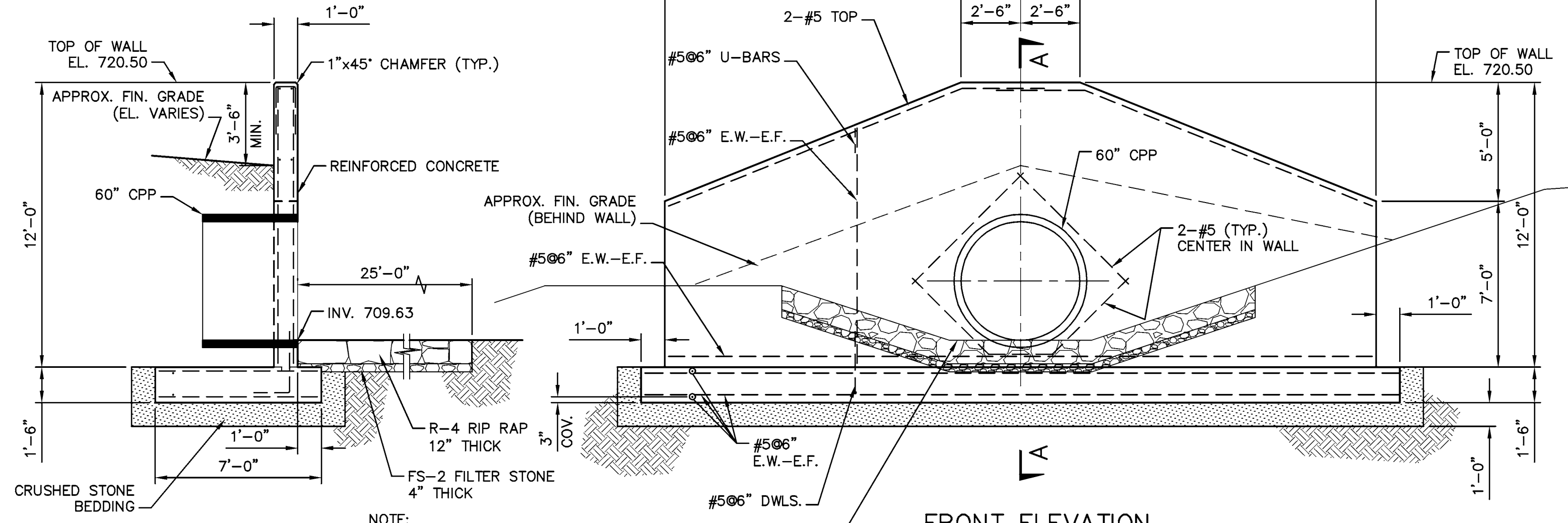


PLAN



DETAIL - DITCH A08-8

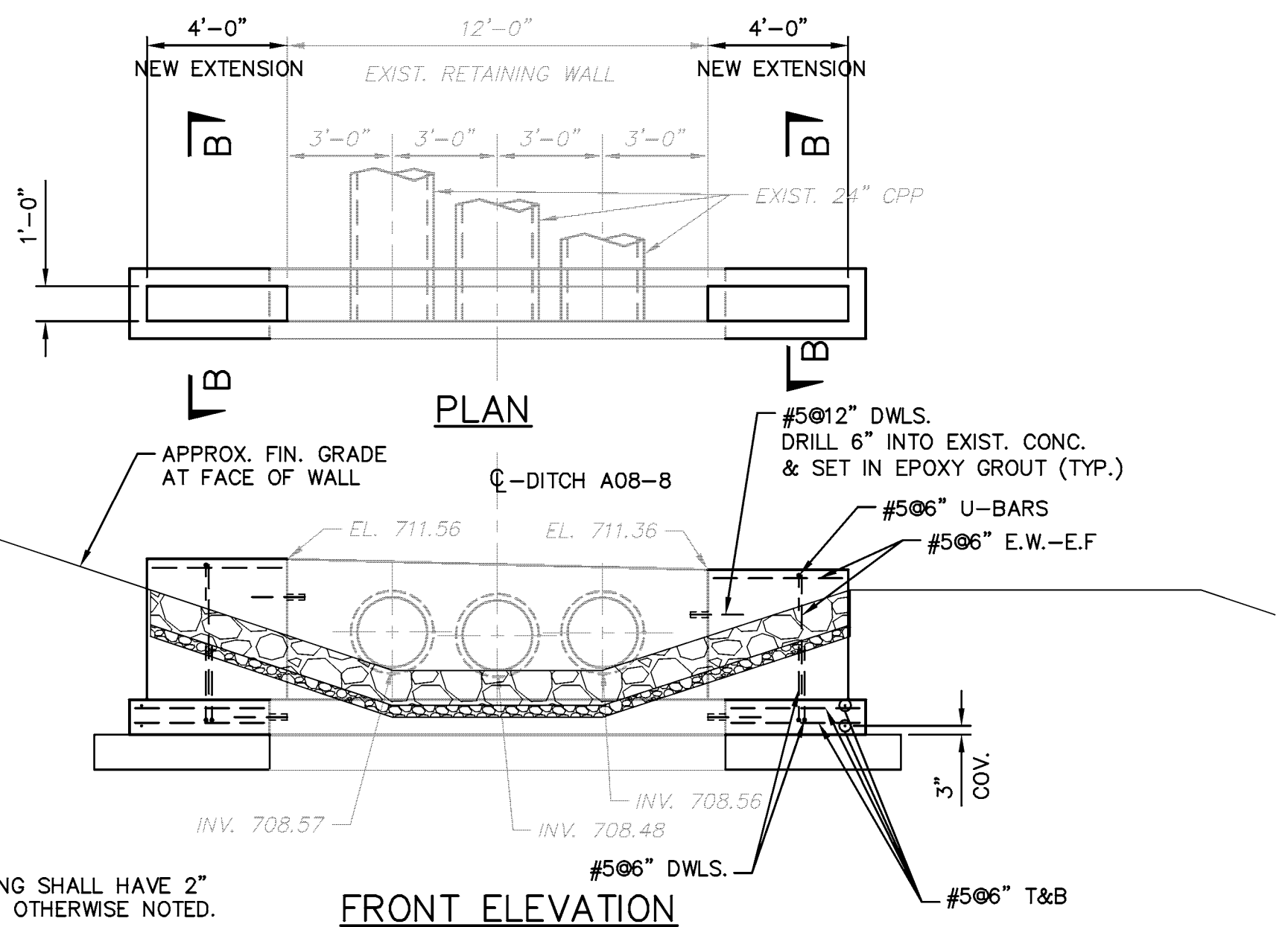
NOT TO SCALE



SECTION A-A

DETAIL - ENDWALL A08-9

1/4" = 1'-0"

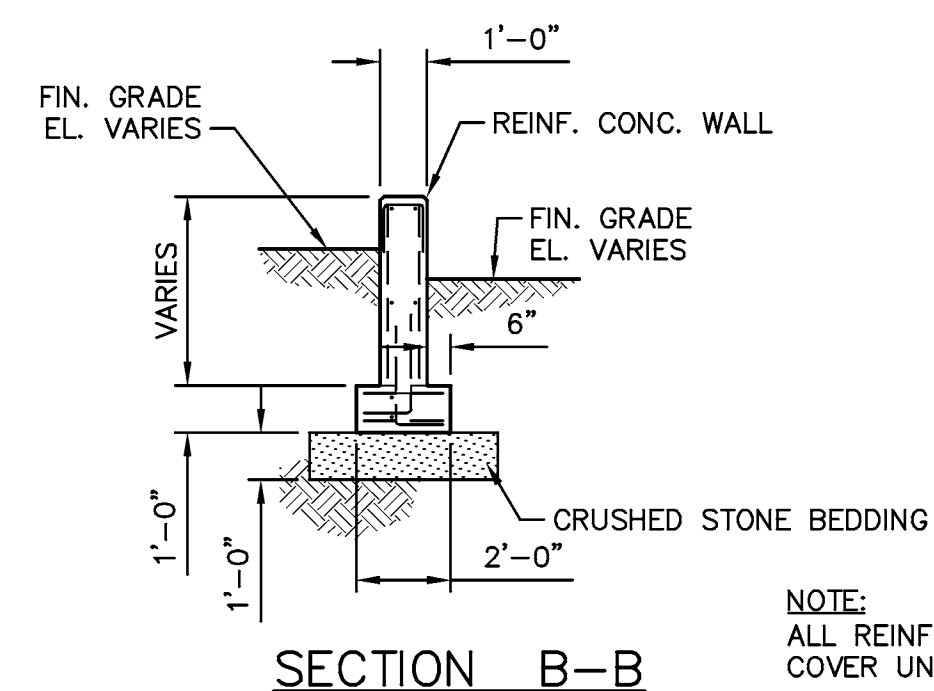


PLAN

FRONT ELEVATION

DETAIL - ENDWALL A08-7

1/4" = 1'-0"

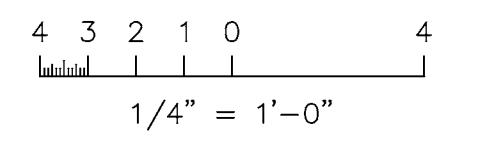


SECTION B-B

NOTE: ALL REINFORCING SHALL HAVE 2" COVER UNLESS OTHERWISE NOTED.

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Drawn	Checked	Appr.
A	2-7-14	RECORD DRAWING	GJB		
REVISIONS					
DATE RELEASED FOR					
XREF Name Attached XREF File Name Insertion Point					

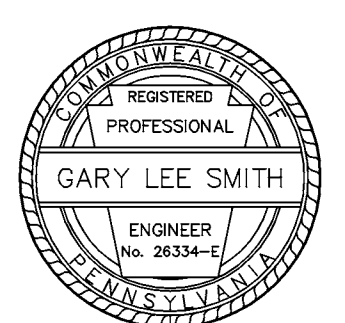
Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merion, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

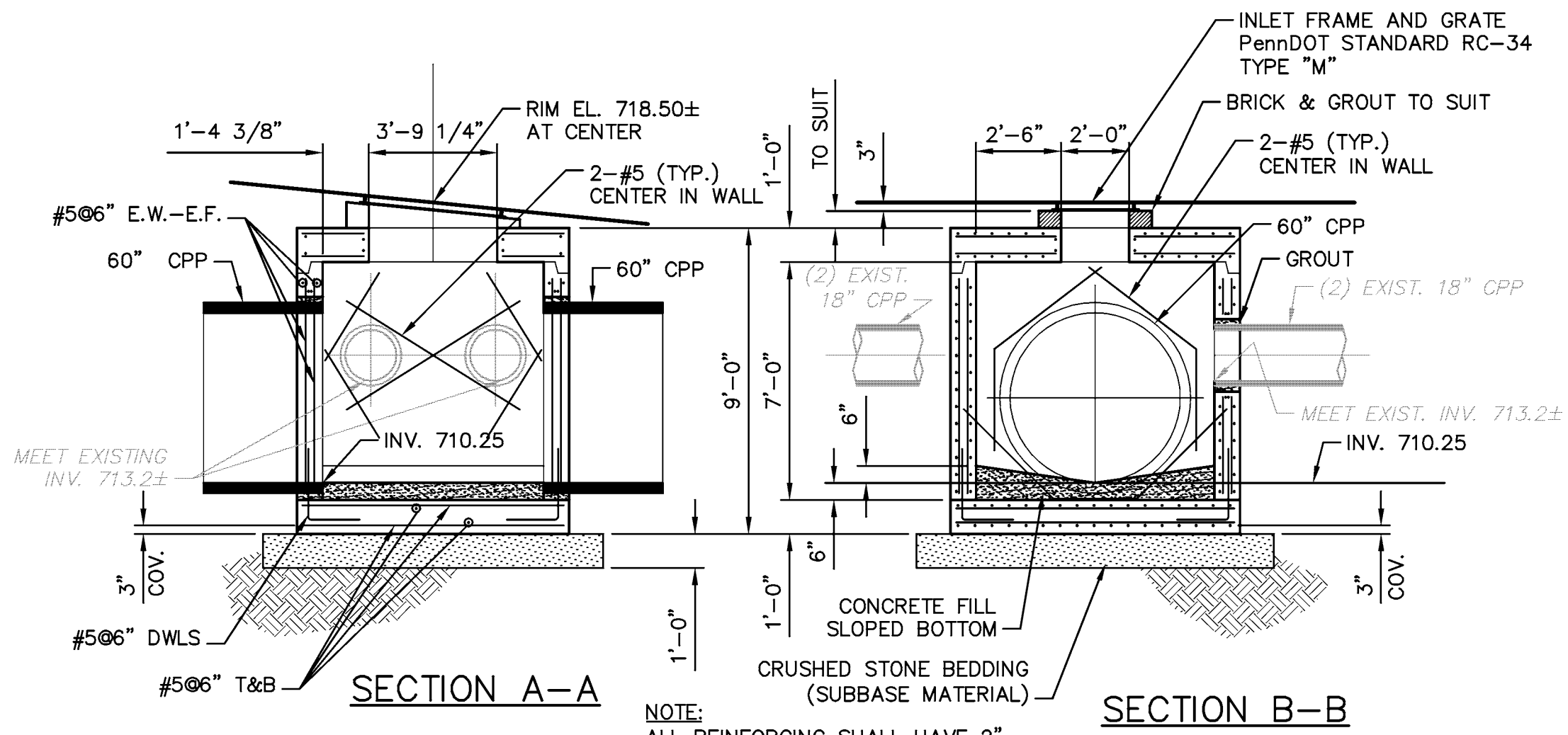
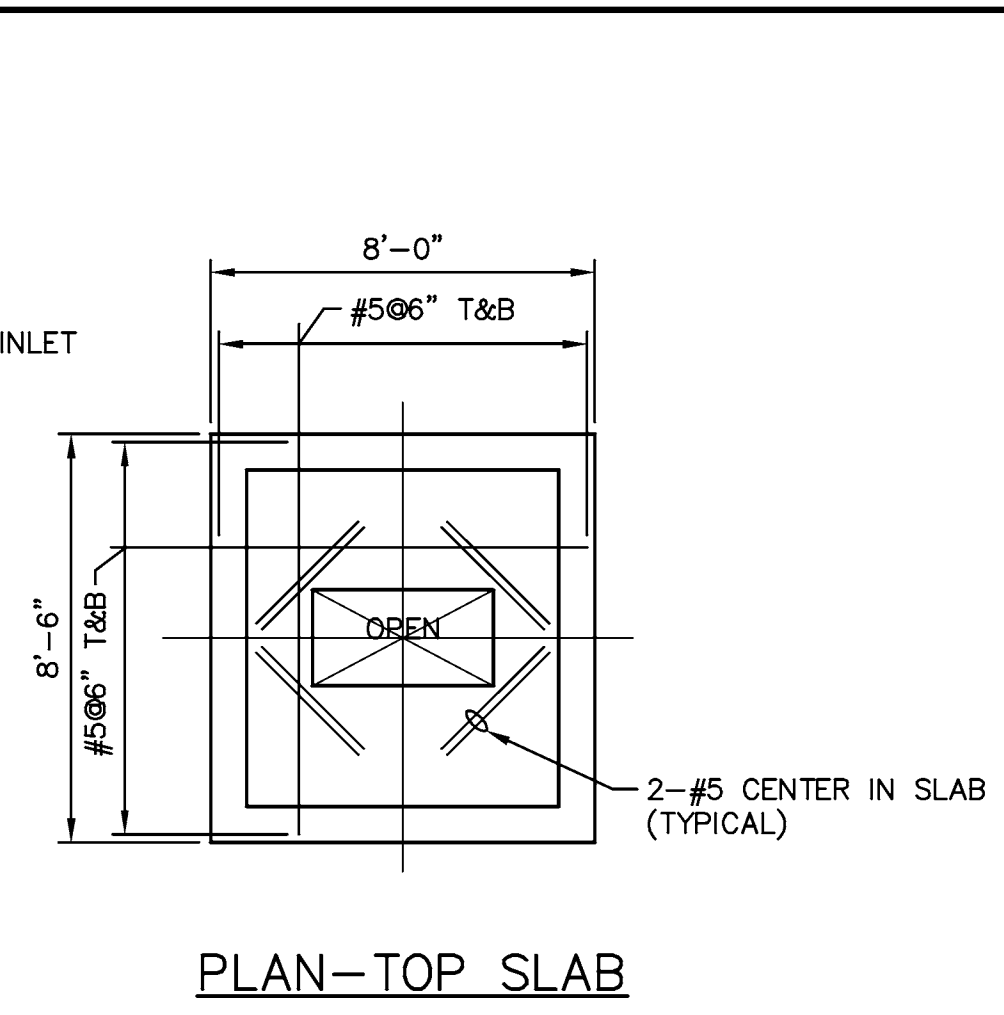
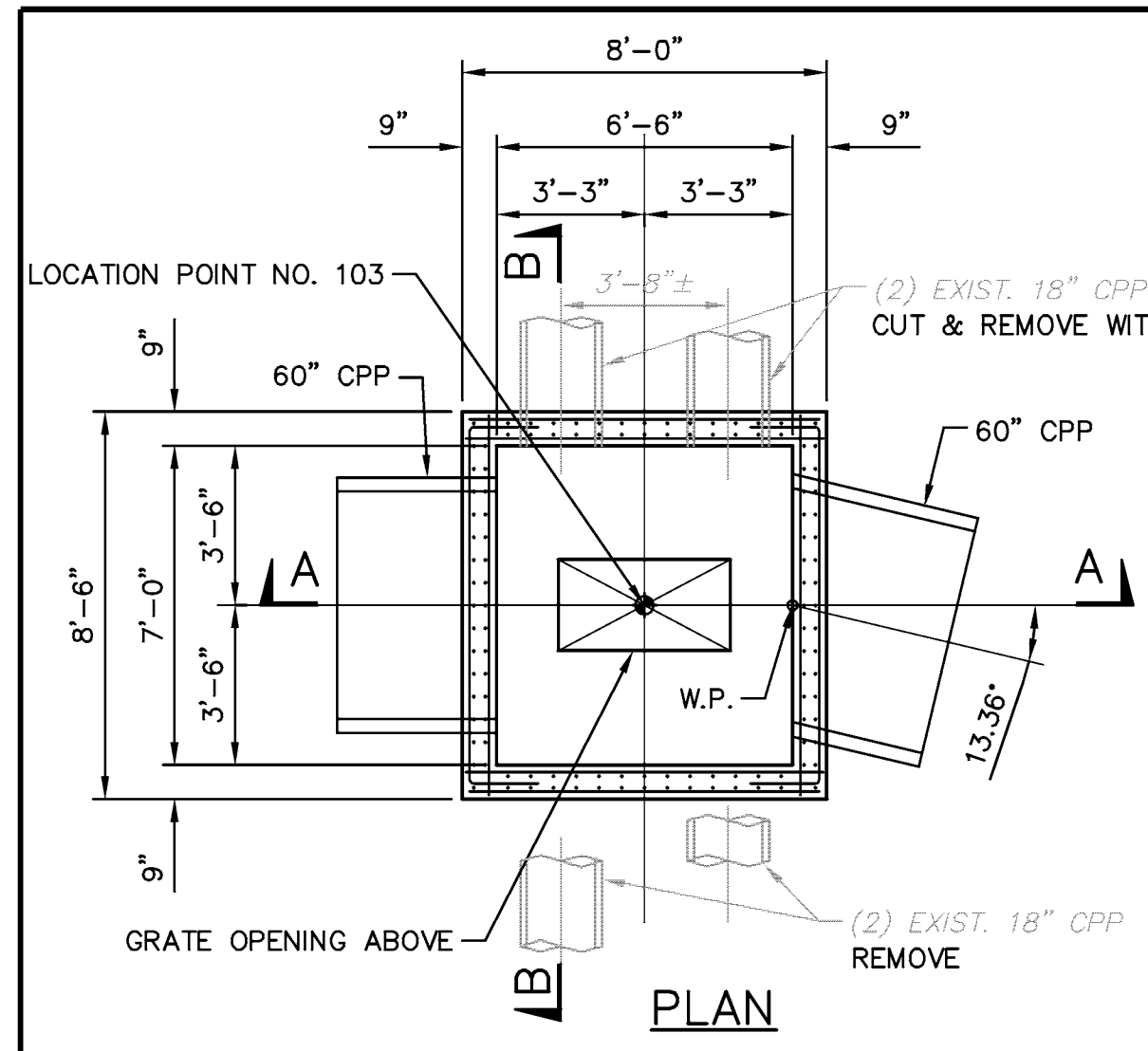
LEACHATE STORAGE TANK CONSTRUCTION

General
DETAILS - DITCH A8-08 AND HEADWALLS A8-07 AND A8-09

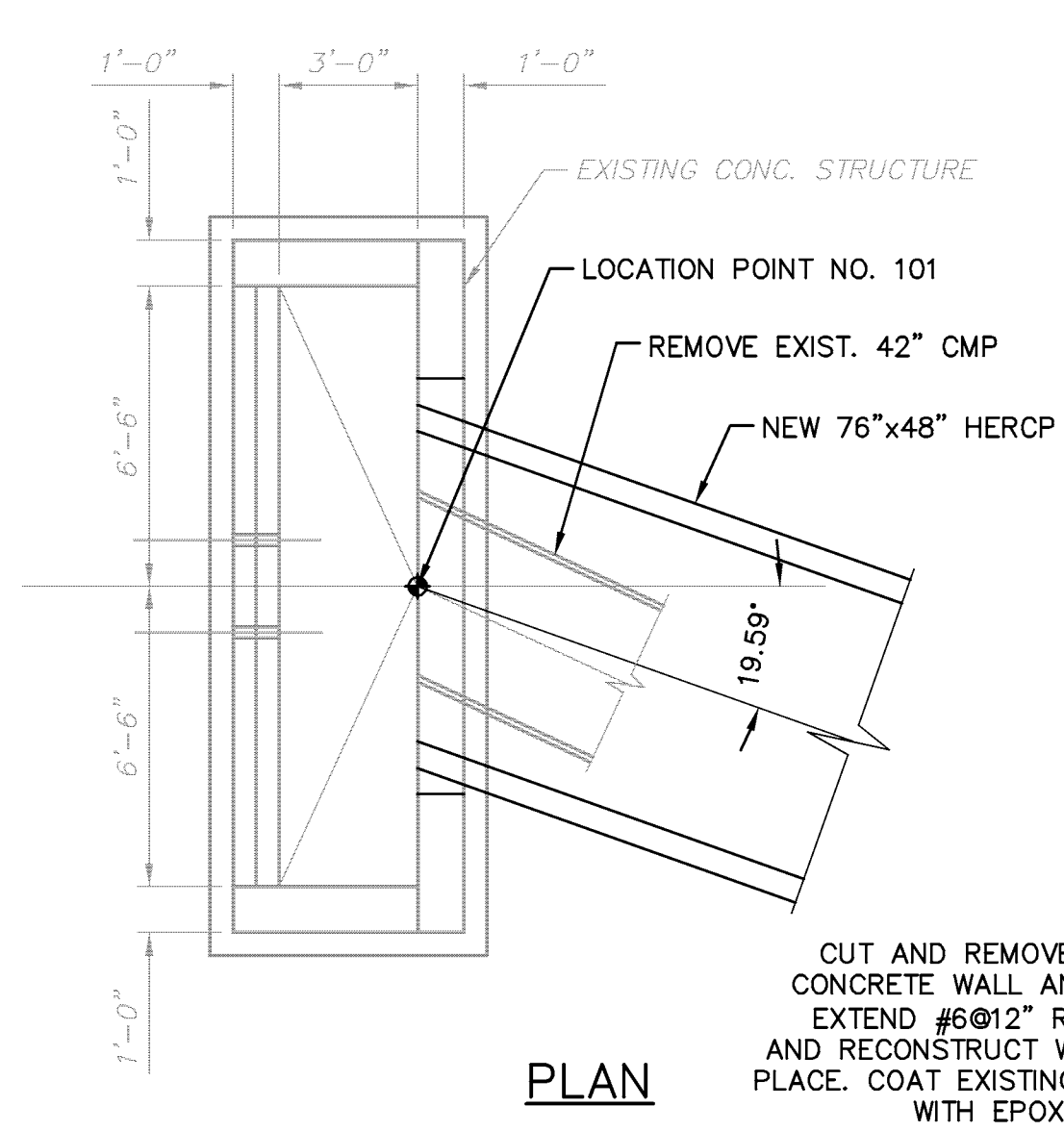
GJB	GLS	GLS	#80-22-G-7420A-22A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809-00	
Size - Project	Drawing Number	Rev.	Sheet	
	G - 7420	A	20 of 45	



© 2011 Cummings & Smith, Inc.

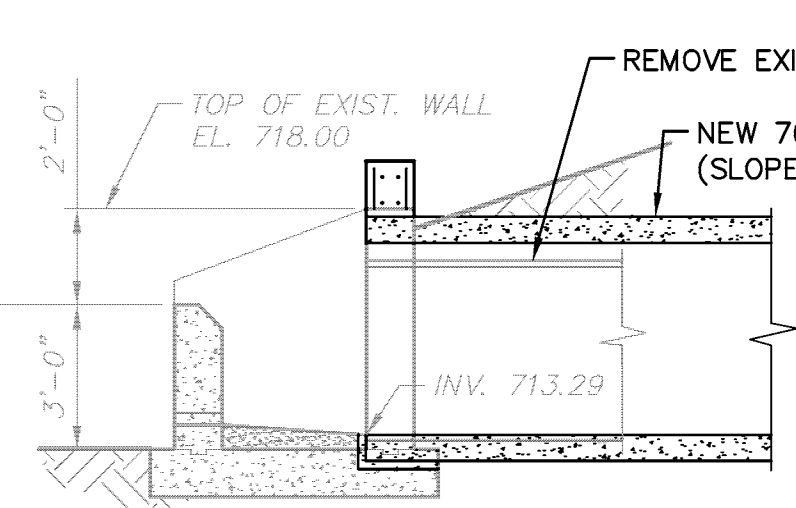


DETAIL - INLET A08-10
1/4" = 1'-0"

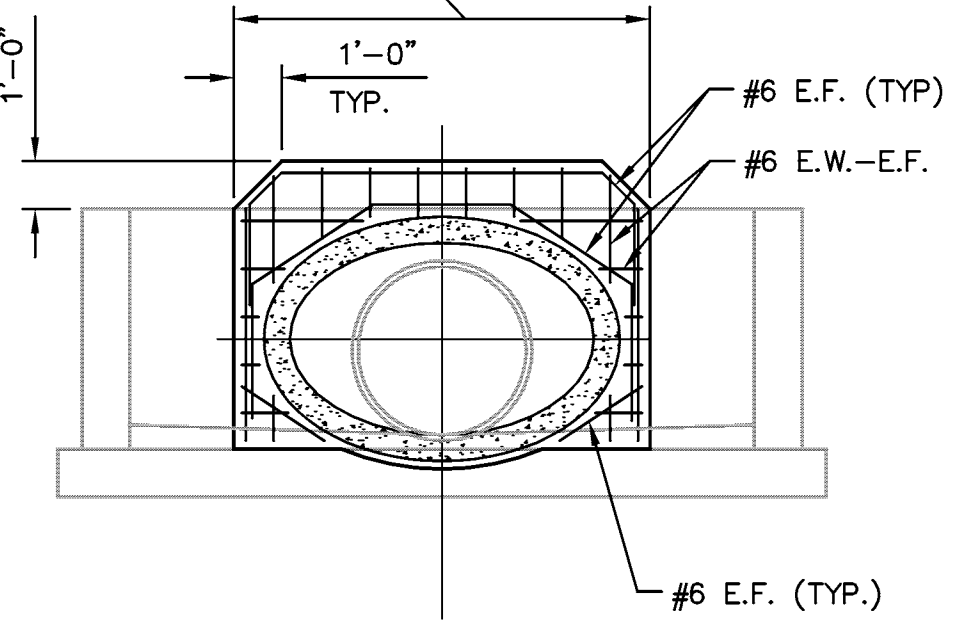


PLAN

CUT AND REMOVE PORTION OF EXISTING CONCRETE WALL AND BASE AS REQUIRED. EXTEND #6@12" REINF. BARS (E.W.-E.F.) AND RECONSTRUCT WALL WITH NEW PIPE IN PLACE. COAT EXISTING CONCRETE SURFACES WITH EPOXY BONDING COMPOUND.

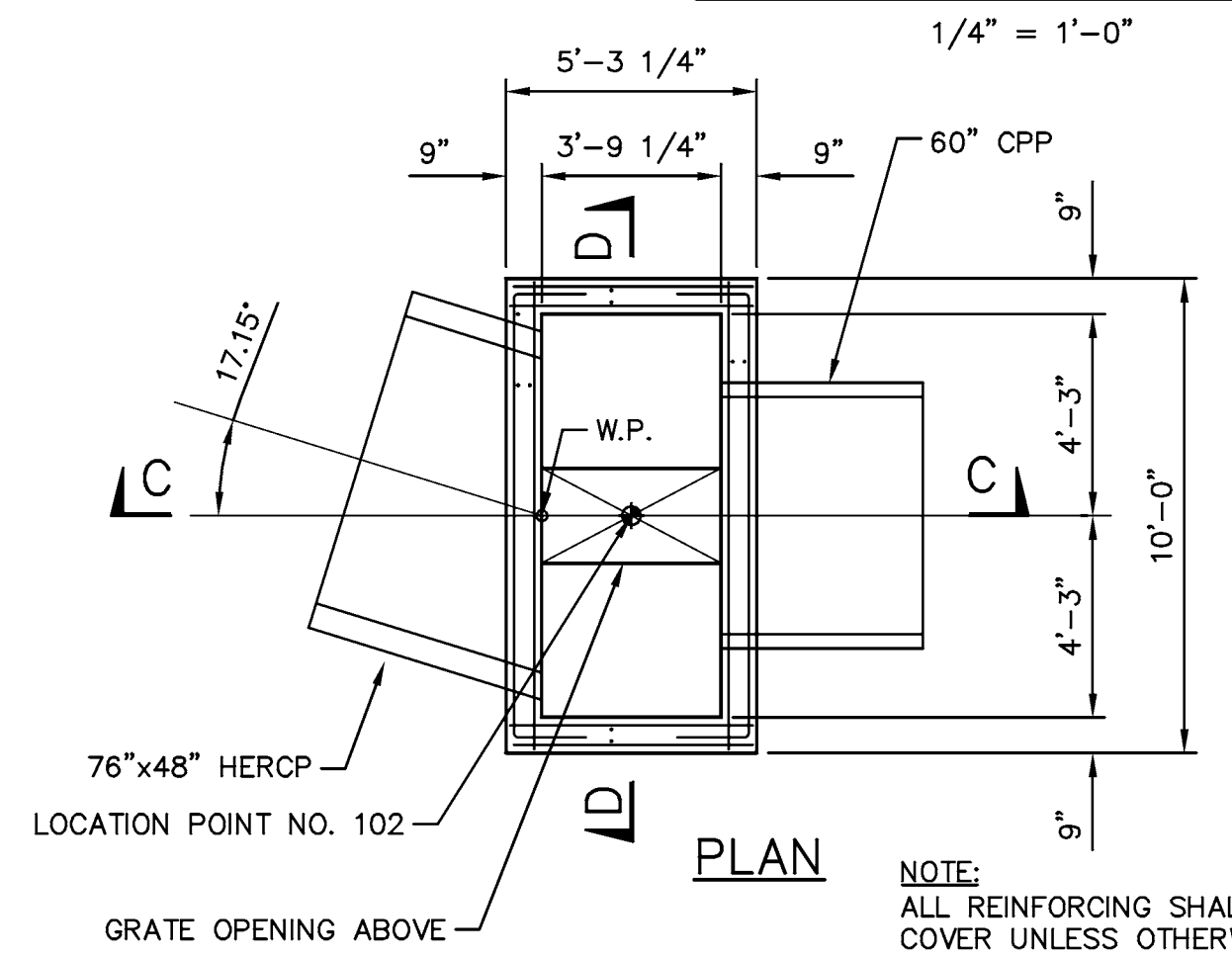


TYPICAL SECTION

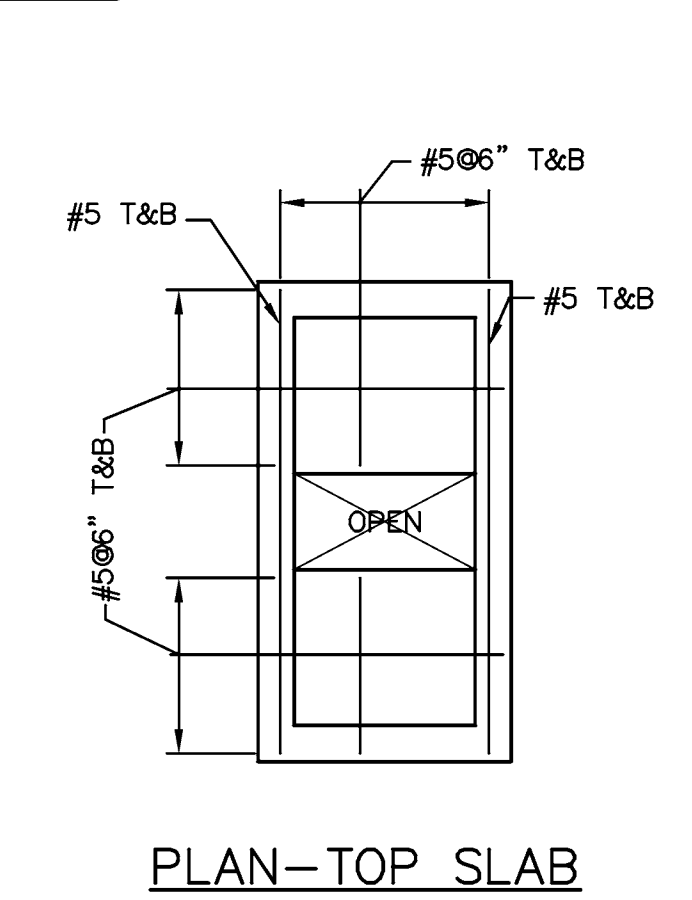


ELEVATION

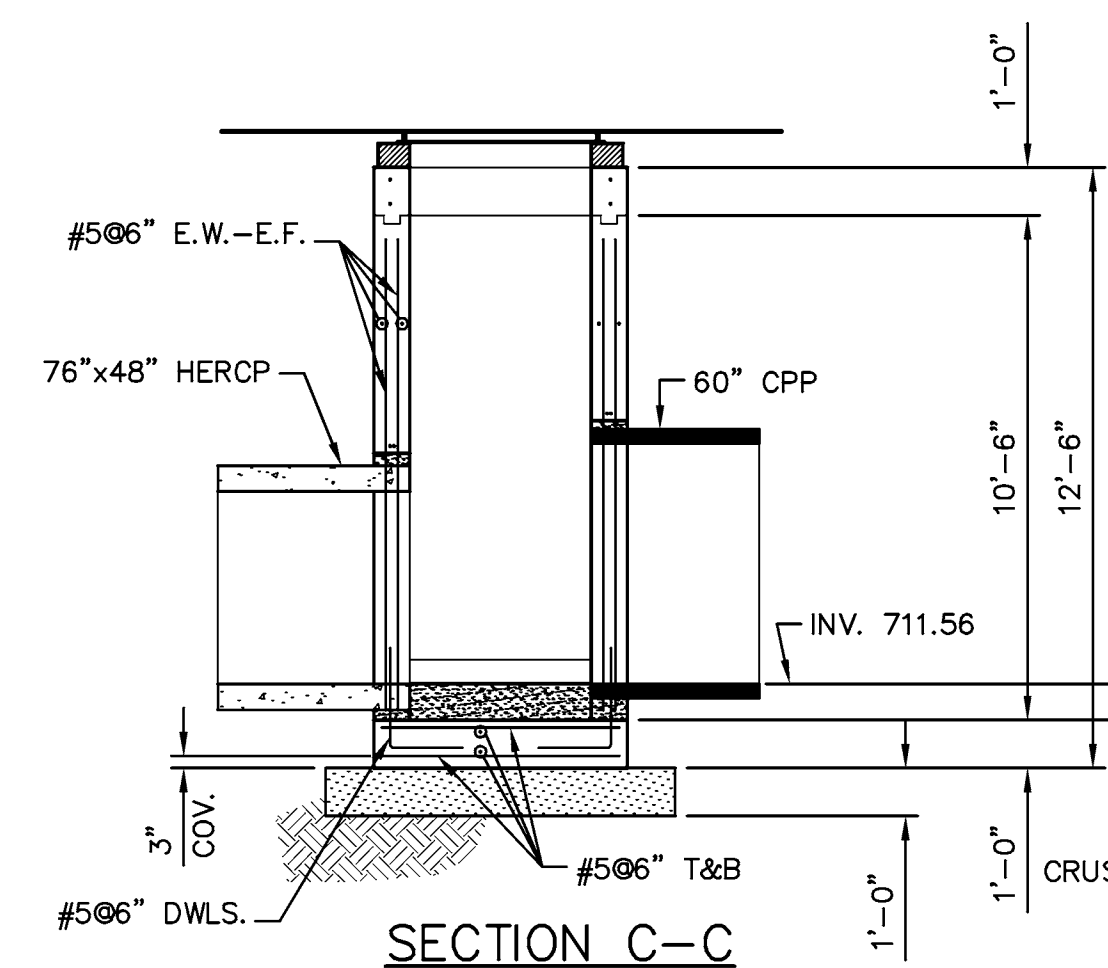
DETAIL - MODIFICATION TO EXISTING INLET A08-12
1/4" = 1'-0"



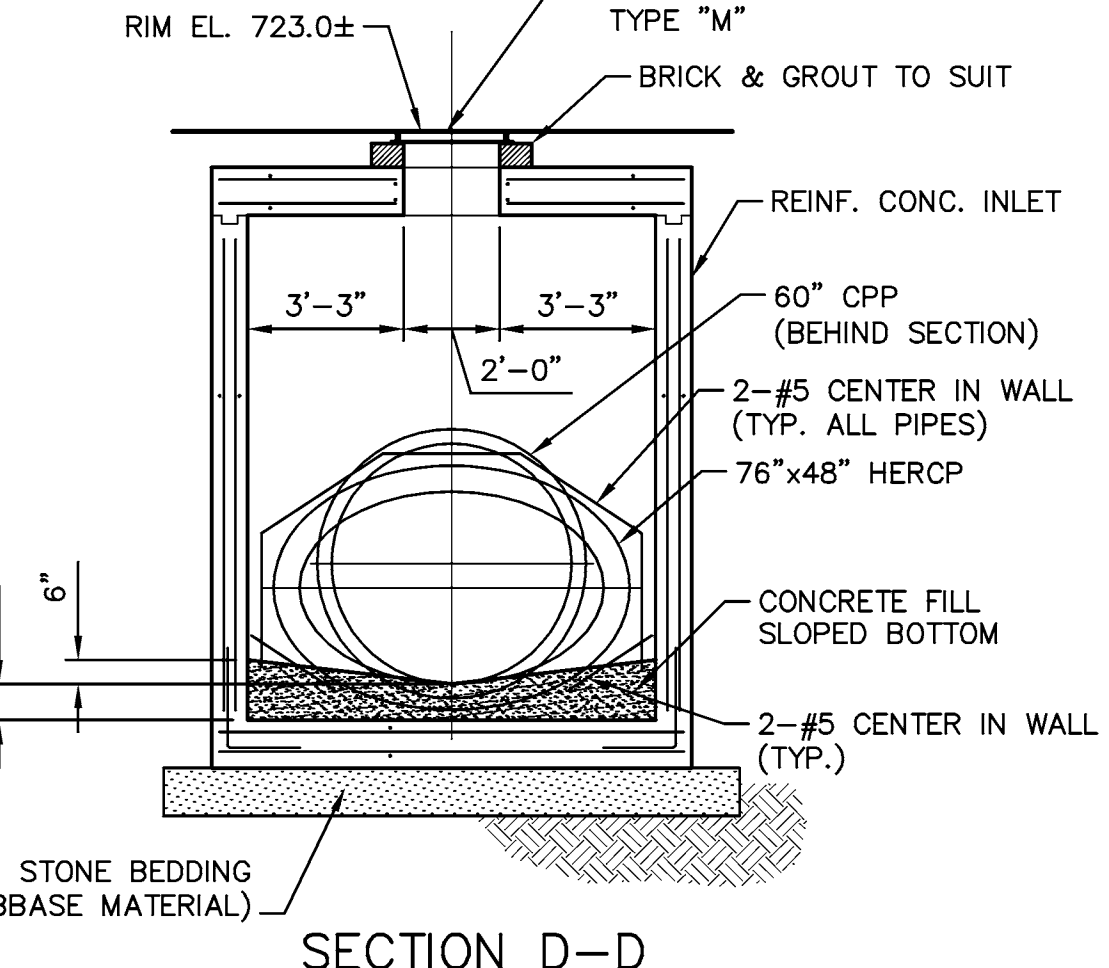
PLAN



PLAN-TOP SLAB

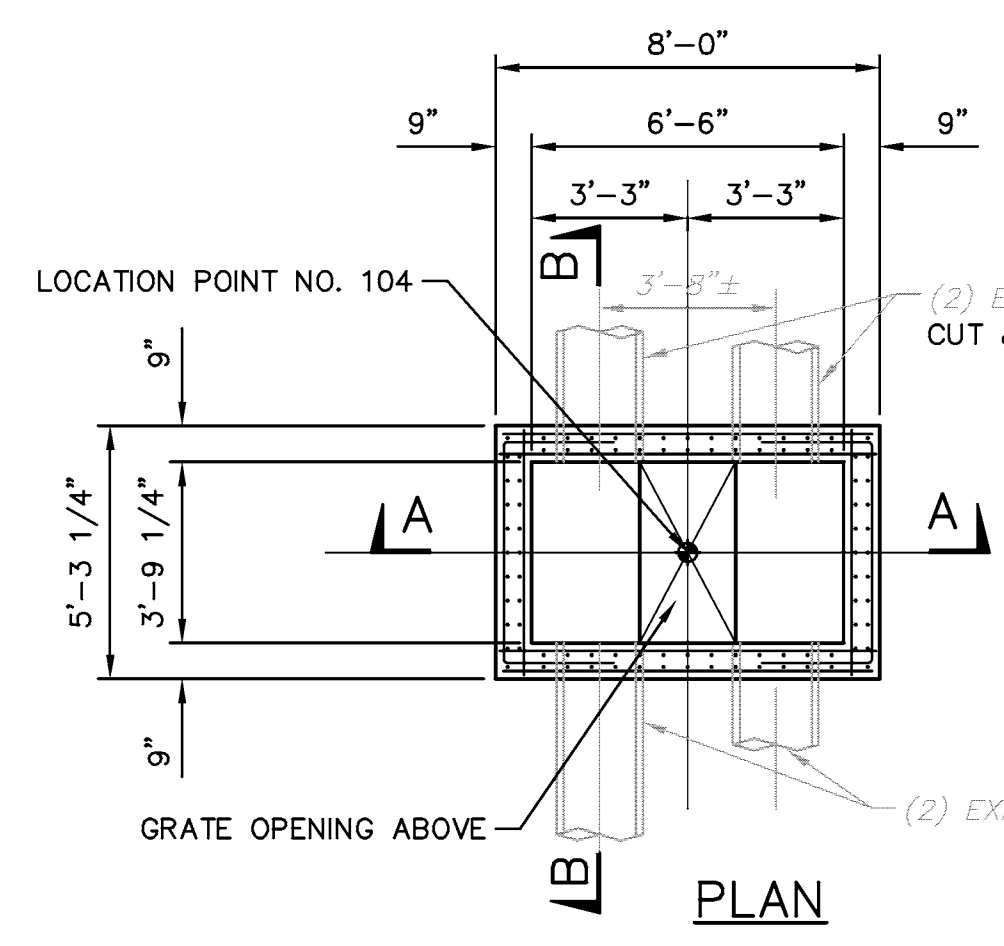


SECTION C-C

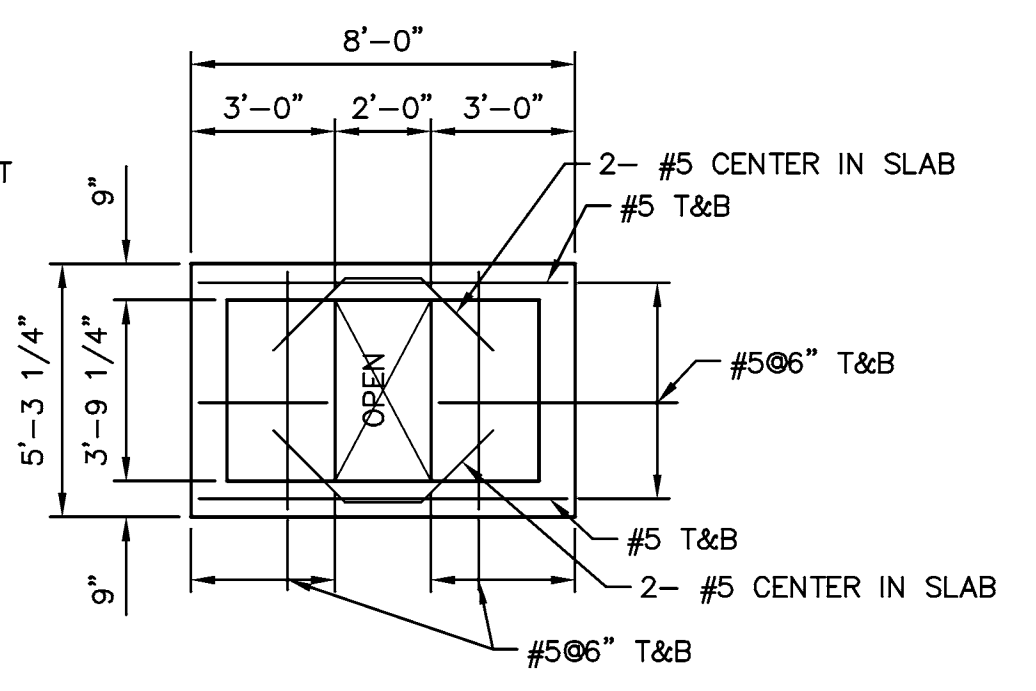


SECTION D-D

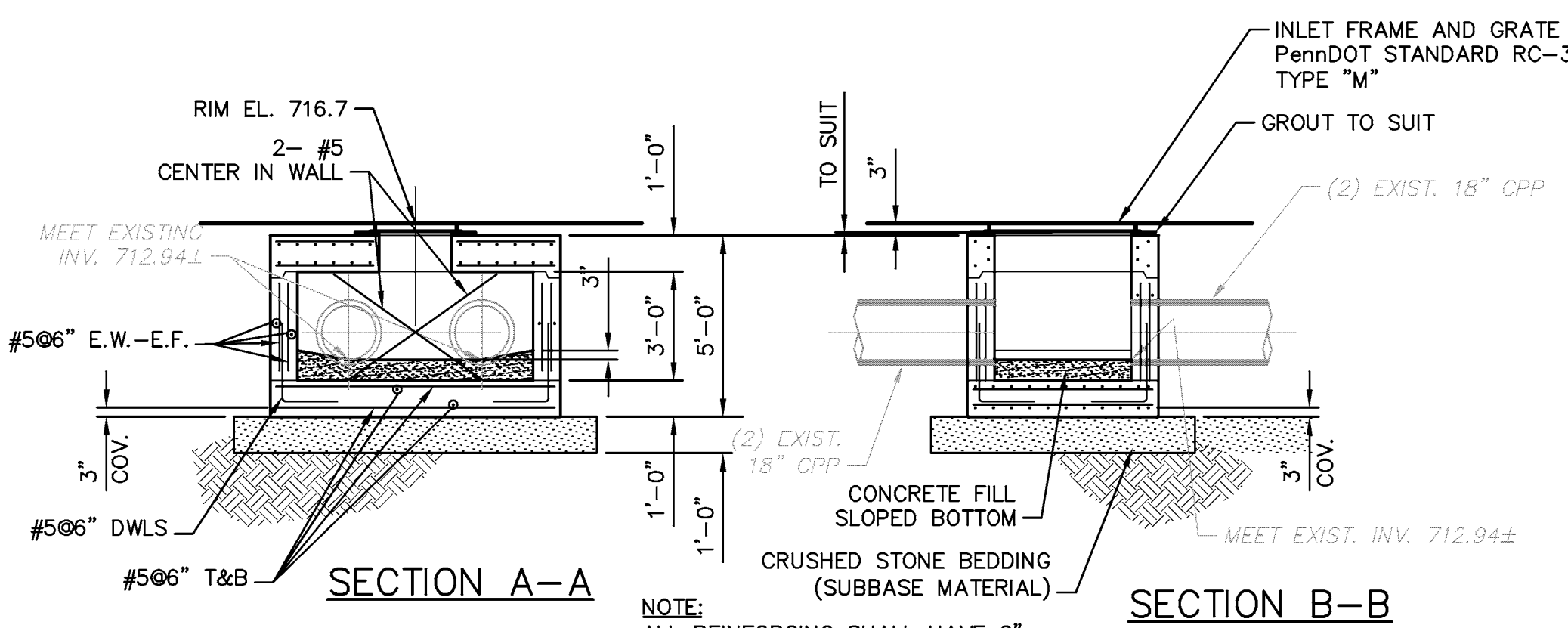
DETAIL - INLET A08-11
1/4" = 1'-0"



PLAN



PLAN-TOP SLAB

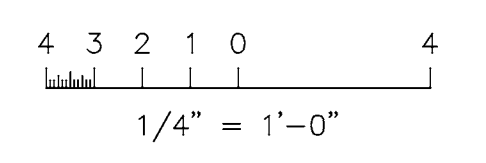


SECTION A-A

SECTION B-B

DETAIL - INLET A08-10-1-A
1/4" = 1'-0"

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



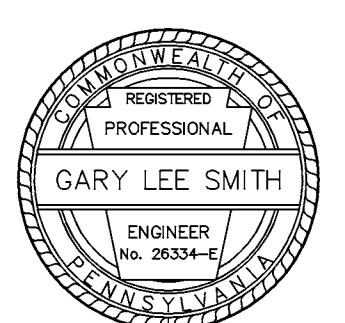
No.	Date	Description	Made	Check	Appd.
REVISIONS					
DATE RELEASED FOR					
XREF Name	Attached XREF File Name	Insertion Point	Block	Layer	

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

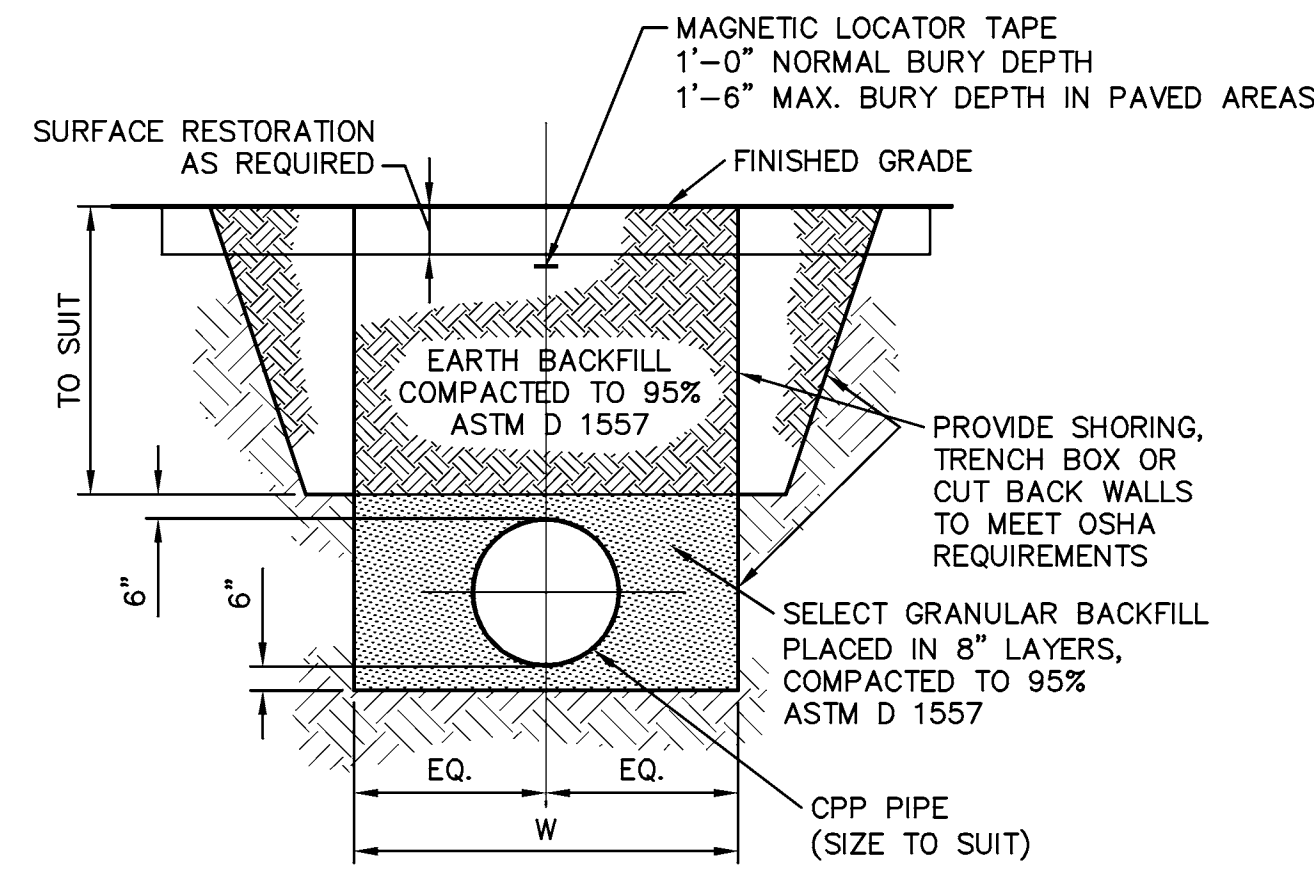
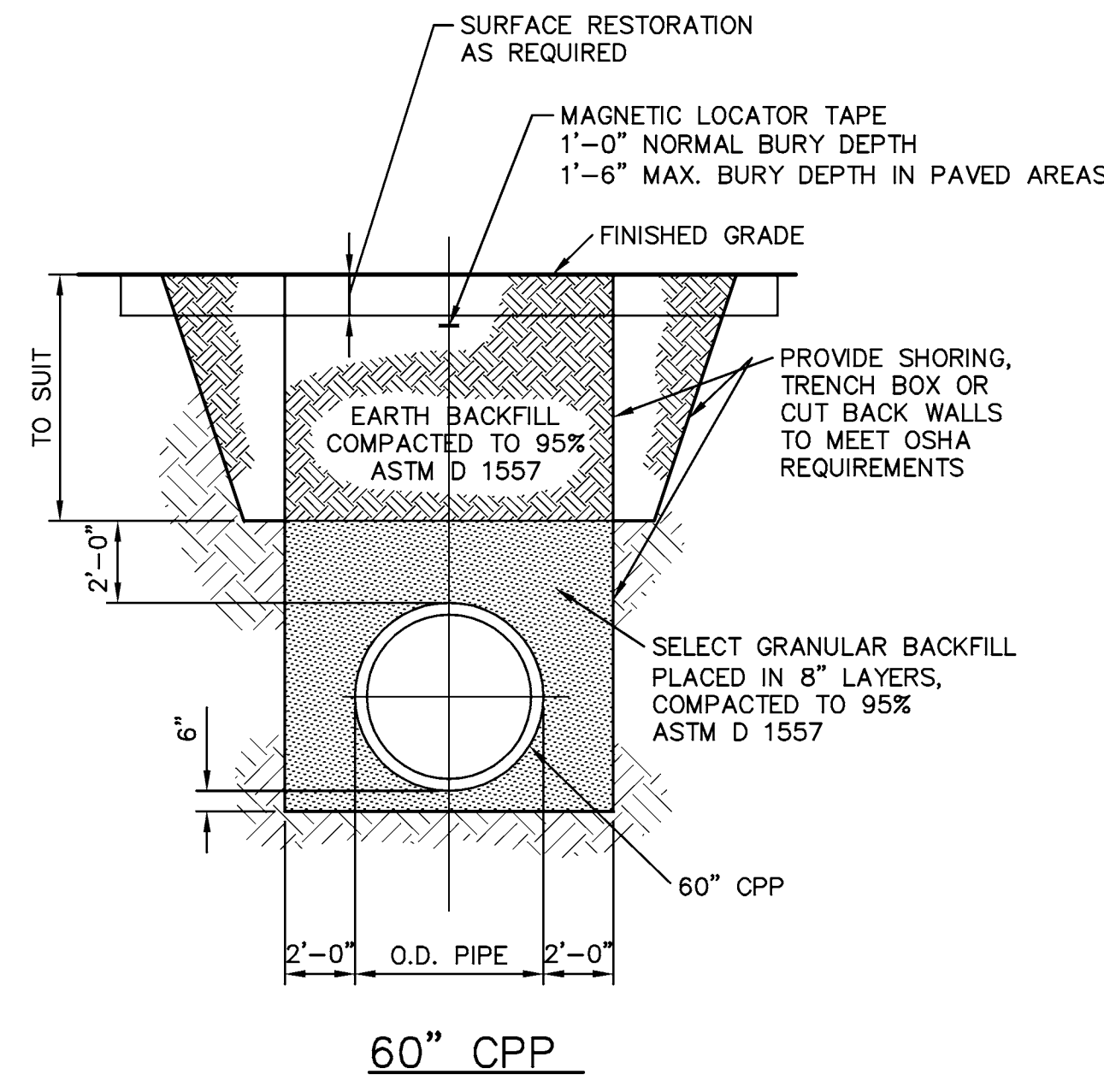
LEACHATE STORAGE TANK CONSTRUCTION
General
DETAIL - INLETS A8-10, A8-11 & A8-12

GJB	GLS	GLS	#40-22-G-7420A-22A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 20809-00	Date
D-20809.00	G - 7421	A	21	45
Size - Project	Drawing Number	Rev.	Sheet	



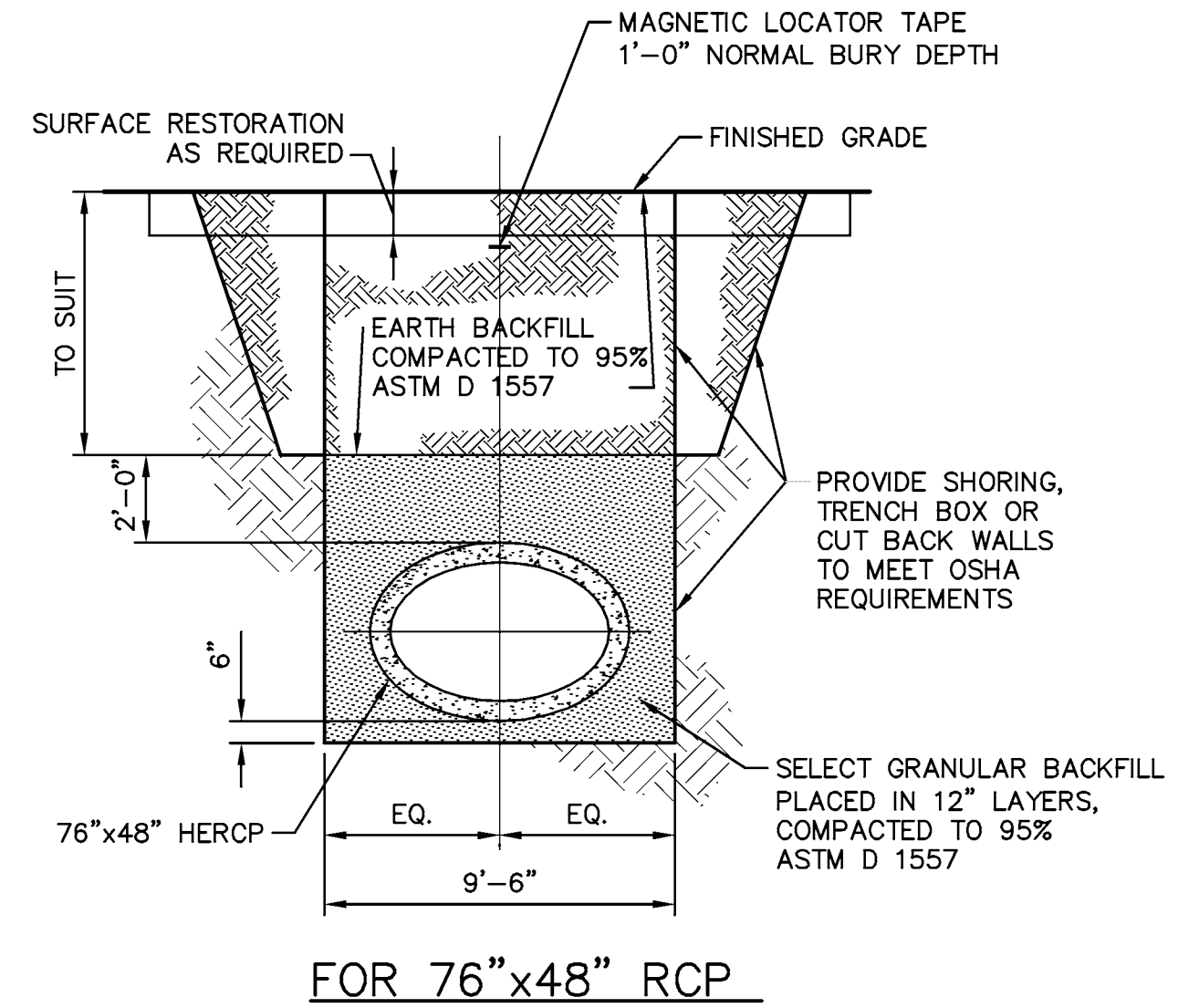
E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWING REVISED 2/4/2014 11:09:12 AM EST

E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\20-22-G-7420A-22A.dwg 2/4/2014 11:12:44 AM EST

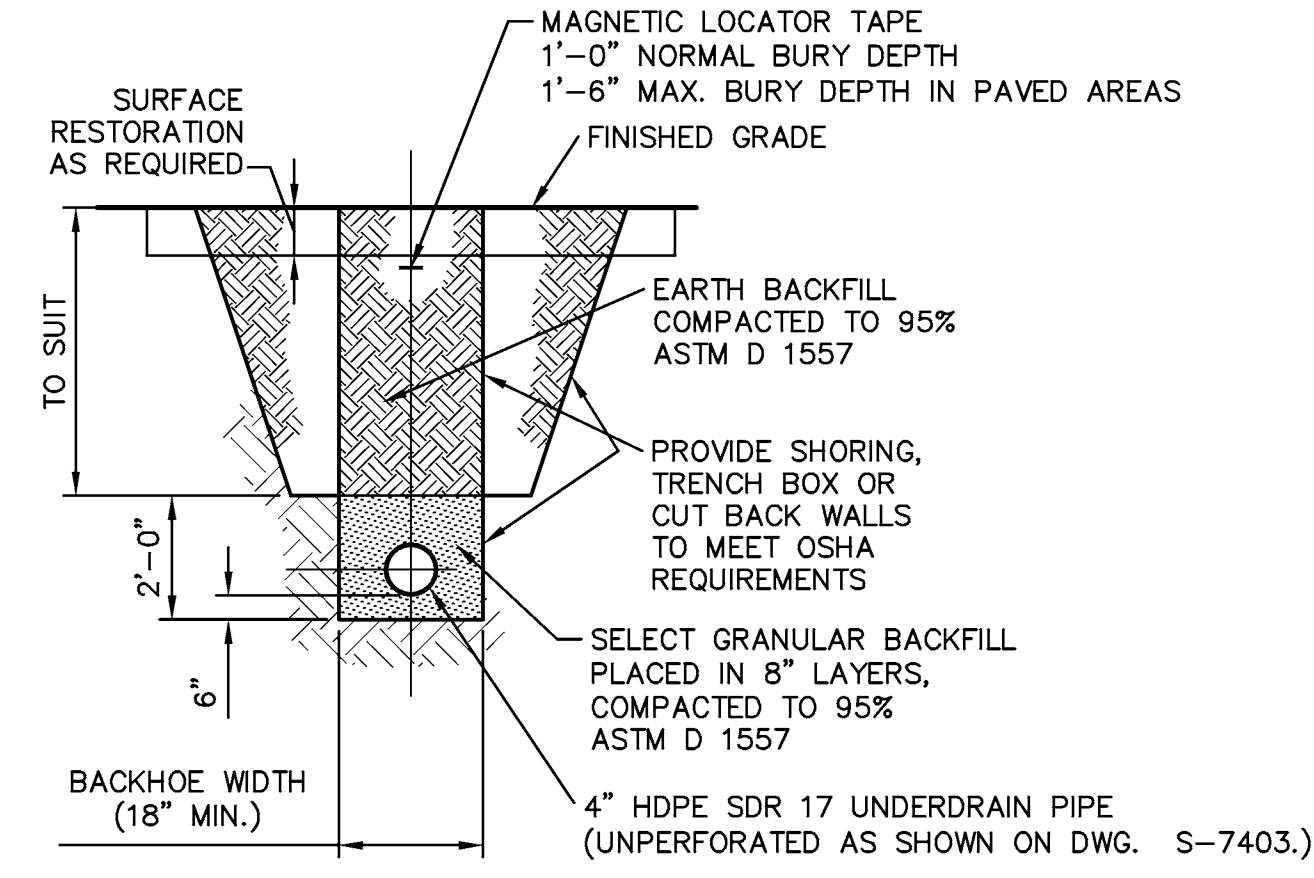


PIPE SIZE	MAX. TRENCH WIDTH W
6"	30"
8"	30"
10"	31"
12"	31"
15"	34"
18"	39"
24"	48"
30"	66"
36"	78"
42"	83"

FOR CPP & HDPE PIPE SMALLER THAN 48"



FOR 76"x48" RCP



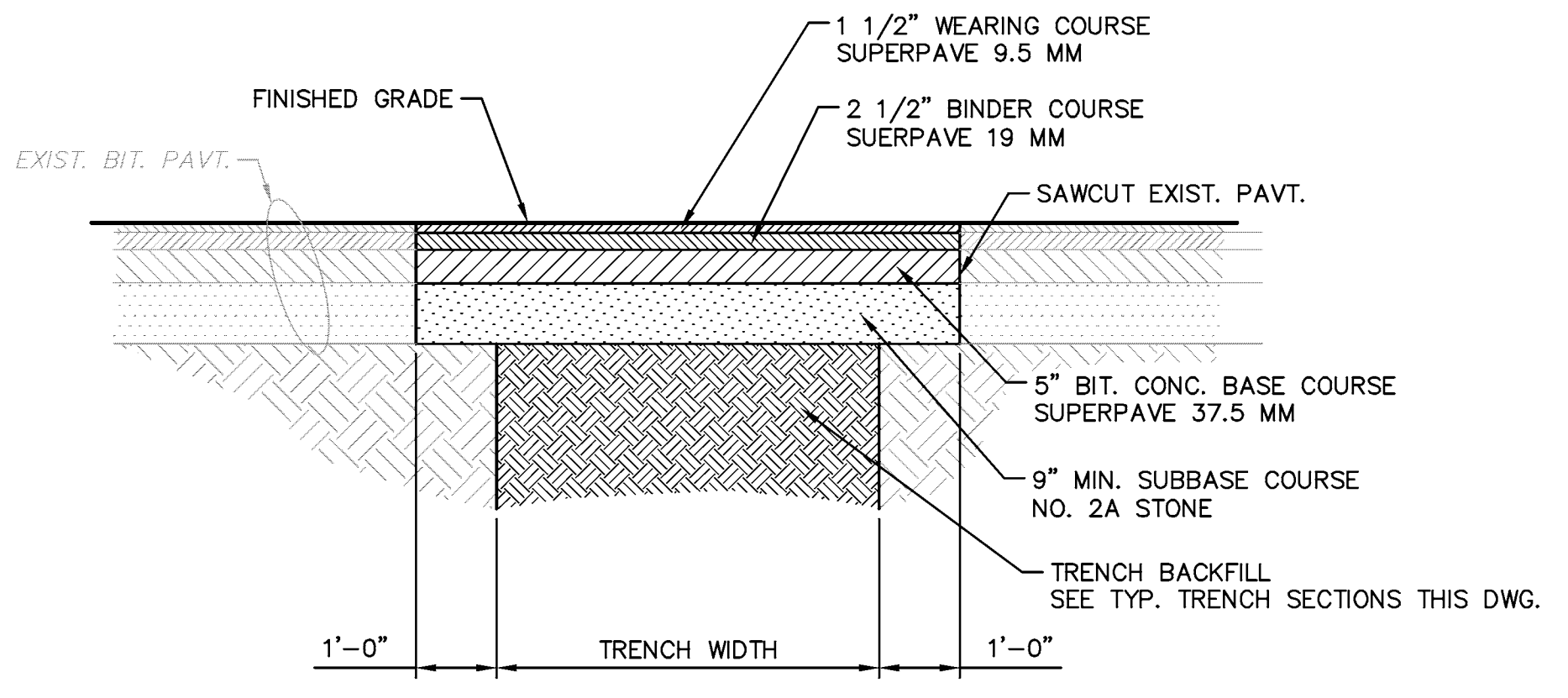
NOTE:
SEE DWG. G-7419 FOR UNDERDRAIN TRENCHES "B" AND "C".

TRENCH "A" FOR UNDERDRAIN PIPE

TYPICAL TRENCH SECTIONS
NOT-TO-SCALE

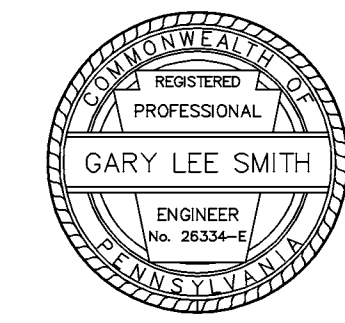
HEADWALL AND END SECTION SCHEDULE					
STRUCTURE	PIPE		TYPE	REMARK	
	SIZE	INV.			
A08-7	(3)	24" CPP	EXIST	HEADWALL	SEE DET. DWG. G-7420, DITCH A08-8

HEADWALL AND END SECTION SCHEDULE FOR CHANNELS							
STRUCTURE	PIPE		TYPE	CHANNEL			REMARK
	SIZE	INV.		L	WB	WT	
A08-9	60" CPP	709.63	HEADWALL	25'	16'	26'	SEE DET. DWG. G-7420, DITCH A08-8



PAVEMENT RESTORATION DETAIL
NOT-TO-SCALE

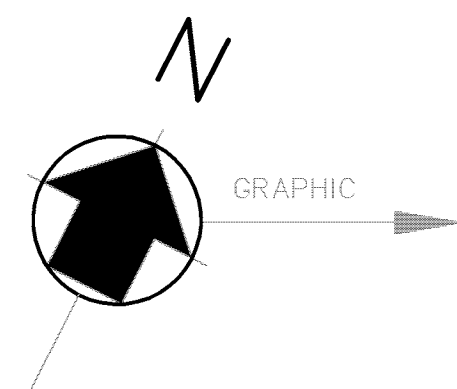
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



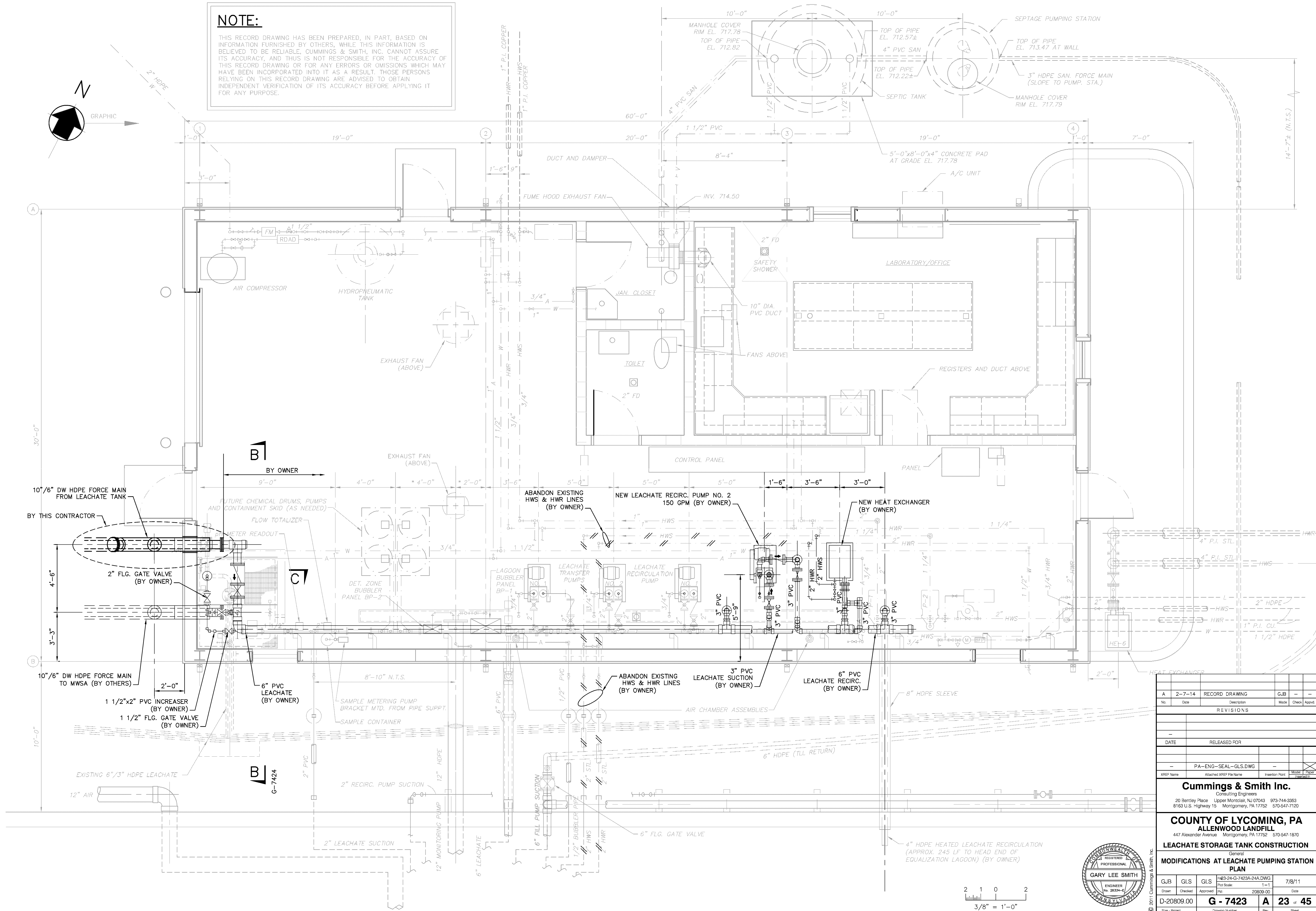
No.	Date	Description	Made	Check	Appd.
REVISIONS					
DATE RELEASED FOR					
XREF Name Attached XREF File Name Insertion Point					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION General					
TYPICAL DRAINAGE DETAILS					
GJB	GLS	GLS	F#80-22-G-7420A-22A.DWG	7/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date	
D-20809.00			20809-00		
Size - Project		Drawing Number		Rev.	Sheet
		G - 7422		A	22 of 45

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



E:\Land 2005 Projects\Lycoming County\889-00 LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\23-24-G-7423A-24A.dwg 2/4/2014 11:50:09 AM EST



No.	Date	Description	By	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB	-	-

DATE	RELEASED FOR
-	-

XREF Name	Attached XREF File Name	Insertion Point	Insertion Point
-	-	-	-

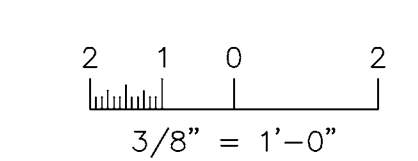
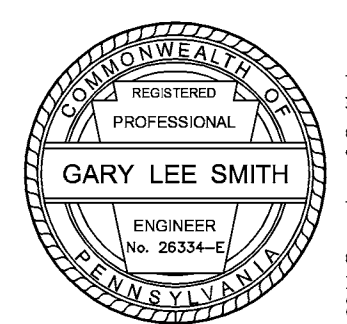
Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

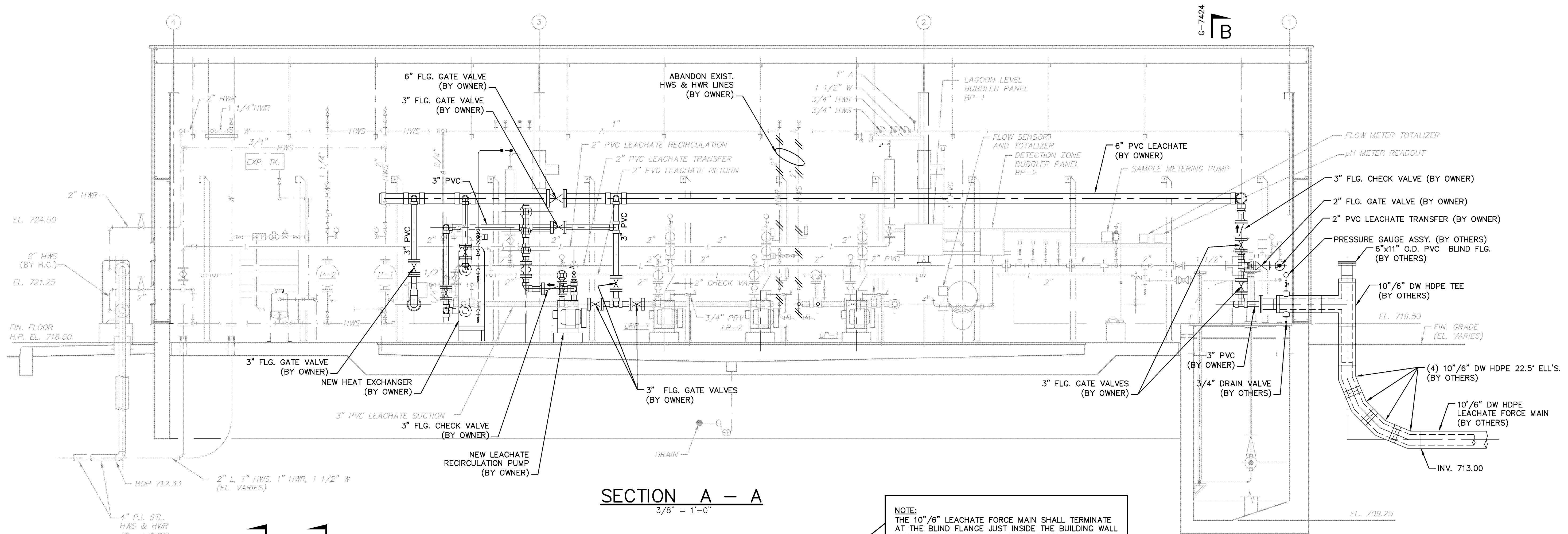
COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
 General
MODIFICATIONS AT LEACHATE PUMPING STATION PLAN

GJB	GLS	GLS	#E23-24-G-7423A-24A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00	G-7423	A	23 of 45	

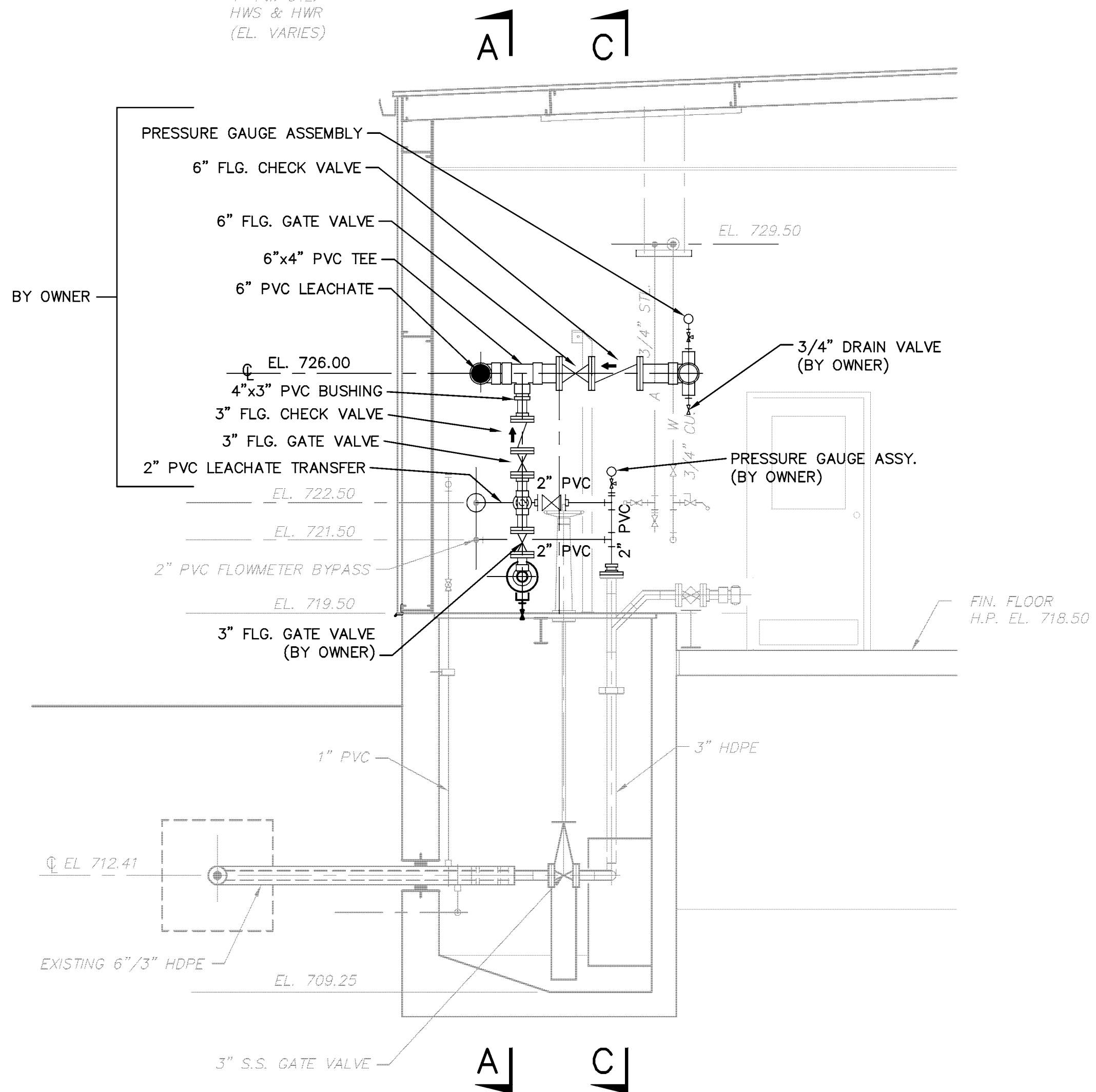
© 2011 Cummings & Smith, Inc.



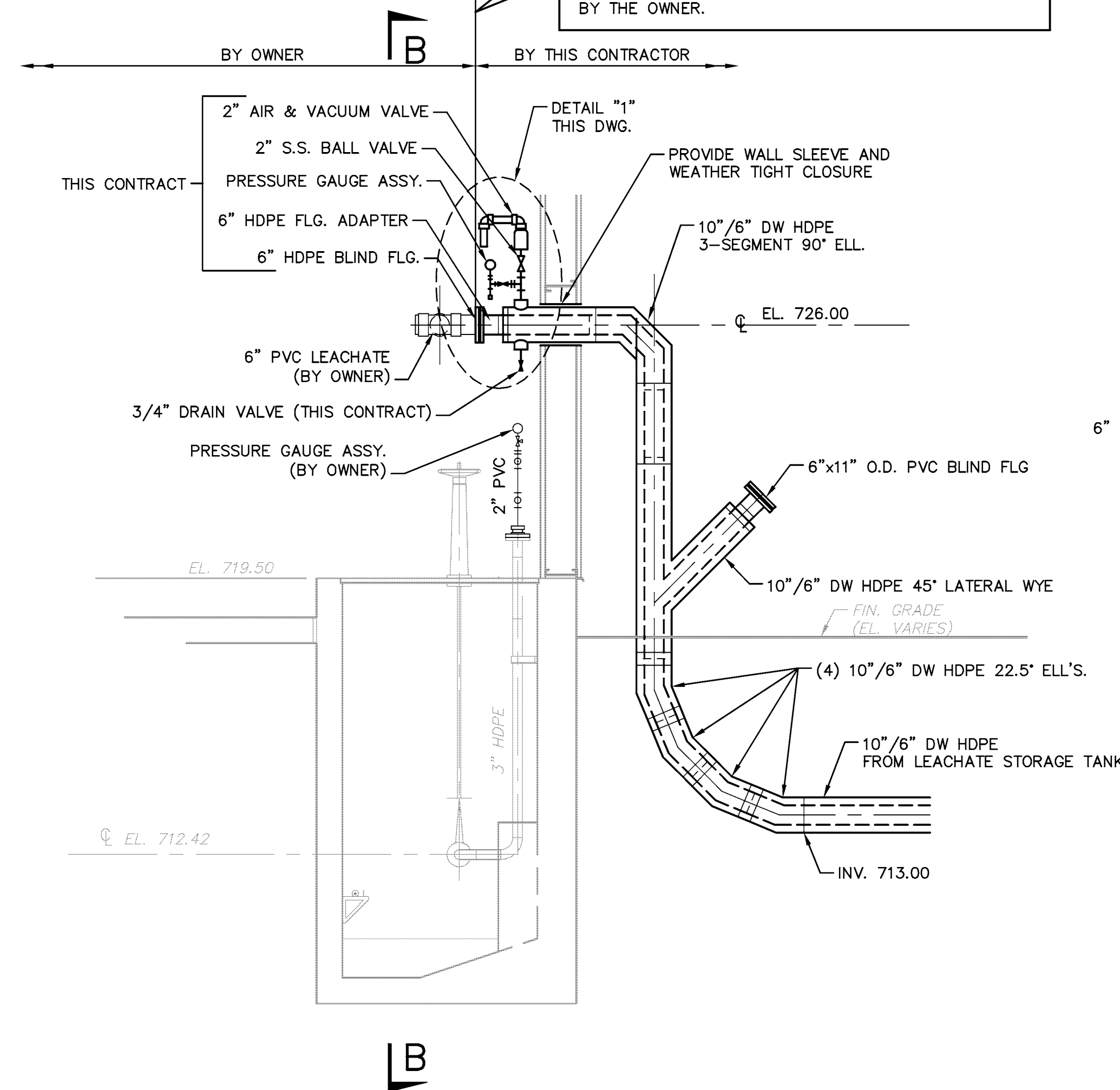


SECTION A - A
3/8" = 1'-0"

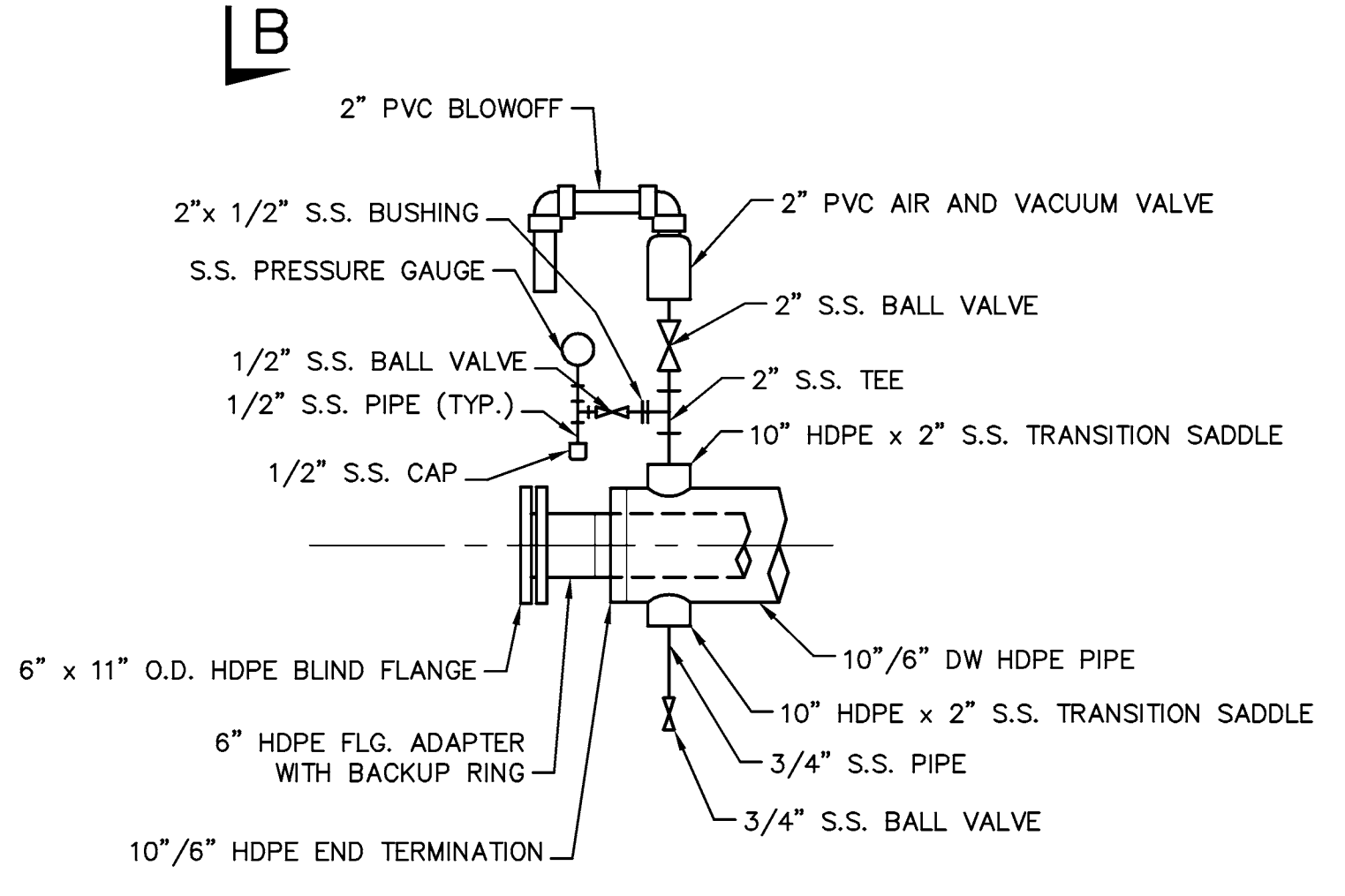
NOTE:
THE 10"/6" LEACHATE FORCE MAIN SHALL TERMINATE AT THE BLIND FLANGE JUST INSIDE THE BUILDING WALL BY THIS CONTRACTOR. ALL OTHER WORK SHOWN SHALL BE FURNISHED AND INSTALLED BY OTHERS OR BY THE OWNER.



SECTION B - B
3/8" = 1'-0"

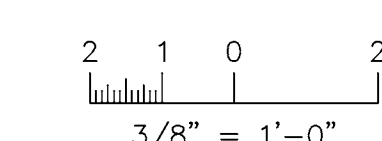


SECTION C - C
3/8" = 1'-0"



DETAIL "1"
NOT-TO-SCALE

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	REVISIONS	Discipline	Maker	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB			

DATE RELEASED FOR

XREF Name	Attached XREF File Name	Insertion Point	Block	Layer
	PA-ENG-SEAL-GLS.DWG			

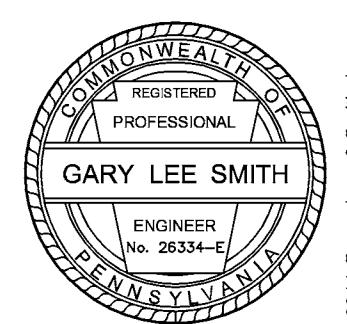
Cummings & Smith, Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-1720

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
General
MODIFICATIONS AT LEACHATE PUMPING STATION
SECTIONS - 1

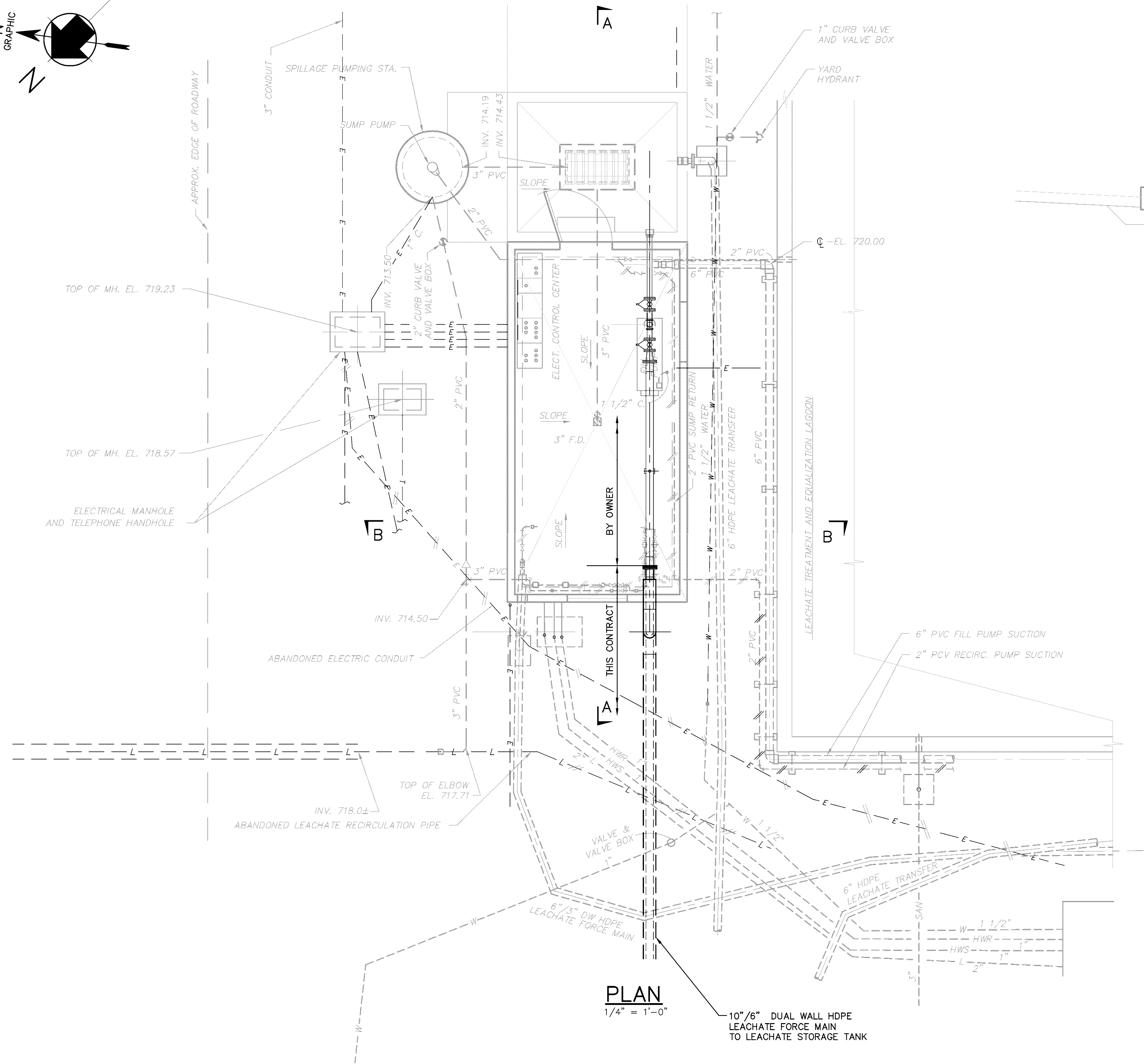
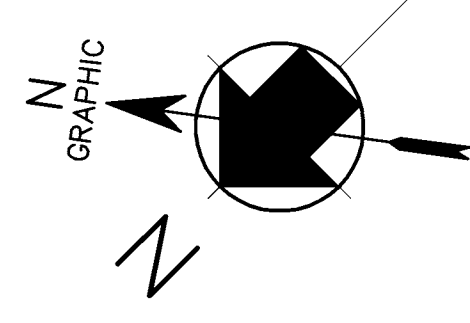
GJB	GLS	GLS	PA-ENG-SEAL-GLS.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 20809-00	Date
D-20809.00	G - 7424	A	24	45

2011 Cummings & Smith, Inc.

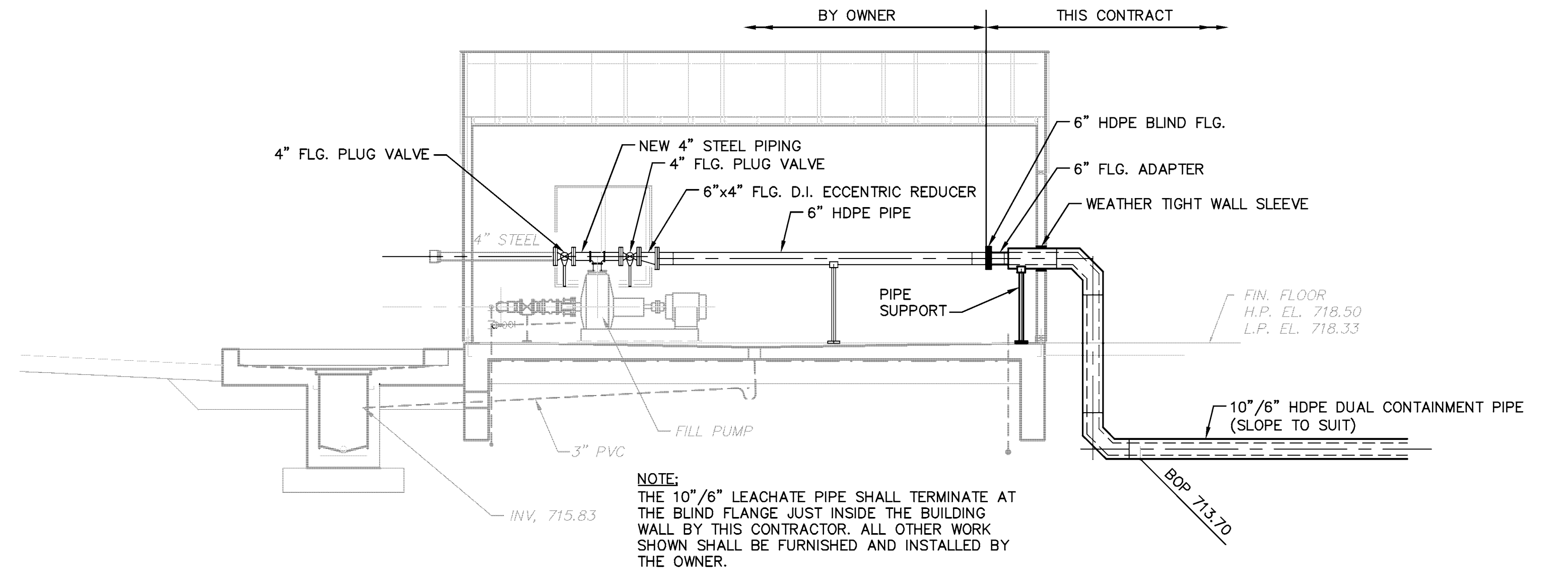


E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWING 2/7/2014 11:50:09 AM EST

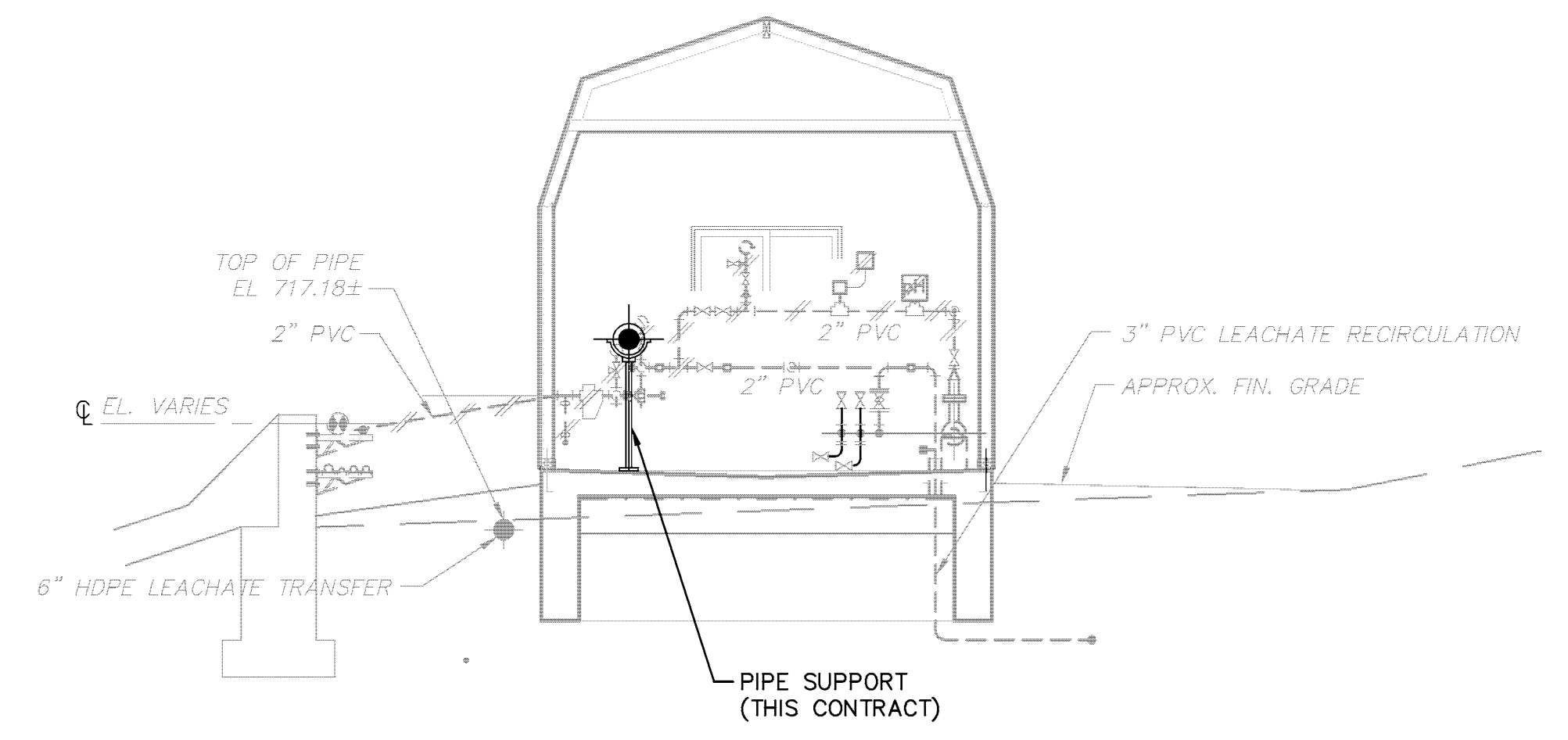
E:\Land 2005 Projects\Lycoming County\120889-00 LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWINGS\25-G-7425-A.dwg 2/4/2014 11:59:34 AM EST



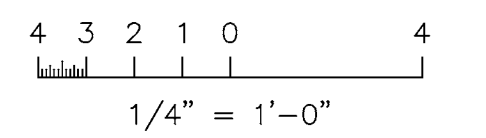
PLAN
1/4" = 1'-0"



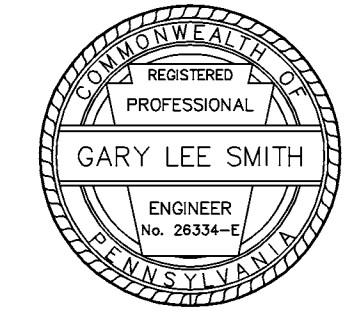
SECTION A - A
1/4" = 1'-0"



SECTION B - B
1/4" = 1'-0"



NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Drawn	Check	Appr.
REVISIONS					
A	2-7-14	RECORD DRAWING	GJB	-	-

DATE	RELEASED FOR
-	-

XREF Name	Attached XREF File Name	Insertion Point	Sheet	Sheet
-	PA-ENG-SEAL-GLS.DWG	-	-	-

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION

MODIFICATIONS AT EXISTING
RECIRCULATION PUMPING STATION

GJB	GJB	GJB	File: 25-G-7425-A.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1=1	Date
D-20809.00	G - 7425	A	20809-00	25 of 45
Size - Project	Drawing Number	Rev.	Sheet	

GENERAL

- THE NOTES OF THESE DRAWINGS ARE NOT INTENDED TO REPLACE PROJECT SPECIFICATIONS. SEE PROJECT SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES. INCONSISTENCIES BETWEEN THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
- CONTRACTOR SHALL COORDINATE ALL MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS AND SPECIFICATIONS WITH THE STRUCTURAL CONTRACT DRAWINGS. CONSULT THE APPROPRIATE DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, CHASES, INSERTS, REGLETS, SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING AND VERIFYING THE EXISTENCE AND LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF WORK.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING AND VERIFYING ALL SITE CONDITIONS AND FIELD VERIFYING DIMENSIONS BEFORE THE COMMENCEMENT OF WORK. THE STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY DISCREPANCIES OR DEVIATIONS FROM THE DRAWINGS.
- THESE NOTES APPLY TO ALL DRAWINGS WITHIN THIS SET.
- PROJECT LOCATION:
LYCOMING COUNTY LANDFILL
447 ALEXANDER DRIVE
MONTGOMERY, PA 17752
- MUNICIPALITY: BRADY TOWNSHIP, LYCOMING COUNTY, PENNSYLVANIA
- BUILDING CODES AND STANDARDS:
A. PENNSYLVANIA UNIFORM CONSTRUCTION CODE (PAUCC).
B. INTERNATIONAL BUILDING CODE (IBC), 2009, AS ADOPTED AND MODIFIED BY THE PAUCC.
C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2005 (ASCE 7).
D. AMERICAN CONCRETE INSTITUTE (ACI):
1. STRUCTURES OTHER THAN LEACHATE TANK: ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
2. LEACHATE STORAGE TANK:
A. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES.
B. ACI 350.1-01 TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES.
- OCCUPANCY:
A. USE GROUP: U (LEACHATE TANK AND CONTROL BUILDING).
B. CATEGORY: I.
- DESIGN LOADS:
A. FLOOR LIVE LOADS:
1. STAIRS, PLATFORMS, AND MISC. FLOORS: 100 PSF.
2. LEACHATE TANK WEAR SLAB: 250 PSF.
B. ROOF LIVE LOAD: 20 PSF.
C. SNOW LOADS:
1. GROUND SNOW LOAD: 35 PSF.
2. ROOF SNOW LOAD: 24.5 PSF.
D. WIND LOADS:
1. BASIC WIND SPEED: 90 MPH.
2. IMPORTANCE FACTOR: I.
3. EXPOSURE: C.
4. INTERNAL PRESSURE COEFFICIENT: VARIES.
E. EARTHQUAKE DESIGN DATA:
1. SEISMIC OCCUPANCY CATEGORY: I.
2. SEISMIC IMPORTANCE FACTOR: 1.0.
3. SS = 0.16 G.
4. S1 = 0.052 G.
5. SITE CLASS = B.
6. SPECTRAL RESPONSE COEFFICIENTS:
A. SDS = 0.107.
B. SD1 = 0.035.
7. SEISMIC DESIGN CATEGORY: A.
8. BASIC SEISMIC FORCE RESISTING SYSTEM:
NON-BUILDING STRUCTURE NOT SIMILAR TO BUILDINGS, FLAT BOTTOM GROUND SUPPORTED TANK, REINFORCED CONCRETE, REINFORCED NON-SLIDING BASE.
9. DESIGN BASE SHEAR: 2.33 KIPS.
10. ANALYSIS PROCEDURE:
NON-BUILDING STRUCTURE, NOT SIMILAR TO BUILDINGS, ASCE 7, SECTION 15.7.6.
F. GEOTECHNICAL INFORMATION:
1. ALLOWABLE SOIL BEARING PRESSURE (WITHOUT PIERS): 4 KSF.
2. ALLOWABLE BEARING PRESSURE (WITH PIERS): 5 KSF.
3. UNIT WEIGHT OF PENNDOT #2A BACKFILL: 135 LB/CF.
4. AT REST PRESSURE OF PENNDOT #2A BACKFILL: 0.38 X 135 = 51.3 LB/FT. DEPTH.
5. ACTIVE SOIL PRESSURE OF PENNDOT #2A BACKFILL: 0.24 X 135 = 32.4 LB/FT. DEPTH.
- SPECIAL LOADS:
1. FLUID LOAD: 62.4 LB/FT. DEPTH.

GENERAL (CONTD.)

- STATEMENT OF SPECIAL INSPECTION:
A. SPECIAL INSPECTIONS UNDER CHAPTER 17 OF IBC2009 REQUIRED FOR THIS PROJECT TO BE PERFORMED BY THE DESIGN PROFESSIONAL OF RECORD OR CONTRACTED TO INDEPENDENT INSPECTION AGENCIES:
1. CONCRETE:
A. INSPECTION OF REINFORCING STEEL: PERIODIC.
B. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE: PERIODIC.
C. VERIFICATION OF DESIGN MIX: PERIODIC.
D. SAMPLING OF FRESH CONCRETE FOR SLUMP, AIR CONTENT, TEMPERATURE, AND MAKING SPECIMENS FOR STRENGTH TESTING: PERIODIC.
E. INSPECTION OF FORMWORK FOR SHAPE, LOCATIONS, DIMENSIONS: PERIODIC.
2. SOILS:
A. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY: PERIODIC.
B. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL: PERIODIC.
C. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIAL: PERIODIC.
D. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL: CONTINUOUS.
E. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY: PERIODIC.

FOUNDATIONS

- PERFORM ALL SITE PREPARATION AND EXCAVATION WORK IN STRICT ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY CMT LABORATORIES, INC. DATED OCTOBER 19, 2009.
- INSTALL SUBSURFACE IMPROVEMENT CONTROLLED MODULUS COLUMNS IN AREAS AS SHOWN ON THE DRAWINGS TO OBTAIN A NET ALLOWABLE BEARING CAPACITY BETWEEN 5000 AND 7000 PSF BASED ON THE GEOTECHNICAL REPORT.
- TANK FOUNDATION SLAB HAS BEEN DESIGNED FOR A SOILS BEARING CAPACITY OF 4000 PSF AND IS BASED ON THE PROJECT GEOTECHNICAL REPORT.
- SLABS AT GRADE HAVE BEEN DESIGNED FOR A SOILS NET ALLOWABLE BEARING CAPACITY OF 2500 PSF. ALL EXTERIOR FOUNDATIONS SHALL BE INSTALLED AT LEAST 42 INCHES BELOW FINAL GRADE BASED ON SOILS REPORT.
- EXCAVATE THE TANK SITE TO THE DEPTH AND EXTENT INDICATED ON THE FOUNDATION DRAWING. ALL SUBGRADES SHALL BE APPROVED IN WRITING BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STRUCTURAL FILL OR CONCRETE.
- ALL ORGANIC MATERIALS, EXCESSIVELY SOFT OR LOOSE SOILS, TREES, ASPHALT, CONCRETE, DEBRIS AND OTHER DELETERIOUS MATERIALS SHOULD BE REMOVED WITHIN AND AT LEAST 5 FEET BEYOND THE STRUCTURE LIMIT.
- AREAS REQUIRING UNDERCUT AND FILL MATERIAL DUE TO THE PRESENCE OF UNSUITABLE MATERIAL SHALL BE BACKFILLED TO THE DESIGN FOOTING SUBGRADE WITH NEW COMPACTED STRUCTURAL FILL AS RECOMMENDED IN GEOTECHNICAL REPORT.
- STRUCTURAL AND NON-STRUCTURAL FILL SHALL BE PLACED IN MAXIMUM 8 INCH LOOSE LIFTS AND BE COMPACTED ACCORDING TO GEOTECHNICAL REPORT.
- ALL SLABS SHALL BE PLACED ONLY ON A FIRM, DRY, NON-FROZEN SUBGRADE. ALL SLAB EXCAVATIONS SHALL BE REVIEWED BY A QUALIFIED FOUNDATIONS ENGINEER PRIOR TO THE PLACEMENT OF REINFORCING STEEL.
- IF REQUIRED, THE CONTRACTOR IS TO PROVIDE A DE-WATERING SYSTEM TO PREVENT SOFTENING OF SUBGRADE, FACILITATE CONTROL OF GROUND-WATER AND ALLOW CONSTRUCTION IN DRY CONDITIONS. NO EXCAVATION SHALL EXTEND CLOSER THAN 2 FEET TO GROUNDWATER LEVEL. IF THE SOIL BECOMES WET DURING EXCAVATION OR CONSTRUCTION, STOP CONSTRUCTION AND BEGIN DE-WATERING IN ORDER TO LOWER THE WATER LEVEL. ONLY RESUME EXCAVATION AND CONSTRUCTION AFTER THE GEOTECHNICAL ENGINEER HAS EXAMINED THE CONDITION AND HAS APPROVED THE RESTART OF EXCAVATION AND CONSTRUCTION.
- ALL SUBGRADES AND UNDERCUTS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. SOILS EXPOSED AT THE BASES OF ALL APPROVED FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGE IN CONDITION, SUCH AS DISTURBANCE FROM RAIN OR FROST. SURFACE RUNOFF SHOULD BE DRAINED AWAY FROM THE EXCAVATIONS AND NOT BE ALLOWED TO POND. FOUNDATION EXCAVATIONS SHOULD BE PROTECTED FROM RAINFALL OR FREEZING CONDITIONS. SLOPE FOOTING EXCAVATIONS AS REQUIRED FOR STABILITY AND SAFETY OR PROVIDE SHEETING OR SHORING IN ACCORDANCE WITH OSHA REQUIREMENTS. IN THE EVENT THAT THE CONTRACTOR DETERMINES THAT SHEETING AND SHORING IS REQUIRED FOR EXCAVATION, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER FOR DESIGN AND DOCUMENTATION OF ALL SHEETING AND SHORING REQUIRED FOR THE WORK.
- THE EXCAVATION FOR PLACEMENT OF COMPACTED STRUCTURAL FILL SHOULD EXTEND BEYOND THE EDGE OF FOOTINGS A MINIMUM DISTANCE EQUAL TO THE DEPTH OF FILL, OR AS SHOWN ON THE DRAWINGS.

CONCRETE

- ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2009 INTERNATIONAL BUILDING CODE; ACI 350 "CODE REQUIREMENTS FOR ENGINEERING CONCRETE STRUCTURES"; AND ACI-301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- NORMAL WEIGHT CONCRETE FOR ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS: TYPE I OR II PORTLAND CEMENT (ASTM C-150) MAXIMUM IN-PLACE DRY DENSITY 145 PCF 28-DAY COMPRESSIVE STRENGTH: 5000 PSI MAXIMUM WATER-CONTENT RATIO 0.40 (BY WEIGHT) MINIMUM CEMENT CONTENT 515 LBS PER CY CONCRETE MINIMUM AGGREGATE SIZE 1-1/2" INCH MAXIMUM SLUMP 3 INCHES +/- 1 INCH AIR ENTRAINMENT (ASTM C260) SPECIFIED RANGE 4.5% TO 7.5%
- CONCRETE MIX ADJUSTMENT: MIX DESIGN ADJUSTMENTS MAY BE REQUESTED BY THE CONTRACTOR WHEN CHARACTERISTICS OF MATERIALS, JOB CONDITIONS, WEATHER, TEST RESULTS OR OTHER CIRCUMSTANCES WARRANT. ADMIXTURES MAY BE USED ONLY WITH WRITTEN APPROVAL FROM THE ENGINEER.
- USE OF CALCIUM CHLORIDE IS NOT PERMITTED.
- ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 36 PREFERABLY WITH WELDABILITY SUPPLEMENT S1, BUT A36 OR A307 MAY BE SUBSTITUTED WITH THE ENGINEER'S APPROVAL. ALL ANCHORS SHALL BE PROPERLY AND ACCURATELY POSITIONED IN PIERS, WALLS OR FOOTINGS PRIOR TO THE PLACEMENT OF CONCRETE OR GROUT. EMBEDDED PORTION OF ANCHOR RODS SHALL HAVE FORMED HEADS, DOUBLE NUTS OR SINGLE NUTS SECURED TO PREVENT SPIN OFF.
- SECTIONS OF CONCRETE SLABS AND WALLS SHALL BE PLACED CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS TO PRODUCE A MONOLITHIC UNIT. AT LEAST 48 HOURS SHALL ELAPSE BETWEEN CURING OF ADJACENT SECTIONS TO ALLOW SHRINKAGE TO OCCUR PRIOR TO PLACING ADJACENT CONCRETE. ALL CONSTRUCTION JOINTS SHALL BE COATED WITH A BONDING AGENT IMMEDIATELY PRIOR TO PLACING NEXT POUR.
- THE CONCRETE TANK AS SHOWN ON THE CONTRACT DRAWINGS SHALL BE TESTED FOR WATER TIGHTNESS IN ACCORDANCE WITH ACI 350.1, "TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES". A HYDROSTATIC TEST, HST-1, FOR OPEN OR CLOSED TANKS SHALL BE PERFORMED. EACH CELL SHALL BE CONSIDERED A SINGLE TANK AND TESTED INDIVIDUALLY. THE TANK SHALL NOT BE TESTED BEFORE THE TANK'S CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH. NO OTHER TESTS SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL BY THE ENGINEER. COMPLETE TESTING SHALL INCLUDE CONCRETE TEST PLUS LINER TEST.
- CONSTRUCTION JOINTS SHALL BE USED AT THE CONTRACTOR'S DISCRETION BASED ON THE CONSTRUCTION SCHEDULE. PROPOSED CONSTRUCTION JOINT LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO CONSTRUCTION.
- WATERSTOPS SHALL BE INSTALLED AT ALL CONSTRUCTION JOINTS AND EXPANSION JOINTS.
- CONTRACTOR SHALL PROVIDE ADEQUATE BRACING FOR ALL WALLS AND PIERS AS REQUIRED DURING BACKFILLING AND COMPACTION.
- THE RECOMMENDATIONS CONTAINED IN ACI COMMITTEE REPORT 305, "HOT WEATHER CONCRETING" SHALL BE IMPLEMENTED.
- THE RECOMMENDATIONS CONTAINED IN ACI COMMITTEE REPORT 306, "COLD WEATHER CONCRETING" SHALL BE IMPLEMENTED.
- ALL REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 615, GRADE 60 DEFORMED BARS. ALL WELDED WIRE FABRIC, WWF, SHALL CONFORM TO ASTM A185.
- ALL TENSION LAP SPlicing OF REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS FOR ACI CLASS "B" SPLICES, UNLESS NOTED OTHERWISE.
- REINFORCING STEEL DIMENSIONS ARE TO THE CENTERLINE OF THE BAR UNLESS NOTED OTHERWISE. CLEAR DISTANCES ARE TO THE OUTSIDE FACE OF THE BAR.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE MINIMUM CONCRETE COVER EQUAL TO 2" TYPICAL, AND 3" CLEAR COVER FOR CONCRETE PLACED DIRECTLY ON SOIL.
- WELDING OF REINFORCEMENT IS NOT PERMITTED.
- REINFORCEMENT SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315, LATEST EDITION.
- SUPPORTS, SPACERS AND CHAIRS SHALL MEET THE REQUIREMENTS OF ACI 301 AND CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- JOINT FILLER STRIPS SHALL CONFORM TO ASTM D1751 AND D1752. JOINT SEALANT SHALL BE SIKAFLEX 1A OR APPROVED EQUAL.
- FORM MATERIALS SHALL BE OF SUFFICIENT STRENGTH AND STABILITY TO WITHSTAND PRESSURE OF PLACED CONCRETE WITHOUT BOW OR DEFLECTION. FORMS FOR EXPOSED FINISH CONCRETE SHALL BE PLYWOOD, METAL, METAL-FRAMED PLYWOOD FACED, OR OTHER ACCEPTABLE PANEL-TYPE MATERIALS, TO PROVIDE CONTINUOUS, STRAIGHT, SMOOTH, EXPOSED SURFACES. FURNISH IN LARGEST PRACTICABLE SIZES TO MINIMIZE NUMBER OF JOINTS AND TO CONFORM TO JOINT SYSTEM SHOWN ON DRAWINGS. FORM MATERIALS SHALL INCORPORATE THE HDPE WALL LINING SYSTEM AND SHALL NOT INTERFERE WITH THE PROPER PLACEMENT OF THE WALL LINING SYSTEM.
- PROVIDE COMMERCIAL FORMULATION FORM-COATING COMPOUNDS THAT WILL NOT BOND WITH, STAIN, NOR ADVERSELY AFFECT CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT TREATMENTS OF CONCRETE SURFACES.
- FORM TIES OR SPREADERS SHALL LEAVE NO METAL WITHIN 1/2" (ONE AND ONE HALF INCHES) OF EXPOSED CONCRETE SURFACE. PLUG ROD HOLES SOLID.

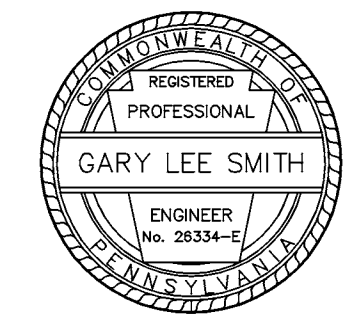
CONCRETE (CONTD.)

- NO CONCRETE SHALL BE PLACED UNTIL ALL WATER AND DEBRIS HAVE BEEN COMPLETELY REMOVED AND APPROVAL HAS BEEN GIVEN BY THE OWNER'S REPRESENTATIVE.
- PRIOR TO PLACING NEW CONCRETE OVER EXISTING CONCRETE, CONTRACTOR SHALL INTENTIONALLY ROUGHEN THE EXISTING SURFACES WHERE CONCRETE IS TO BE PLACED. APPLY APPROVED BONDING AGENT TO EXISTING CONCRETE SURFACES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- CONCRETE SHALL BE PLACED AS NEARLY AS PRACTICABLE IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO REHANDLING. IMMEDIATELY AFTER PLACING, CONCRETE SHALL BE COMPACTED BY MEANS OF MECHANICAL AGITATION TO PREVENT THE FORMATION OF VOIDS. EXTERNAL VIBRATION WILL NOT BE PERMITTED. THE PLACING OF CONCRETE SHALL BE CARRIED ON AT SUCH A RATE THAT CONCRETE AT ALL TIMES, IS PLASTIC AND FLOWS READILY INTO SPACES BETWEEN BARS. FRESH CONCRETE SHALL NOT BE PLACED ON CONCRETE, WHICH HAS ACQUIRED ITS INITIAL SET.
- ALL EXPOSED CONCRETE SURFACES SHALL BE TRUE AND EVEN, FREE FROM HONEYCOMBING, STONE POCKETS AND EXCESSIVE DEPRESSIONS, PROJECTIONS, AND AIR POCKETS.
- SLAB SHALL BE FINISHED SO NO AGGREGATE IS VISIBLE AT THE SURFACE, FLOATED TO REMOVE ALL MOISTURE, AND TROWELED TO A SMOOTH, EVEN FINISH.
- ALL SURFACES SHALL BE CURED IN ACCORDANCE WITH ACI 308 "STANDARD PRACTICE FOR CURING CONCRETE."
- FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS, PROVIDE SUPPLEMENTAL REINFORCING AROUND OPENING AS SHOWN ON THE CONTRACT DOCUMENTS.
- COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW.
- CONCRETE FORMWORK AND STEEL REINFORCEMENT SHALL ACCOUNT FOR WALL LINING SYSTEM THAT IS TO BE INTEGRAL TO THE POURING OF THE CONCRETE WALLS.

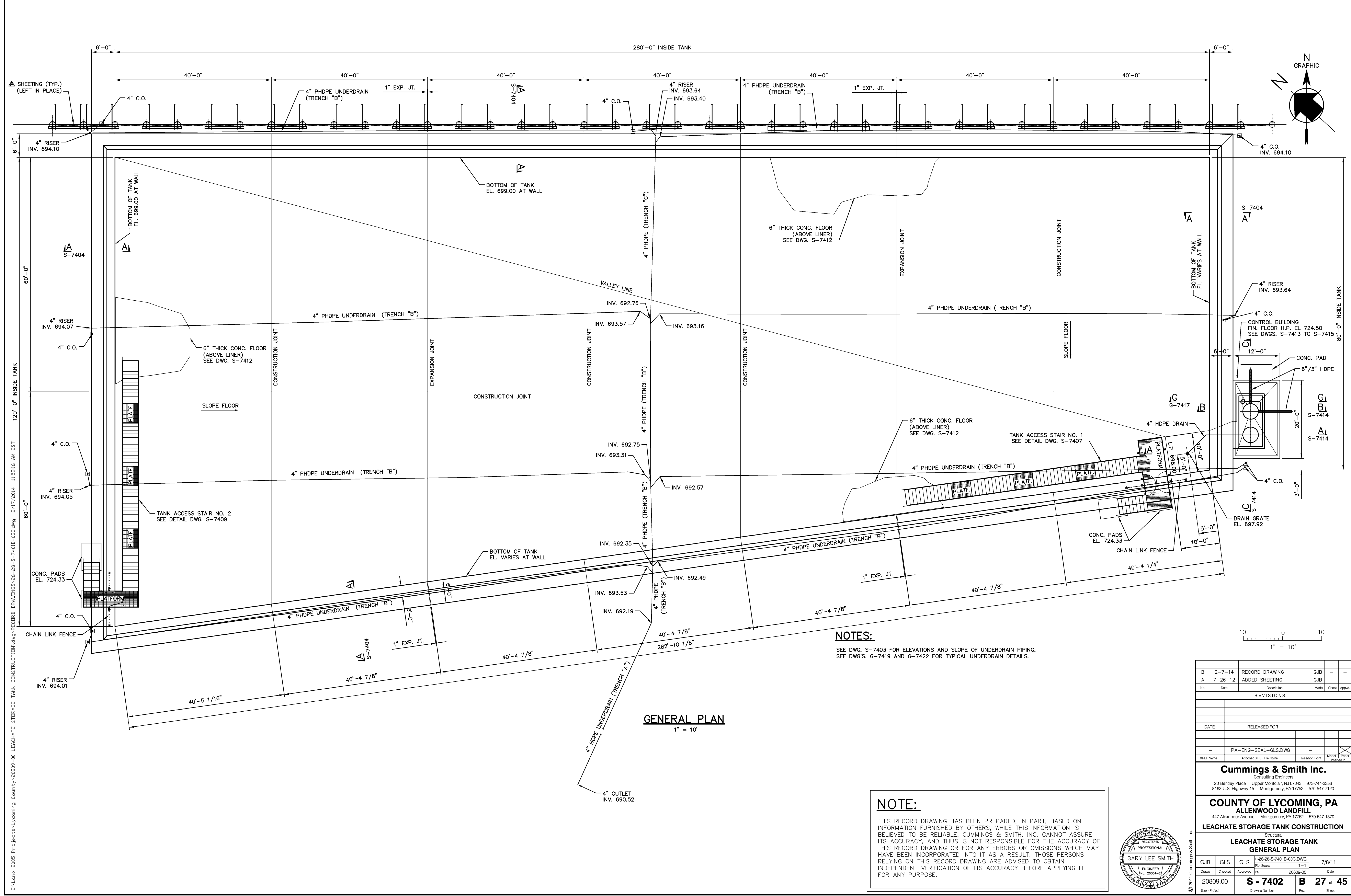
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWINGS\26-28-S-7401B-03C.dwg 2/1/2014 11:21:12 AM EST

B	2-7-14	RECORD DRAWING	GJB	--	--
A	7-26-12	REV. FOUNDATION NOTE 2	GJB	--	--
No.	Date	Description	Made	Check	App'd
REVISIONS					
DATE RELEASED FOR					
--	PA-ENG-SEAL-GLS.DWG	--	--	--	--
XREF Name	Attached XREF File Name	Insertion Point	Block	Layer	Color
Cummings & Smith, Inc. Consulting Engineers 20 Bentley Plaza Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
Structural LEACHATE STORAGE TANK STRUCTURAL NOTES					
GJB	GLS	GLS	File: 26-28-S-7401B-03C.DWG Plot Scale: 1=1'	9/8/11	
Drawn	Checked	Approved	Rev.	Date	
20809.00	S - 7401	B	26	45	
Size - Project	Drawing Number	Rev.	Sheet		

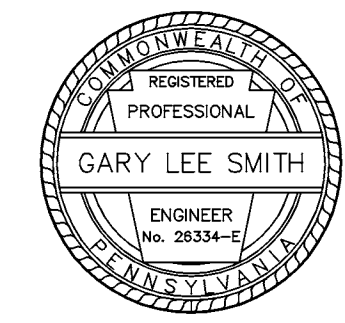


© 2011 Cummings & Smith, Inc.



NOTES:
SEE DWG. S-7403 FOR ELEVATIONS AND SLOPE OF UNDERDRAIN PIPING.
SEE DWG'S. G-7419 AND G-7422 FOR TYPICAL UNDERDRAIN DETAILS.

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



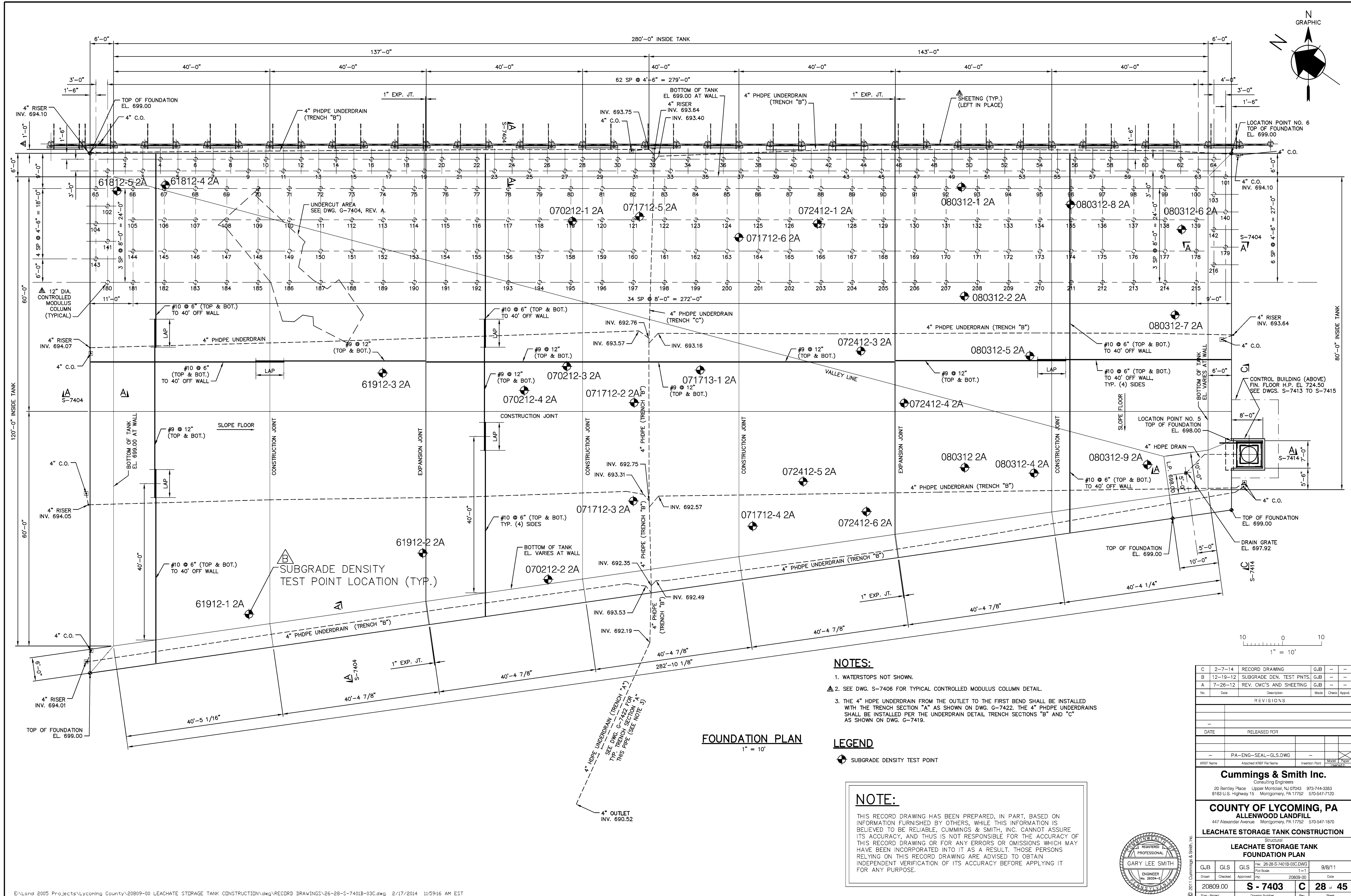
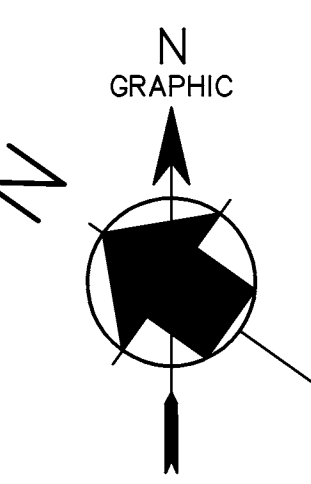
No.	Date	Description	By	Check	Appr.
B	2-7-14	RECORD DRAWING	GJB	-	-
A	7-26-12	ADDED SHEETING	GJB	-	-

DATE	RELEASED FOR
-	PA-ENG-SEAL-GLS.DWG

Drawn	Checked	Approved	Date
GJB	GLS	GLS	7/8/11

20809.00	S - 7402	B	27	45
----------	-----------------	----------	-----------	-----------

E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg RECORD DRAWING 2/7/2014 11:59:16 AM EST 2/17/2014 11:59:16 AM EST



FOUNDATION PLAN
1" = 10'

NOTES:

1. WATERSTOPS NOT SHOWN.
2. SEE DWG. S-7406 FOR TYPICAL CONTROLLED MODULUS COLUMN DETAIL.
3. THE 4" HDPE UNDERDRAIN FROM THE OUTLET TO THE FIRST BEND SHALL BE INSTALLED WITH THE TRENCH SECTION "A" AS SHOWN ON DWG. G-7422. THE 4" PHDPE UNDERDRAINS SHALL BE INSTALLED PER THE UNDERDRAIN DETAIL TRENCH SECTIONS "B" AND "C" AS SHOWN ON DWG. G-7419.

LEGEND

- SUBGRADE DENSITY TEST POINT

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	Date	Description	Made	Check	App'd.
REVISIONS					

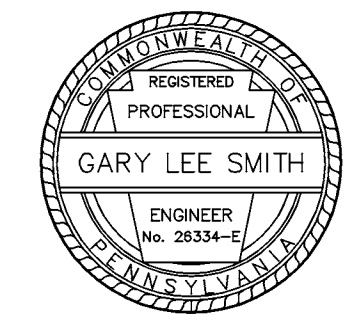
DATE	RELEASED FOR

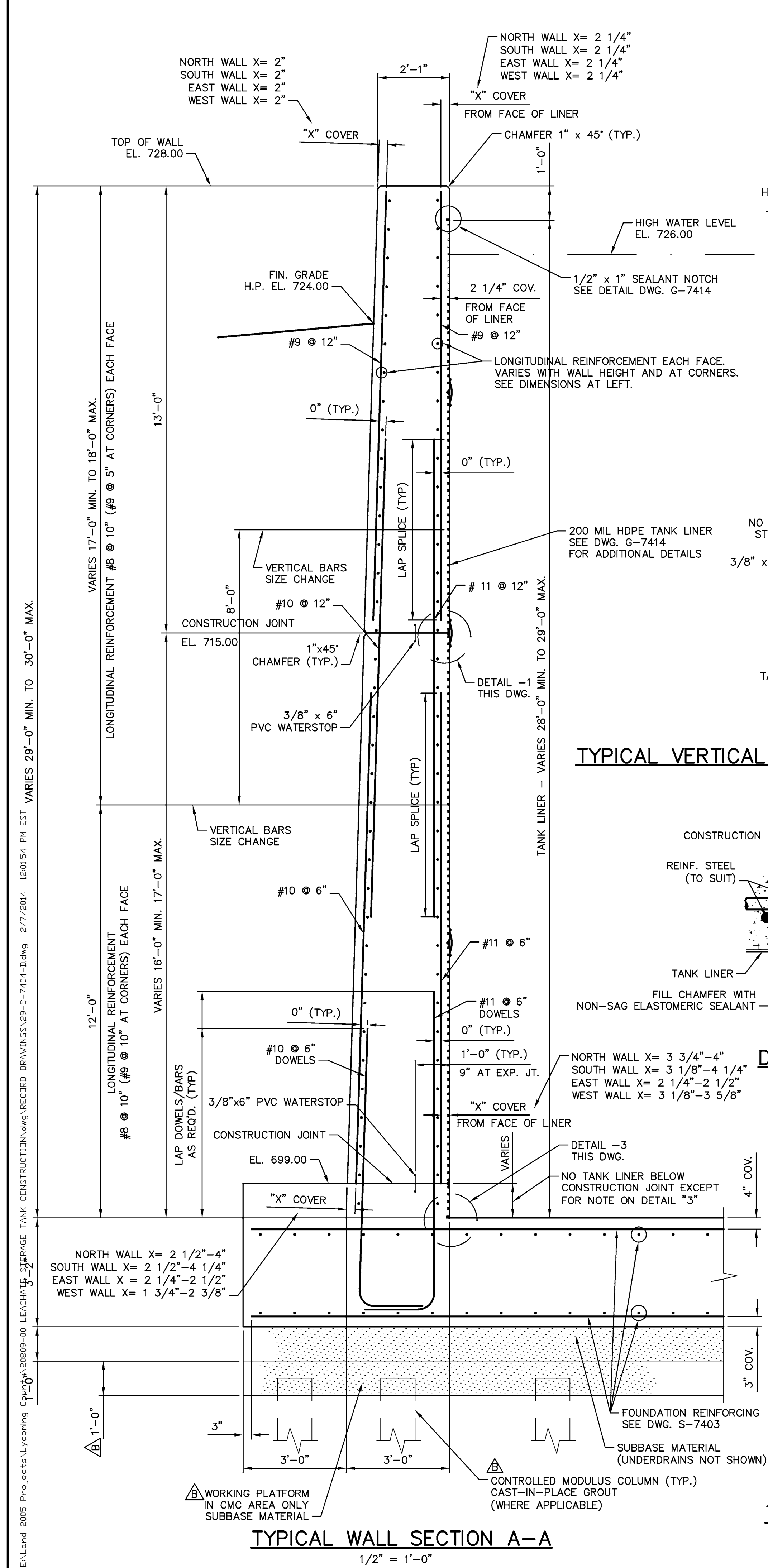
Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870
LEACHATE STORAGE TANK CONSTRUCTION

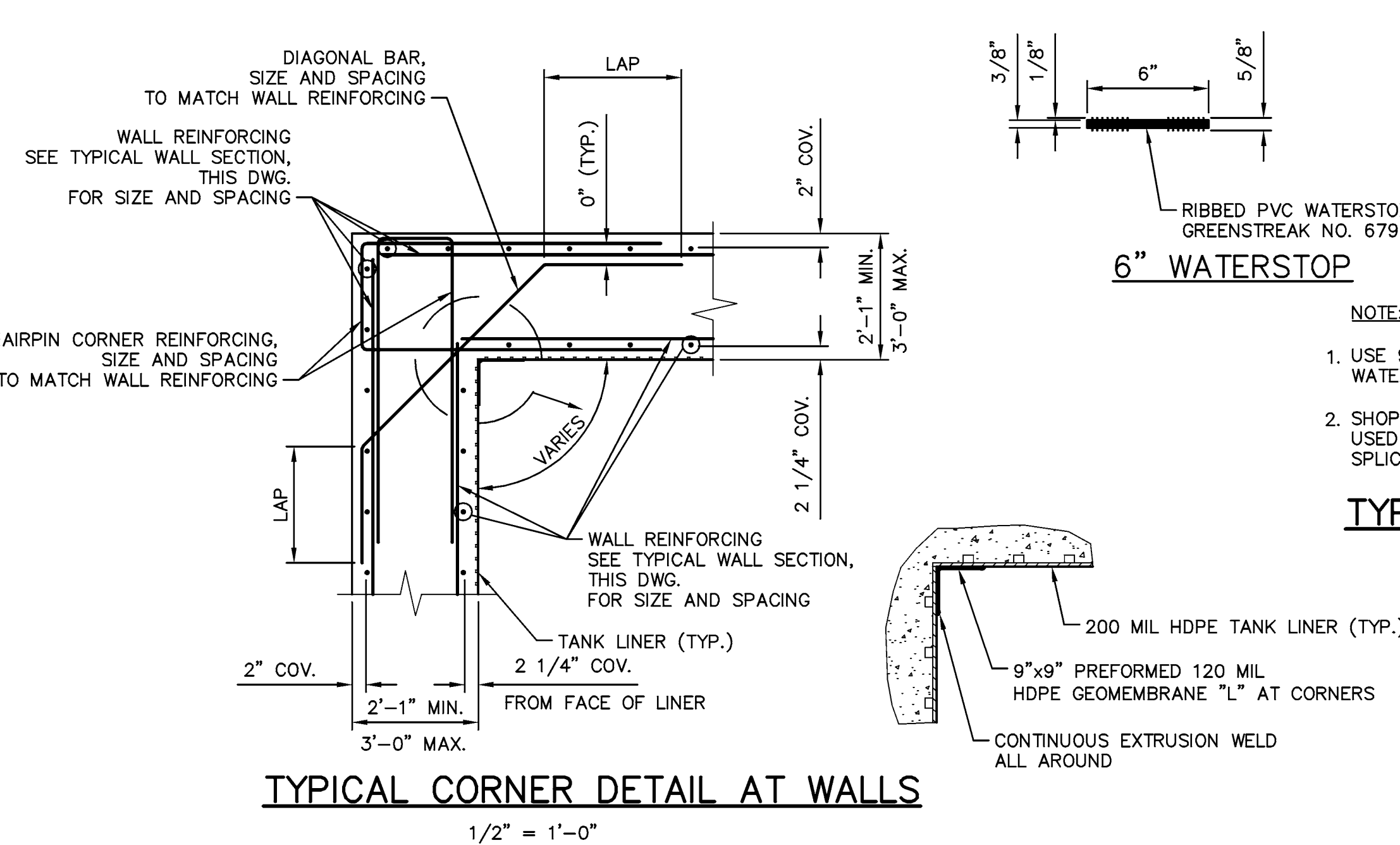
LEACHATE STORAGE TANK FOUNDATION PLAN

GJB	GLS	GLS	File: 26-28-S-7401B-03C.DWG	9/8/11
Drawn	Checked	Approved	Plot Scale: 1"=10'	Date
20809.00			20809.00	
Size: Project	Drawing Number	Rev.	Sheet	
	S - 7403	C	28	45

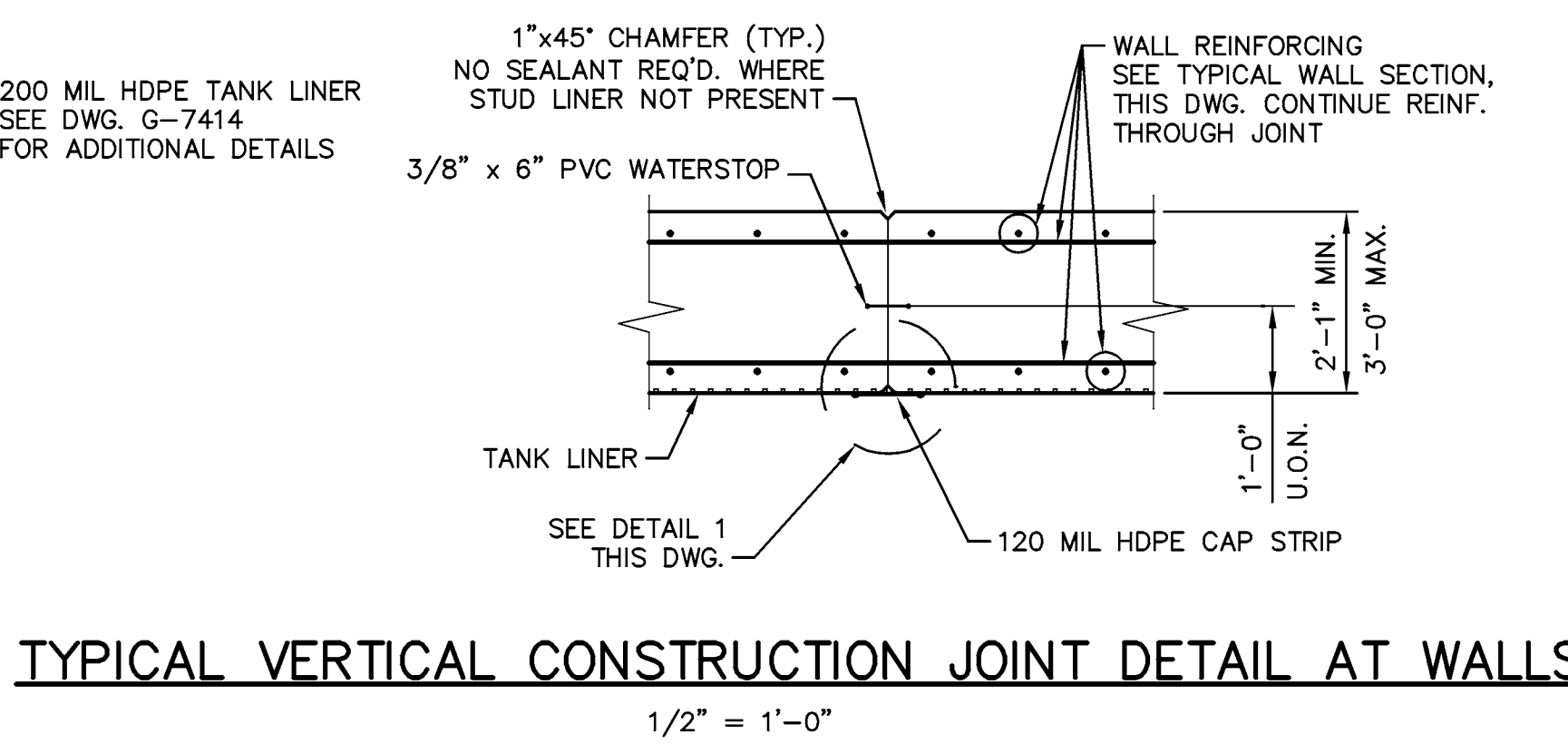




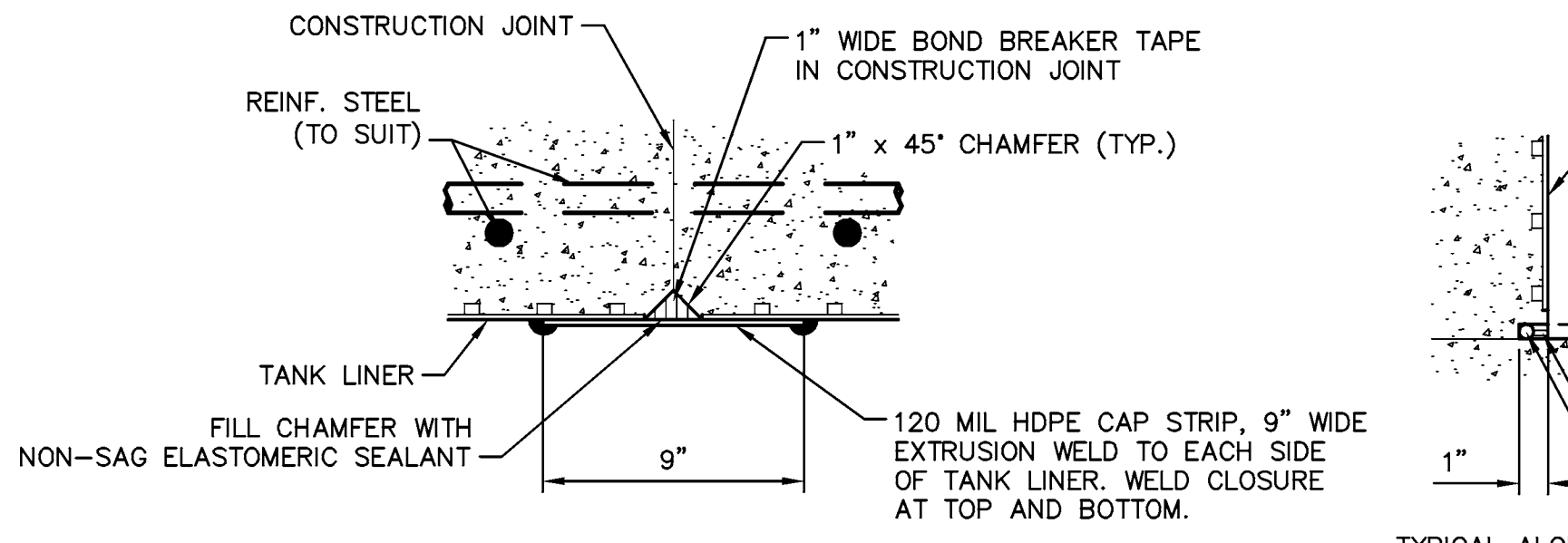
TYPICAL WALL SECTION A-A
1/2" = 1'-0"



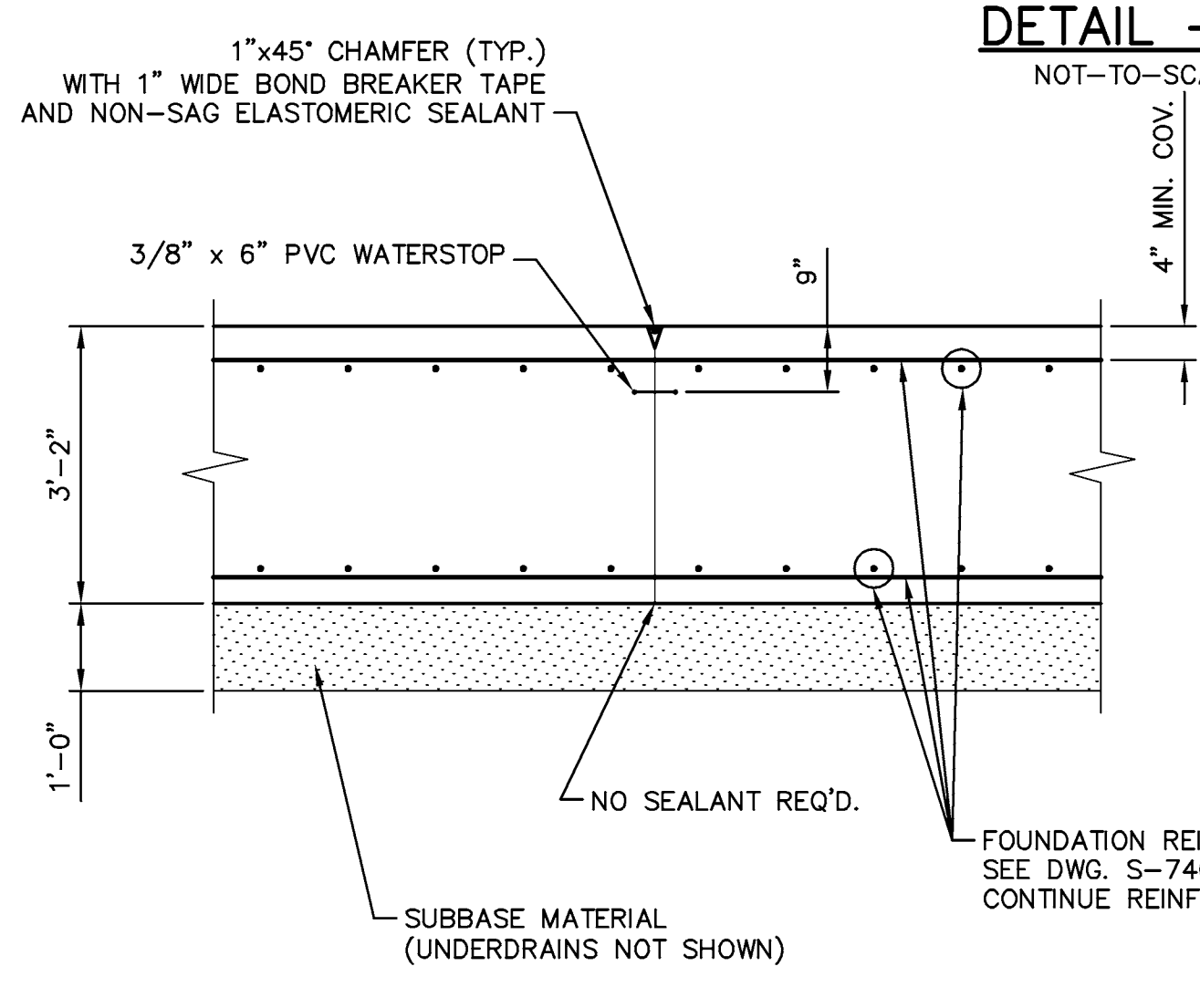
TYPICAL CORNER DETAIL AT WALLS
1/2" = 1'-0"



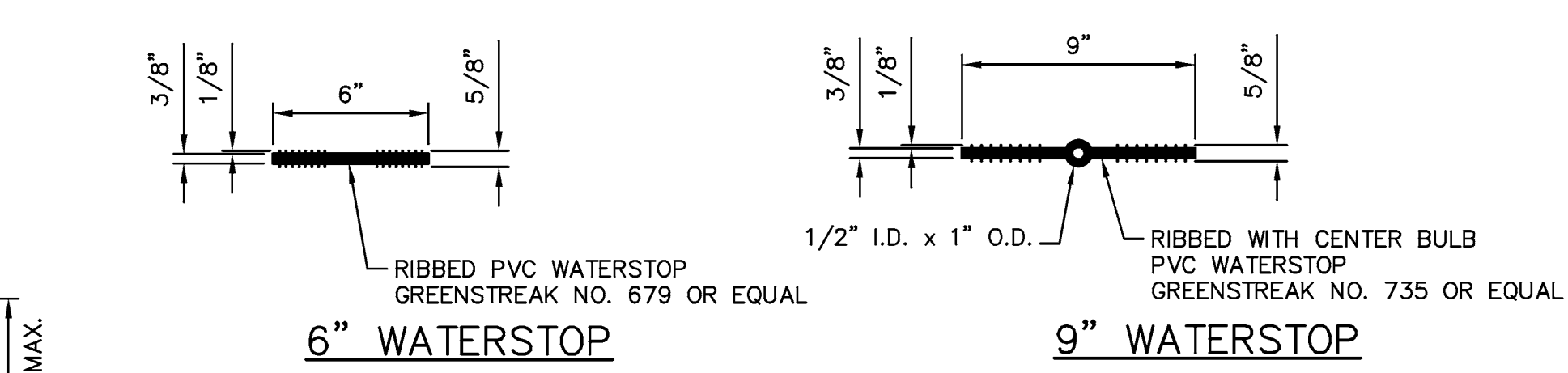
TYPICAL VERTICAL CONSTRUCTION JOINT DETAIL AT WALLS
1/2" = 1'-0"



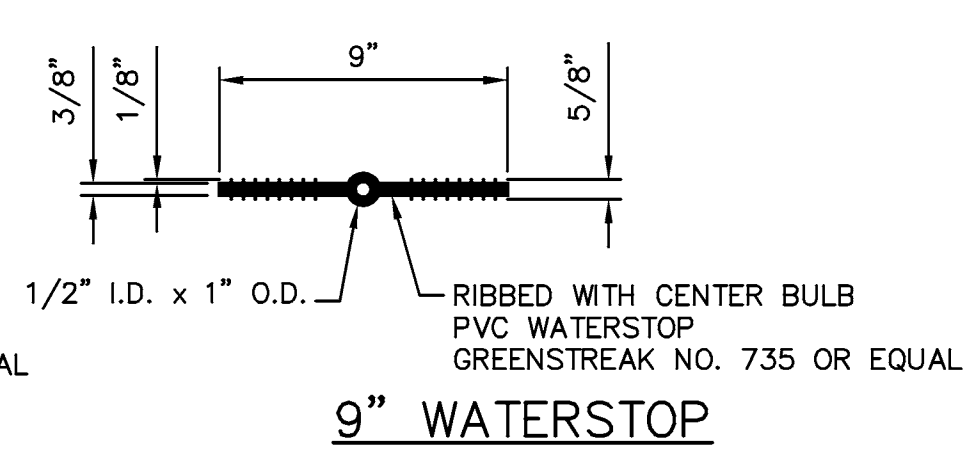
DETAIL - 1
NOT-TO-SCALE



TYPICAL HORIZONTAL CONSTRUCTION JOINT AT FOUNDATION
1/2" = 1'-0"



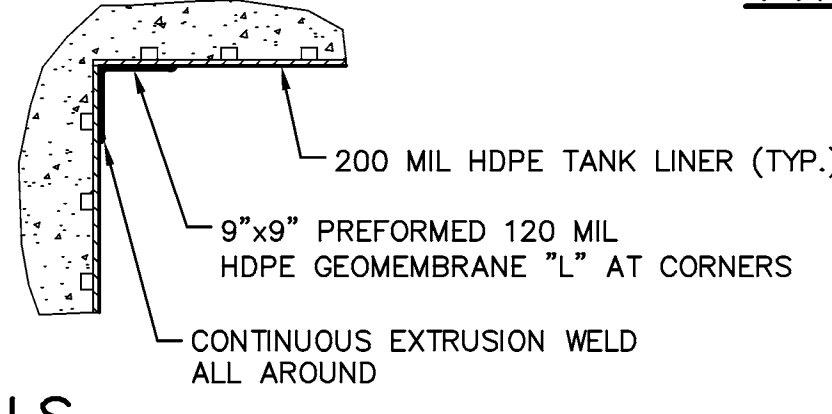
6" WATERSTOP



9" WATERSTOP

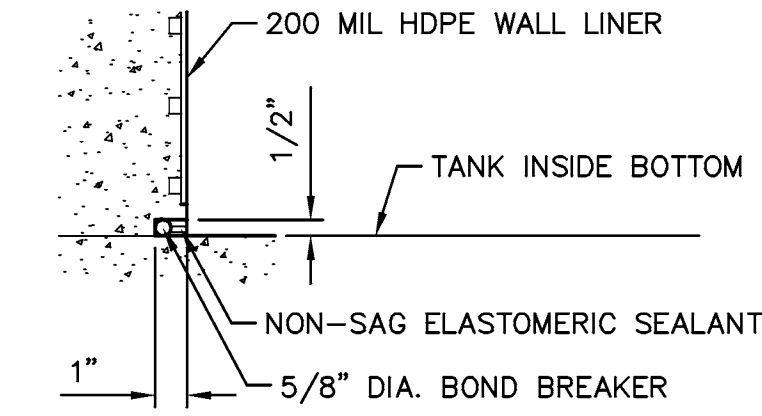
- NOTE:
- USE 9" WATERSTOPS AT ALL EXPANSION JOINTS. USE 6" WATERSTOPS AT ALL CONSTRUCTION JOINTS.
 - SHOP FABRICATED ELL'S, TEES AND CROSSES SHALL BE USED AT ALL INTERSECTIONS. ONLY STRAIGHT BUTT SPLICES SHALL BE MADE IN THE FIELD.

TYPICAL WATERSTOP DETAIL
NOT-TO-SCALE

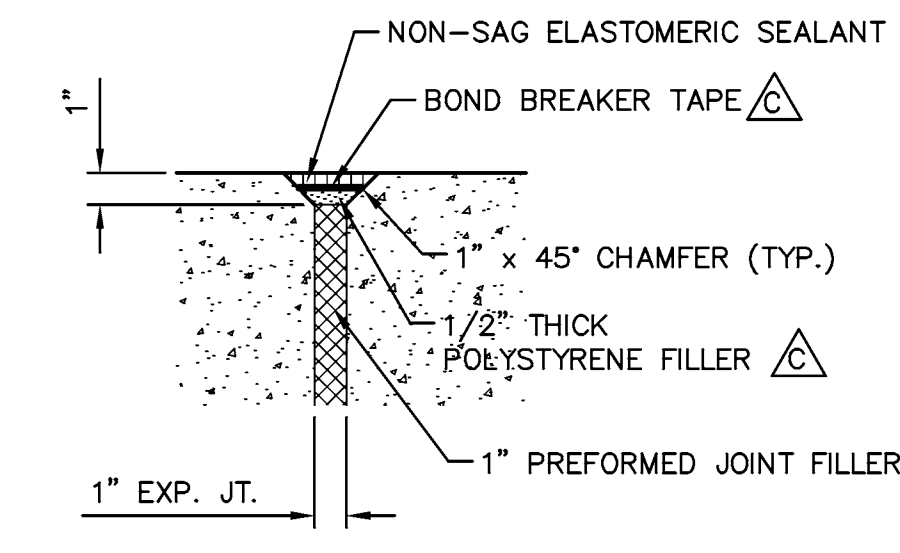


TANK LINER NOTES:

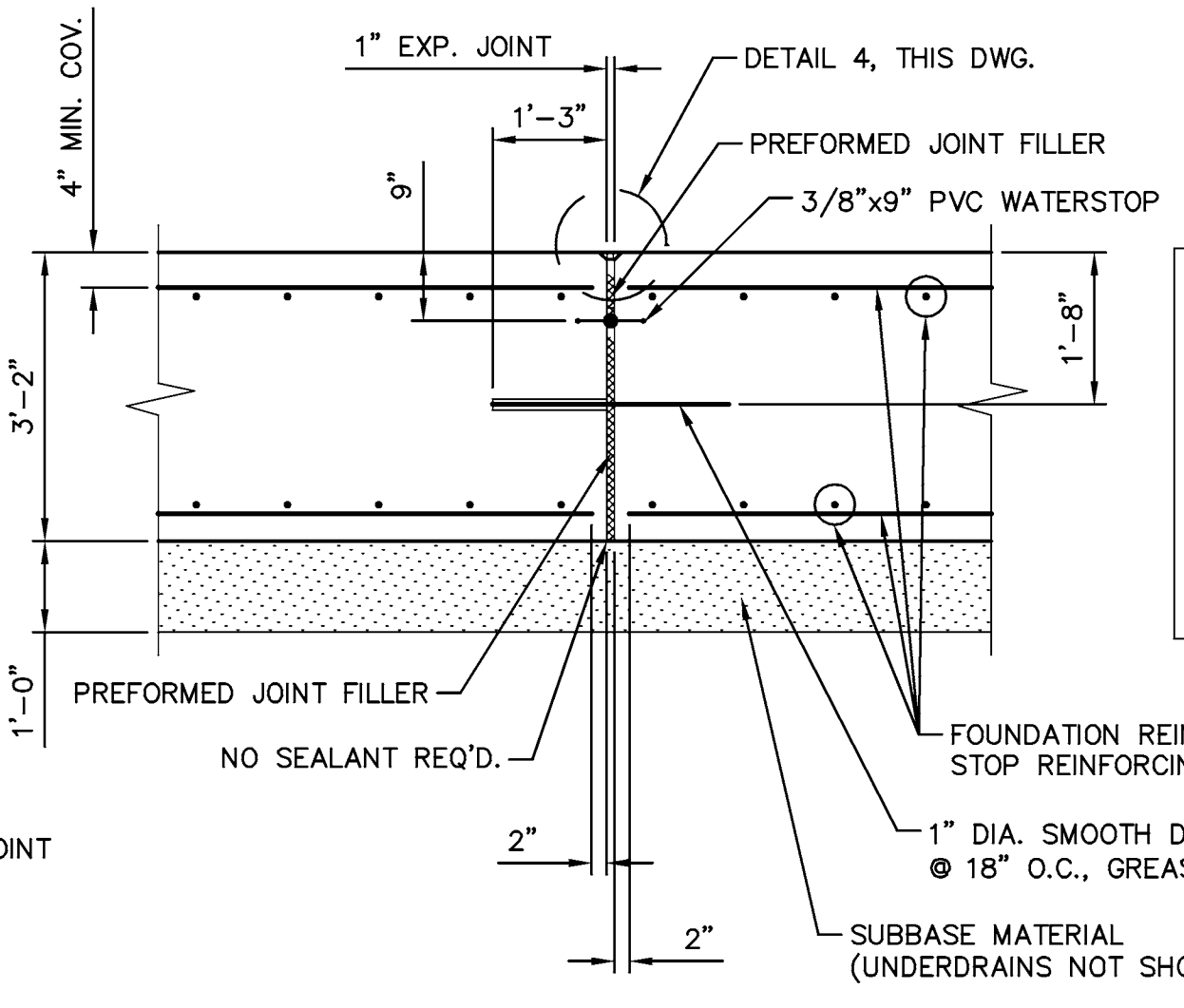
- TANK WALL LINER SHALL BE 200 MIL HDPE STUDLINER AS MANUFACTURED BY GSE LINING TECHNOLOGY, INC. OR EQUAL.
- THE WALL LINER SHALL BE ATTACHED TO THE FORMWORK WITH THE STUDS POINTED TO THE CONCRETE AND THE CONCRETE POURED AGAINST THE LINER.
- ALL HORIZONTAL AND VERTICAL SEAMS SHALL BE CONTINUOUS EXTRUSION WELDED IN THE FIELD. SEAMS AT ALL CONSTRUCTION AND EXPANSION JOINTS SHALL HAVE A 120 MIL HDPE CAP STRIP EXTRUSION WELDED AT EACH SIDE OF THE SEAM AS SHOWN ON THIS DWG. THE TOP AND BOTTOM OF THE CAP SHALL ALSO BE WELDED TO PROVIDE A WATERTIGHT SEAM.
- ALL NAILS OR OTHER CONNECTORS USED FOR ATTACHMENT TO THE CONCRETE FORMS SHALL BE REMOVED AND THE HOLES IN WALL LINER REPAIRED BY EXTRUSION WELDING OR CAPPED WITH 120 MIL LINER.
- ALL SEAMS SHALL BE SEAM TESTED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
- THE BOTTOM LINER SYSTEM AND 6" CONCRETE WEAR SLAB IS NOT SHOWN. SEE DWGS. G-7414 AND S-7412.
- PROTECT HDPE WALL LINER AND HDPE GEOMEMBRANE FLOOR LINER FROM SUNLIGHT WITH OPAQUE TARP OR OTHER OPAQUE COVERING AT ALL TIMES DURING CONSTRUCTION EXCEPT WHEN ACTIVELY WORKING ON THOSE ELEMENTS.



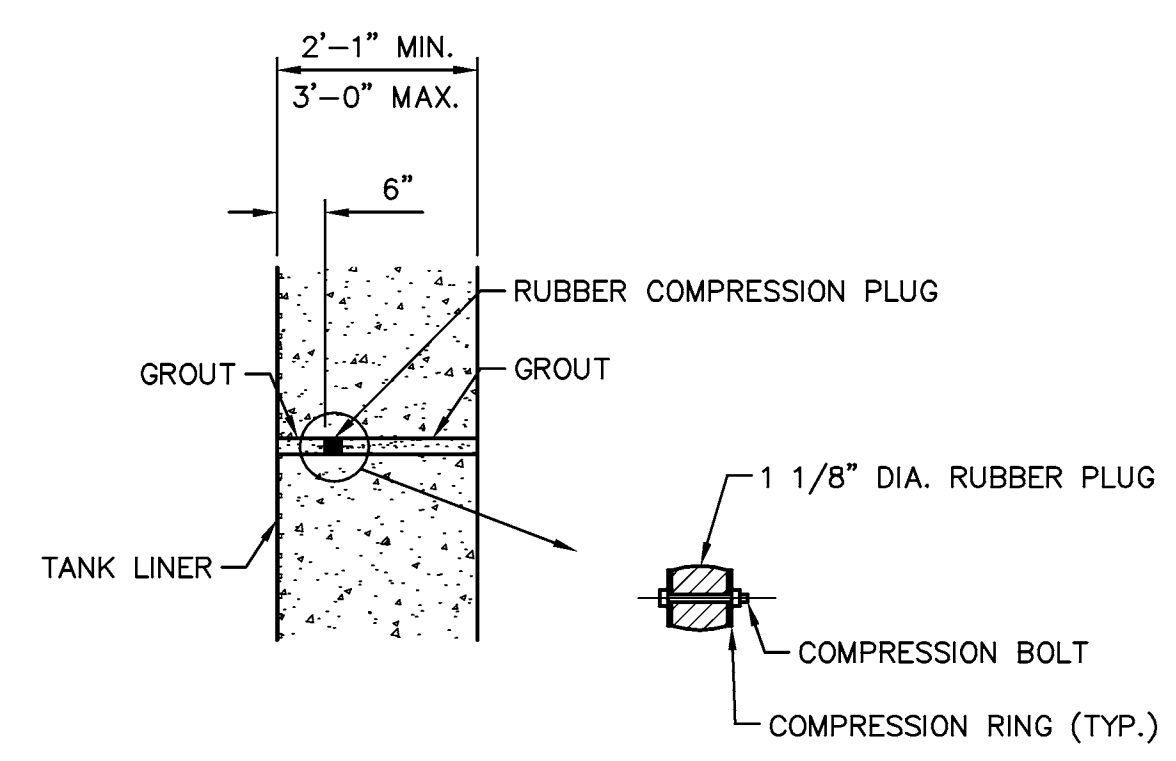
DETAIL - 3
NOT-TO-SCALE



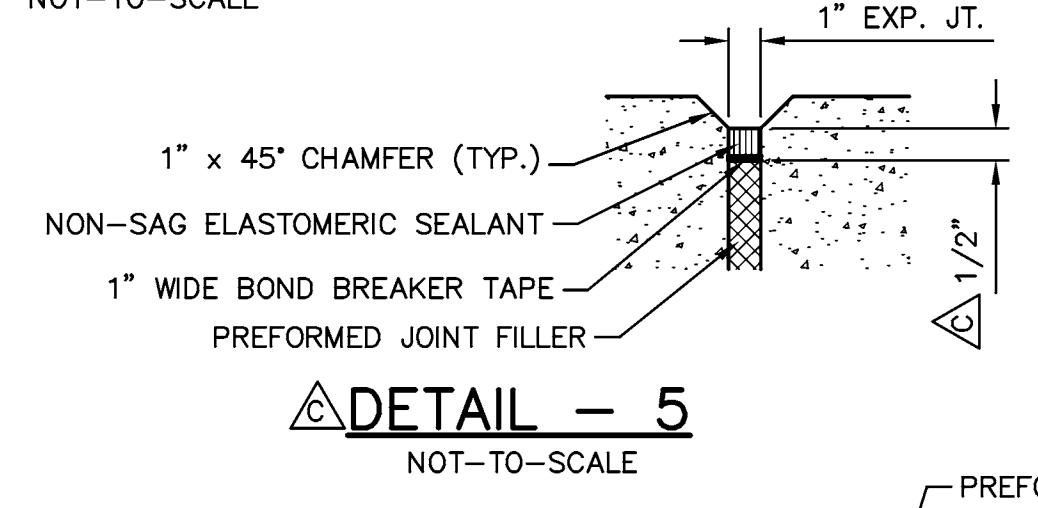
DETAIL - 4
NOT-TO-SCALE



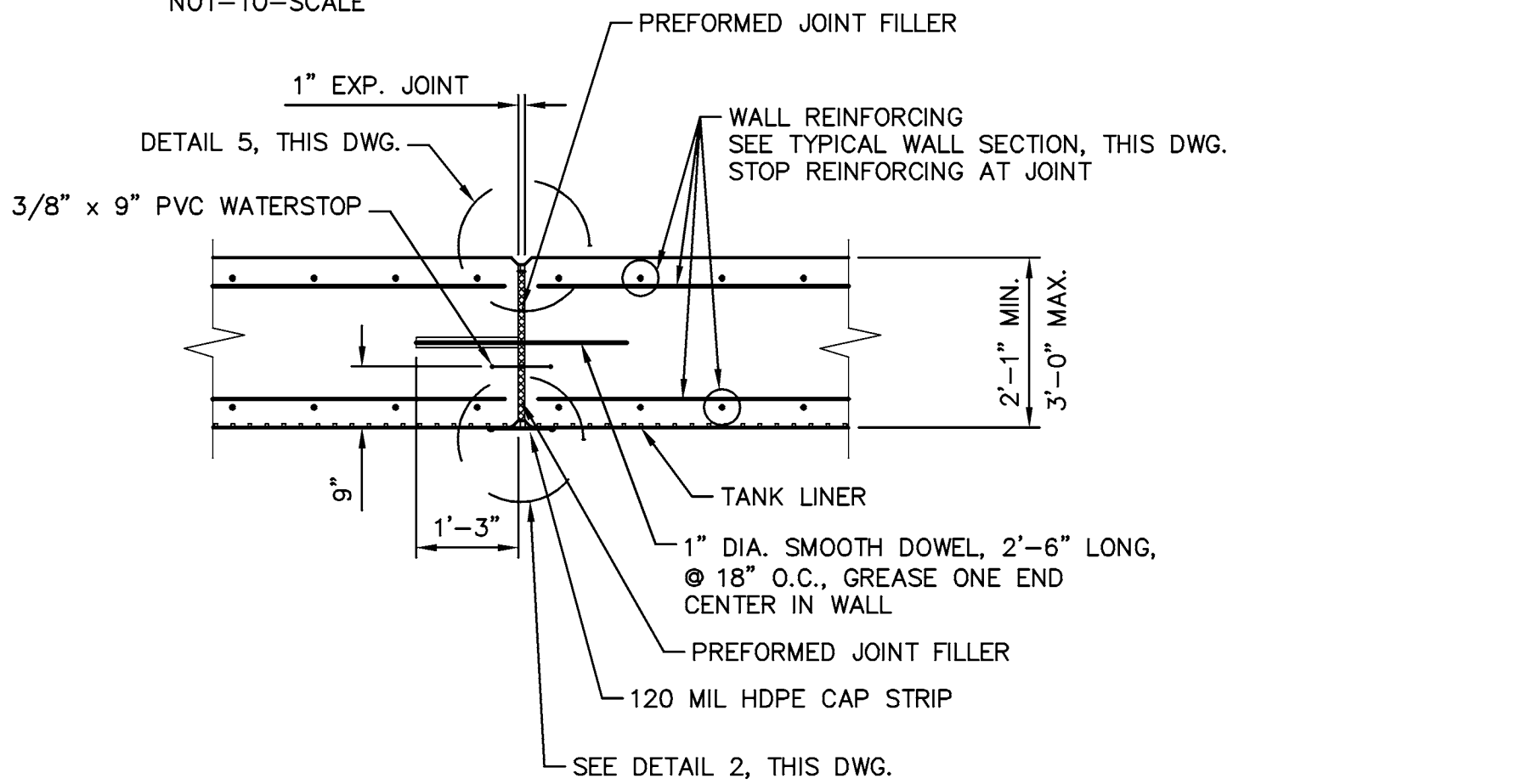
TYPICAL HORIZONTAL EXPANSION JOINT AT FOUNDATION
1/2" = 1'-0"



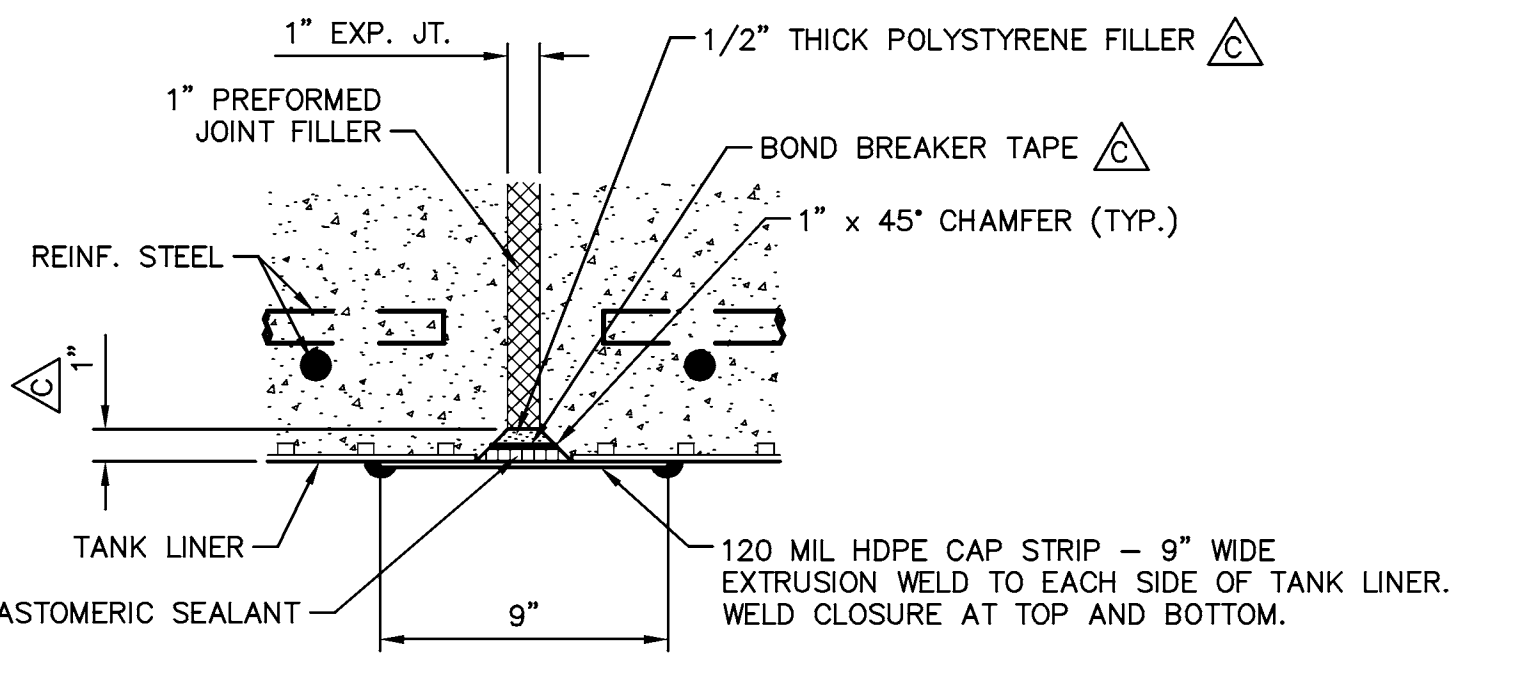
TAPER TIE HOLE REPAIR
NOT-TO-SCALE



DETAIL - 5
NOT-TO-SCALE

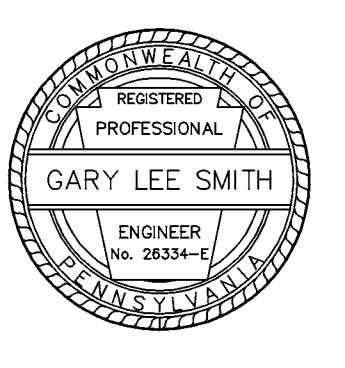


TYPICAL VERTICAL EXPANSION JOINT DETAIL AT WALLS
1/2" = 1'-0"



DETAIL - 2
NOT-TO-SCALE

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Made	Checked	Approved
D	2-7-14	RECORD DRAWING	GJB		
C	12-20-12	MODIFIED DETAILS 2, 4 & 5	GJB		
B	07-26-12	ADDED CMC'S	GJB		
A	02-08-12	CLARIFIED WALL STEEL	GLS	GLS	GLS

REVISIONS

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

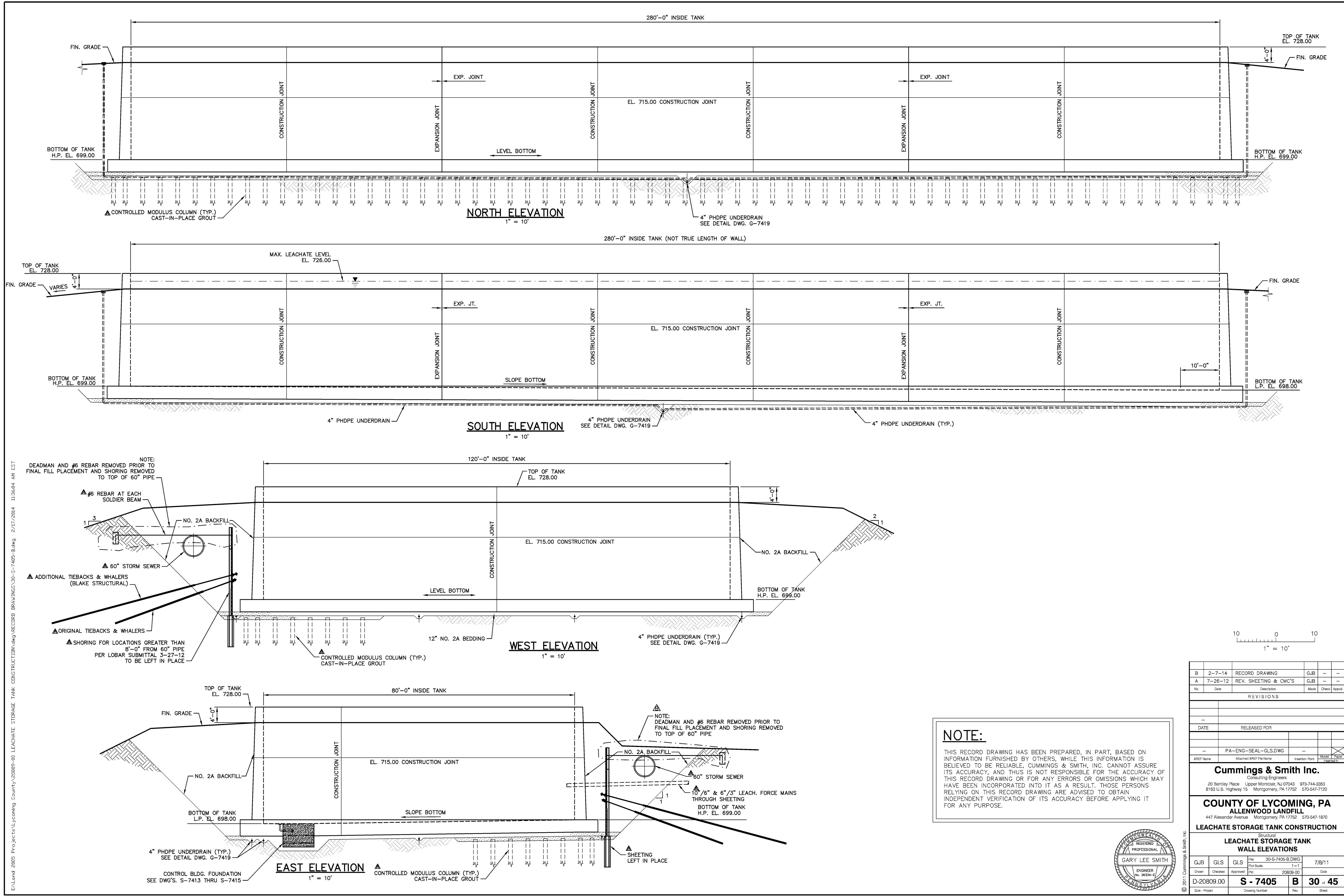
COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION

Structural
LEACHATE STORAGE TANK WALL SECTIONS

GJB	GLS	GLS	File: 29-S-7404-D.DWG	9/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
20809.00			20809.00	
Size: Project	Drawing Number	Rev.	Sheet	
	S - 7404	D	29	45

© 2012 Cummings & Smith, Inc.



E:\land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION\dwg\RECORD DRAWINGS\30-5-7405-B.dwg 2/17/2014 11:36:04 AM EST

NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	Date	Description	Made	Check	App'd.
B	2-7-14	RECORD DRAWING	GJB	-	-
A	7-26-12	REV. SHEETING & CMC'S	GJB	-	-

REVISIONS

DATE RELEASED FOR

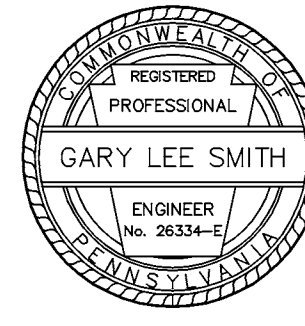
PA-ENG-SEAL-GLS.DWG

Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

Drawn	Checked	Approved	Rev.	Date
D-20809.00				20809-00

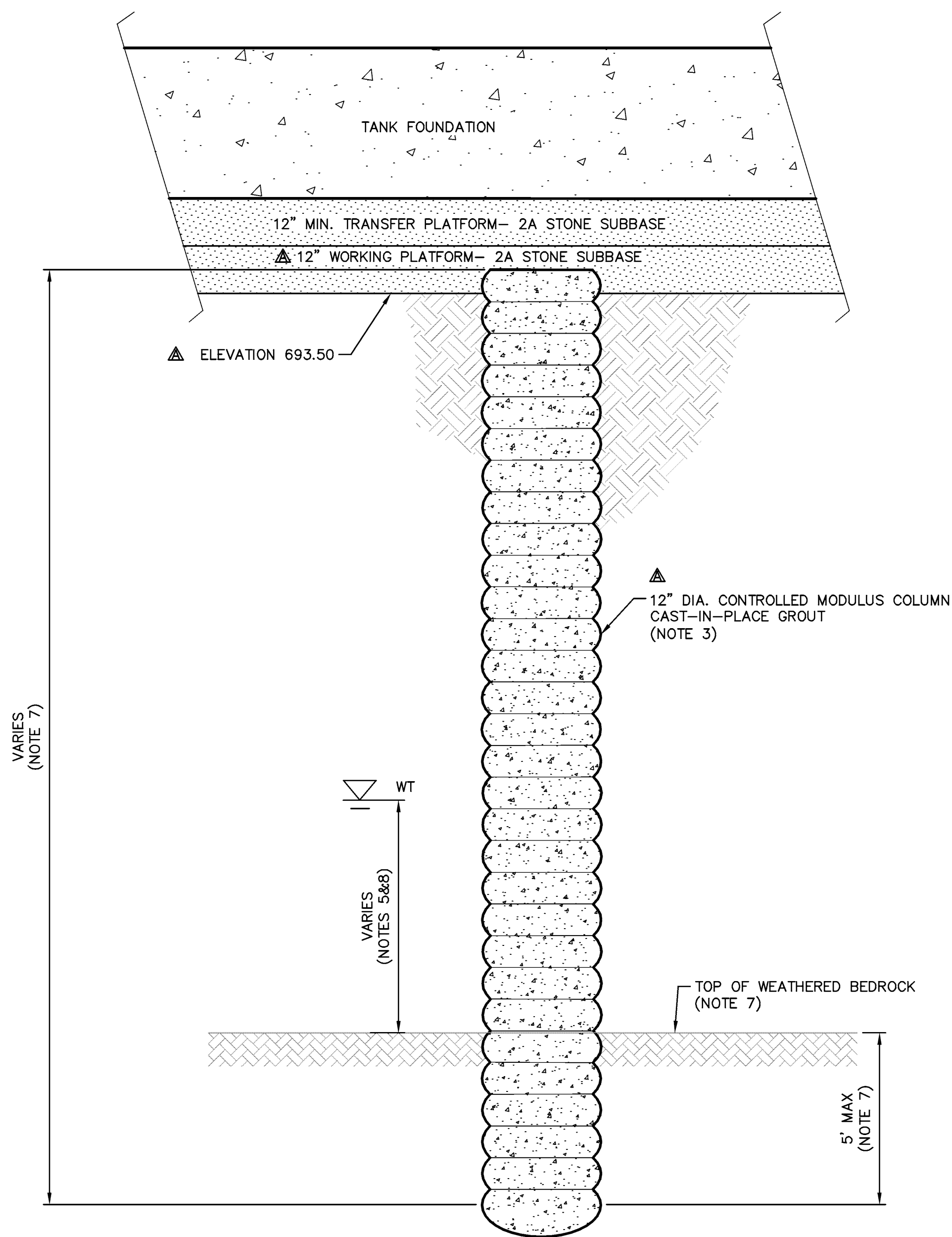
Size - Project: Drawing Number: Rev. Sheet



© 2011 Cummings & Smith, Inc.

▲ CONTROLLED MODULUS COLUMN NOTES:

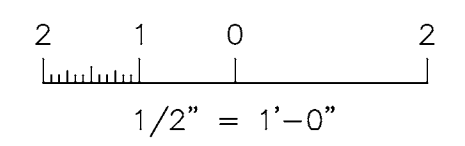
1. CONTROLLED MODULUS COLUMNS (CMC'S) AND GEOTECHNICAL REPORT COMPLETED BY CMT LABORATORIES, INC. GEOTECHNICAL REPORT PROVIDED IN PROJECT SPECIFICATIONS. CMC'S DESIGNED BY MENARD GROUND IMPROVEMENT SPECIALISTS.
2. A TOTAL OF 215 CMC'S AT VARYING GRID SPACINGS HAVE BEEN DESIGNED FOR THIS PROJECT. SPACING, LOCATION AND LAYOUT OF THE PIERS SHOWN ON DRAWING S-7403.
3. CMC'S SHALL BE INSTALLED WITHIN 6 INCHES OF THE LOCATIONS SHOWN ON DRAWING S-7403.
4. CMC'S SHALL HAVE A MINIMUM SUBGRADE MODULUS OF 350 PSI/INCH.
5. CMC'S SHALL HAVE A COEFFICIENT OF PERMEABILITY LESS THAN THE SURROUNDING SOILS WITHIN 7 DAYS OF INSTALLATION AND SHALL NOT BE CAPABLE OF TRANSMITTING LEACHATE TO THE UNDERLYING GROUNDWATER TABLE AND SHALL NOT ACT AS A WICK TO ALLOW GROUNDWATER TO RISE WITHIN THE PIER DUE TO ARTESIAN CONDITIONS.
6. CMC'S SHALL BE A MINIMUM OF 12 INCHES IN DIAMETER AND CONSIST OF CAST-IN-PLACE GROUT HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.
7. TERMINATE CMC'S ONLY AFTER ENCOUNTERING REFUSAL ON WEATHERED SHALE BEDROCK AT ELEVATIONS RANGING BETWEEN 673' AND 685'. CMC'S SHALL BE EXTENDED TO REFUSAL ON THE UNDERLYING WEATHERED SHALE BEDROCK AND SHALL NOT EXTEND GREATER THAN 5 FEET INTO THE WEATHERED SHALE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR DESIGNATED REPRESENTATIVE.
8. PERCHED AND ARTESIAN GROUNDWATER CONDITIONS WILL BE ENCOUNTERED AND SHALL BE CONSIDERED DURING INSTALLATION.
9. TOP OF CMC'S SHALL TERMINATE AT AN ELEVATION OF 694.00'.
10. TWO (2) SACRIFICIAL CMC'S SHALL BE SUBJECTED TO SPREAD FOOTING LOAD TESTS (ASTM D1194) PRIOR TO THE INSTALLATION OF PRODUCTION PIERS. THE LOCATION OF THE SACRIFICIAL TEST CMC'S SHALL BE DETERMINED BY THE ENGINEER AND GEOTECHNICAL ENGINEER PRIOR TO MOBILIZATION. THE LOAD TESTS SHALL PROVE THAT THE GROUTED STONE PIERS HAVE A MINIMUM MODULUS OF SUBGRADE REACTION OF 350 PSI/INCH WITHIN 7 DAYS OF PLACEMENT. FAILURE TO MEET THIS SPECIFICATION WILL RESULT IN CHANGES TO THE STONE PIER DESIGN AS DETERMINED BY THE ENGINEER AND GEOTECHNICAL ENGINEER.
11. ALL CMC'S SHALL BE INSTALLED WITH THE SAME METHODOLOGY AS IMPLEMENTED DURING THE INSTALLATION OF SUCCESSFUL SACRIFICIAL LOAD TEST PIERS.
12. CM'S SHALL ONLY BE INSTALLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEERING REPRESENTATIVE.
13. THE CMC CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCURATE LOGS WITH THE FOLLOWING MINIMUM INFORMATION AVAILABLE BY THE END OF EACH WORKING DAY: PIER LOCATION NUMBER, DIAMETER, START/FINISH TIME, TOP OF PIER ELEVATION, DEPTH OF TREATMENT, STONE AND GROUT QUANTITIES, GROUNDWATER CONDITIONS, AND REFUSAL/COMPACTION MONITORING PROCEDURES.
14. ALL OBSTRUCTIONS ENCOUNTERED PRIOR TO REACHING TERMINATION UPON THE WEATHERED SHALE BEDROCK SHALL BE REMOVED IN A TIMELY MANNER. THE DECISION TO ABANDON A DESIGN GROUTED STONE PIER LOCATION AND/OR ADD GROUTED STONE PIERS SHALL BE DETERMINED BY THE ENGINEER AND GEOTECHNICAL ENGINEER.
15. ANY UTILITIES THAT WILL INTERSECT THE 1:1 ZONE OF INFLUENCE OUTSIDE OF THE PERIMETER CMC'S SHALL BE REVIEWED BY THE ENGINEER AND GEOTECHNICAL ENGINEER PRIOR TO EXCAVATION IN THE FIELD.



▲ TYPICAL CONTROLLED MODULUS COLUMN DETAIL
NOT-TO-SCALE

NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC., CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



B	2-7-14	RECORD DRAWING	GJB	-	-
A	7-27-12	ADDED CMC'S	GJB	-	-

REVISIONS

No.	Date	Description	Made	Check	App'd
-	-	-	-	-	-

DATE RELEASED FOR

--	--	--	--	--	--

Attached XREF File Name: _____
 Invention Point: _____
 Model: _____
 Project: _____

Cummings & Smith, Inc.
 Consulting Engineers
 20 Bentley Place Upper Merion, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

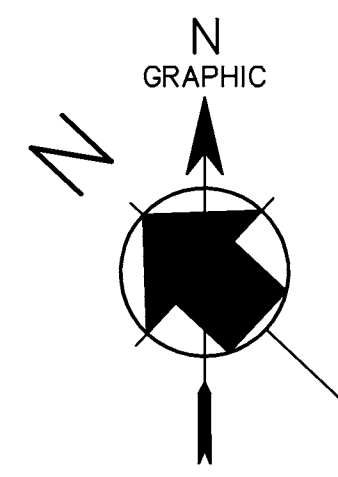
Geotechnical Engineer
CMT Laboratories, Inc.
 2701 Carleian Industrial Drive State College, PA 16801 814-231-8845

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
 Structural
LEACHATE STORAGE TANK
MISCELLANEOUS DETAILS

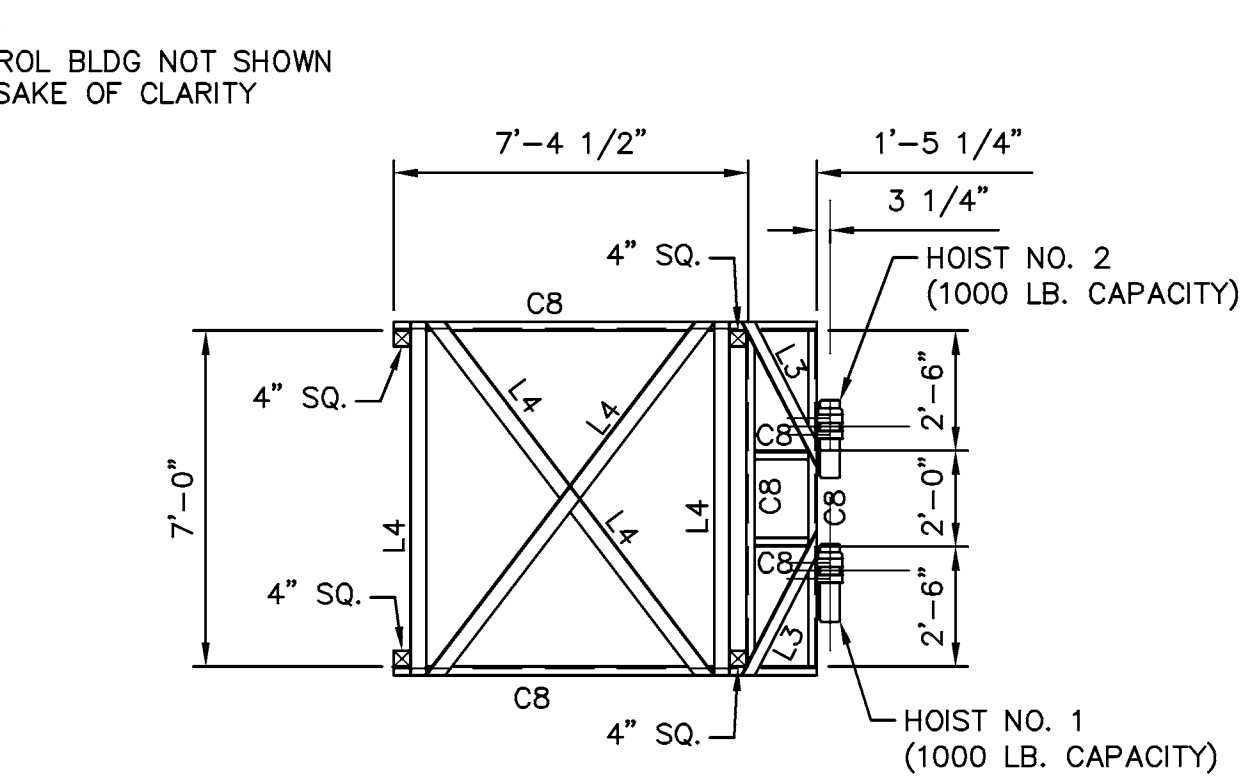
SEH	SEH	SEH	File: 31-S-7406-B.DWG	7/8/10
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
20809.00			20809.00	

Size - Project: **S - 7406** Drawing Number: **B 31** of **45** Rev. Sheet



A
S-7407

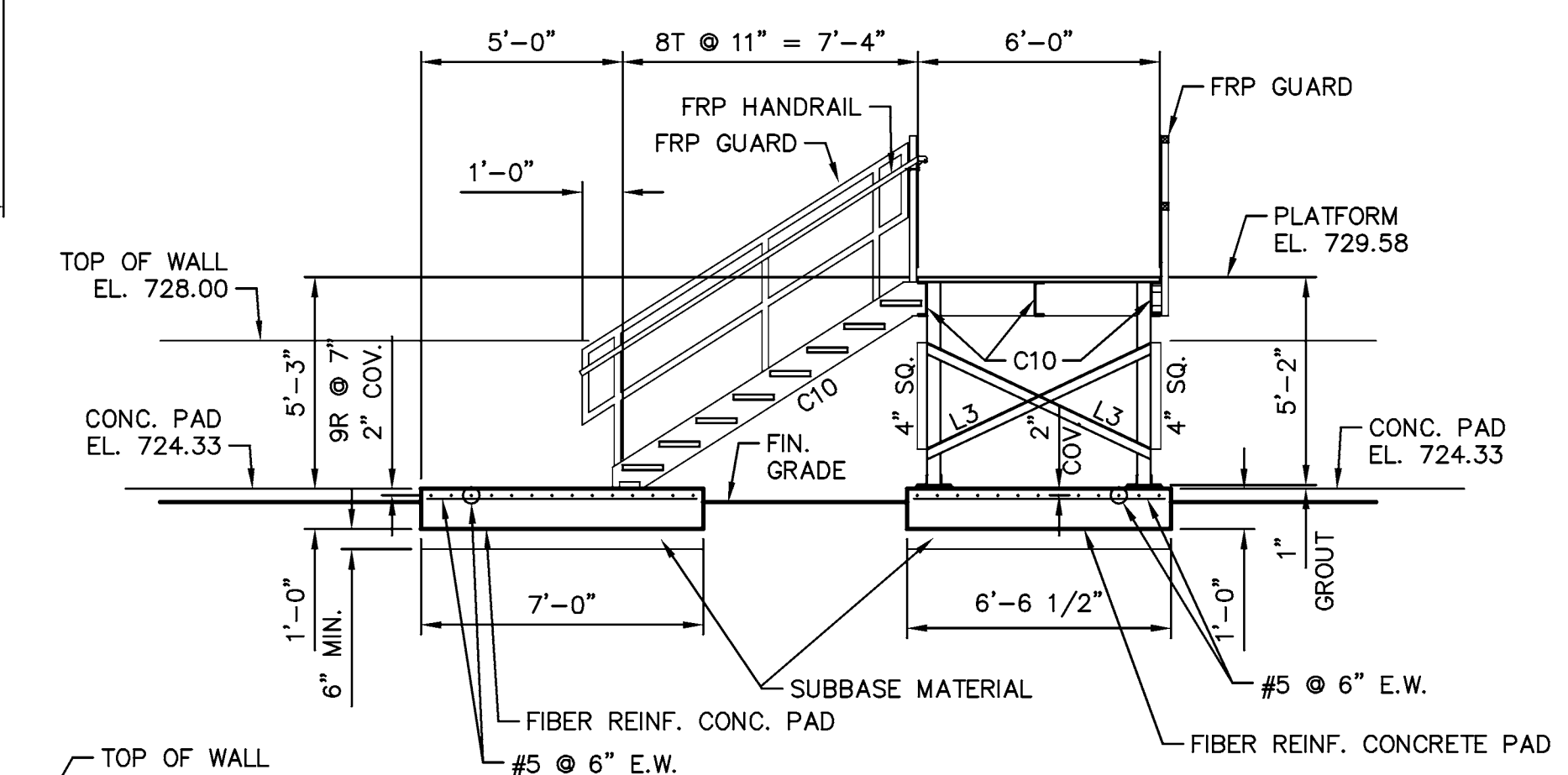
A



PLAN AT TOP OF HOIST FRAME
1/4" = 1'-0"

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

PLAN - STAIR NO. 1
1/4" = 1'-0"



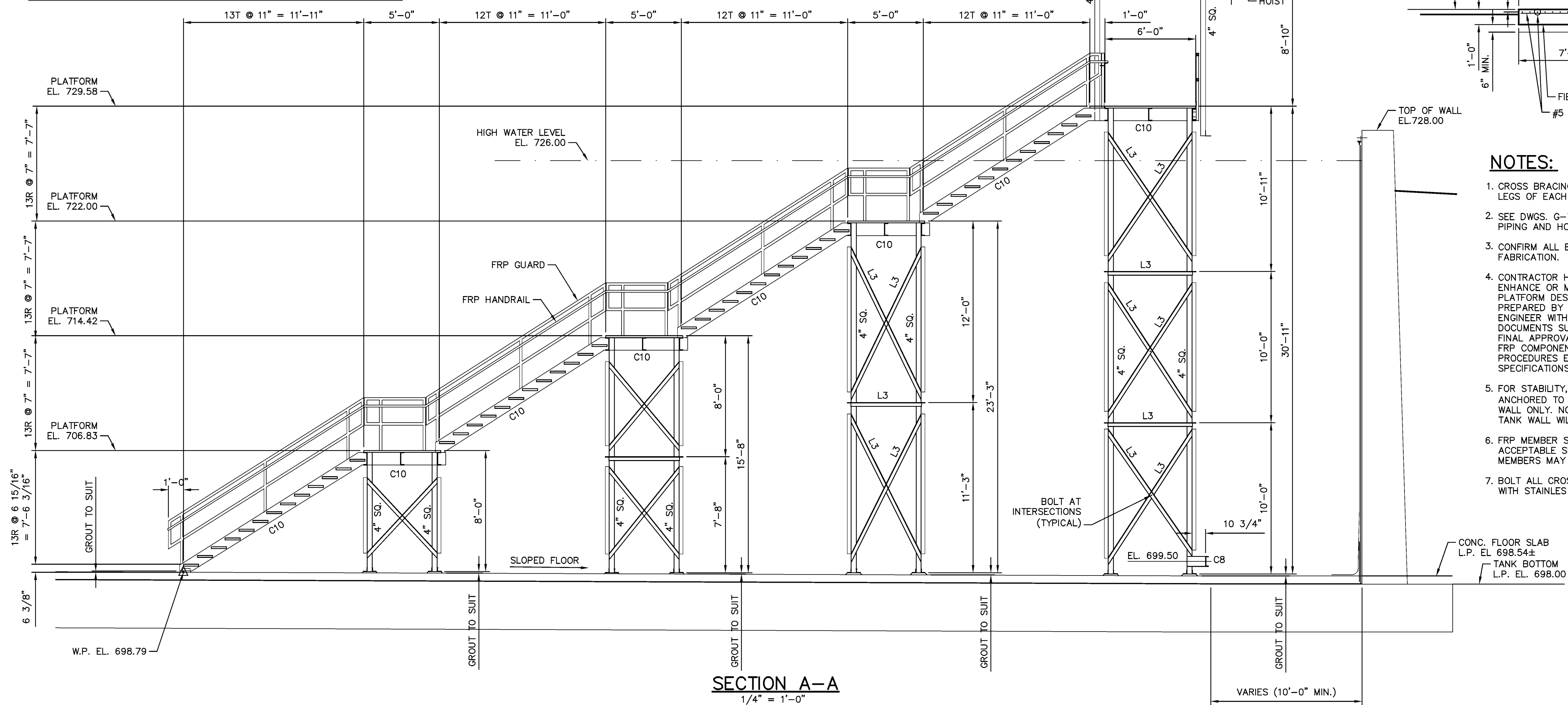
SECTION B-B
1/4" = 1'-0"

NOTES:

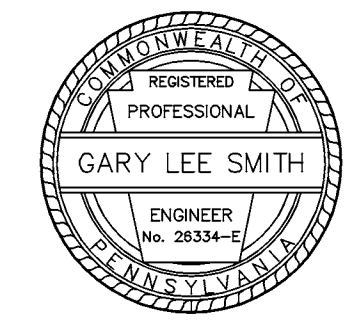
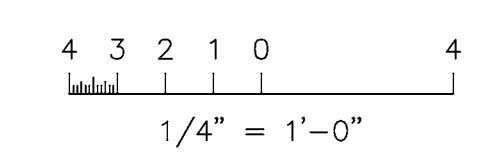
- CROSS BRACING SHOWN IS TYPICAL AT THE LEGS OF EACH FACE OF STAIR TOWER.
- SEE DWGS. G-7411 THROUGH G-7413 FOR PIPING AND HOIST ARRANGEMENT.
- CONFIRM ALL ELEVATIONS PRIOR TO FABRICATION.
- CONTRACTOR HAS THE OPTION TO SUBSTITUTE, ENHANCE OR MODIFY FRP STAIRWAY AND PLATFORM DESIGN. ALL REVISIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER WITH SIGNED AND SEALED DOCUMENTS SUBMITTED TO THE ENGINEER FOR FINAL APPROVAL PRIOR TO FABRICATION OF FRP COMPONENTS IN ACCORDANCE WITH PROCEDURES ESTABLISHED IN THE PROJECT SPECIFICATIONS.
- FOR STABILITY, PLATFORM AND STAIRS MAY BE ANCHORED TO TOP AND/OR OUTSIDE OF TANK WALL ONLY. NO ATTACHMENTS TO INSIDE OF TANK WALL WILL BE PERMITTED.
- FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES. LARGER DIMENSION MEMBERS MAY BE SUPPLIED.
- BOLT ALL CROSS BRACING AT INTERSECTIONS WITH STAINLESS STEEL BOLT.

MEMBER SIZES

- 4"SQ. = 4"x4"x1/4" FRP SQUARE TUBE
- C10 = 10"x2 3/4"x1/2" FRP CHANNEL
- C8 = 8"x2 3/16"x3/8" FRP CHANNEL
- L3 = 3"x3"x1/4" FRP ANGLE
- L4 = 4"x4"x1/4" FRP ANGLE
- [Grating symbol] = 1 1/2" FRP GRATING



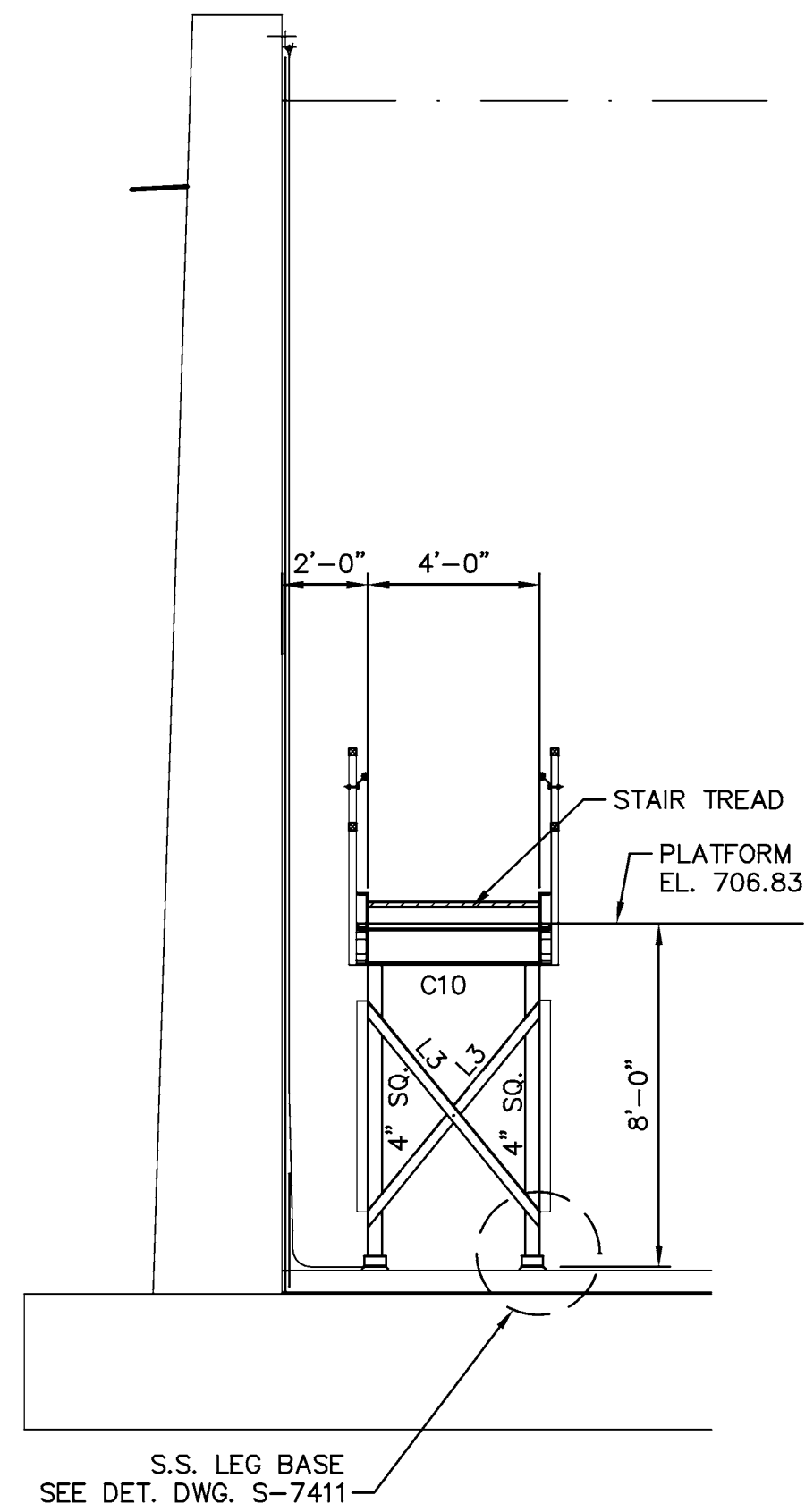
SECTION A-A
1/4" = 1'-0"



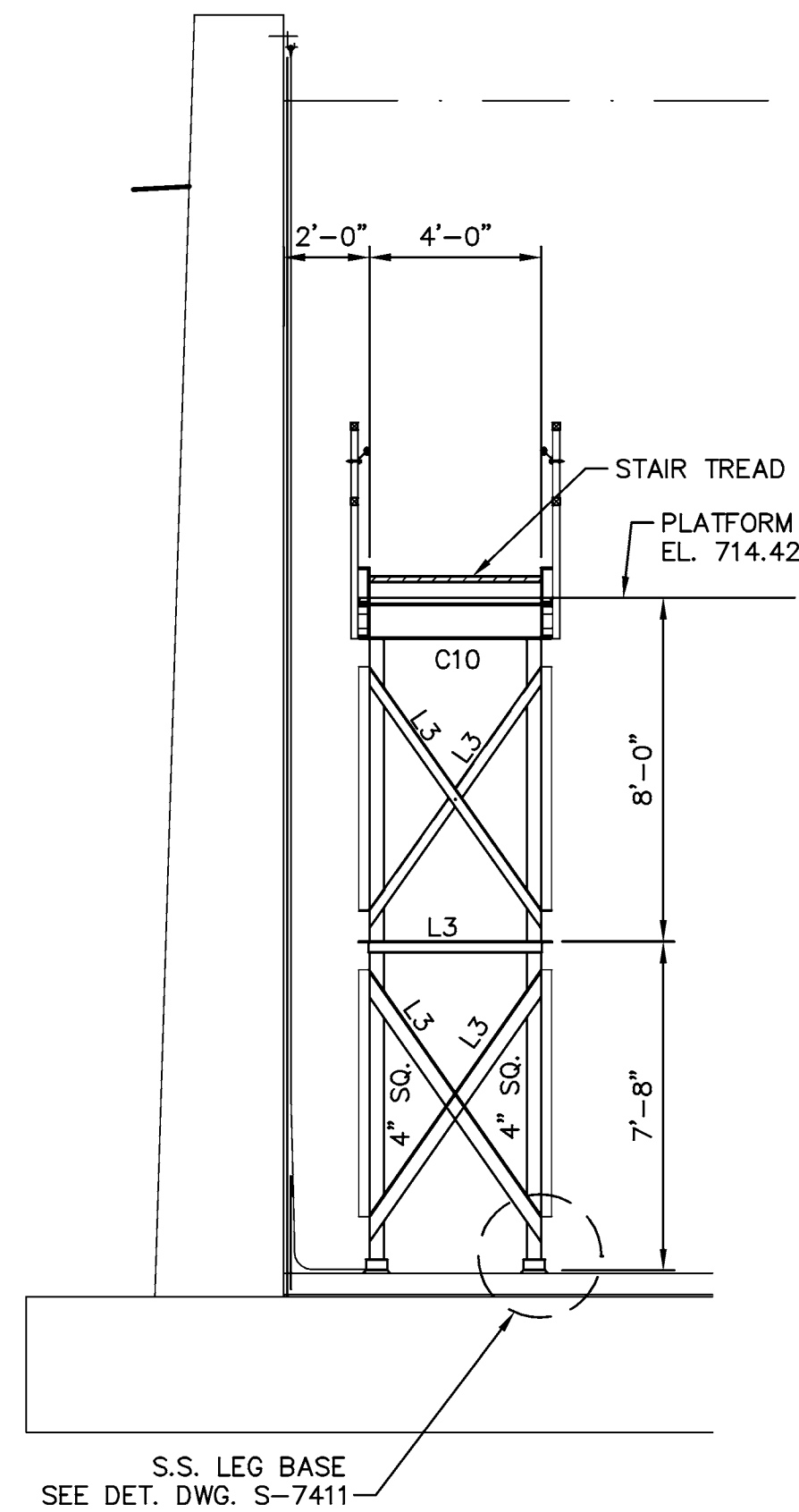
A	2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Made	Check	App'd.
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
XREF Name Attached XREF File Name Insertion Point Model Prio					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
Structural DETAIL - STAIR NO. 1 PLAN AND SECTIONS					
GJB	GLS	GLS	#42-36-S-7407A-11A.DWG	9/8/11	
Drawn	Checked	Approved	Plot Scale: 1" = 1'	Date	
20809.00			20809.00		
Size - Project		Drawing Number		Rev.	Sheet
S - 7407		A		32	45

E:\Land 2005 Projects\Lycoming County\B0889-00 LEACHATE STORAGE TANK CONSTRUCTION\dwg\RECORD DRAWINGS\32-36-S-7407A-11A.dwg 2/4/2014 11:39:52 AM EST

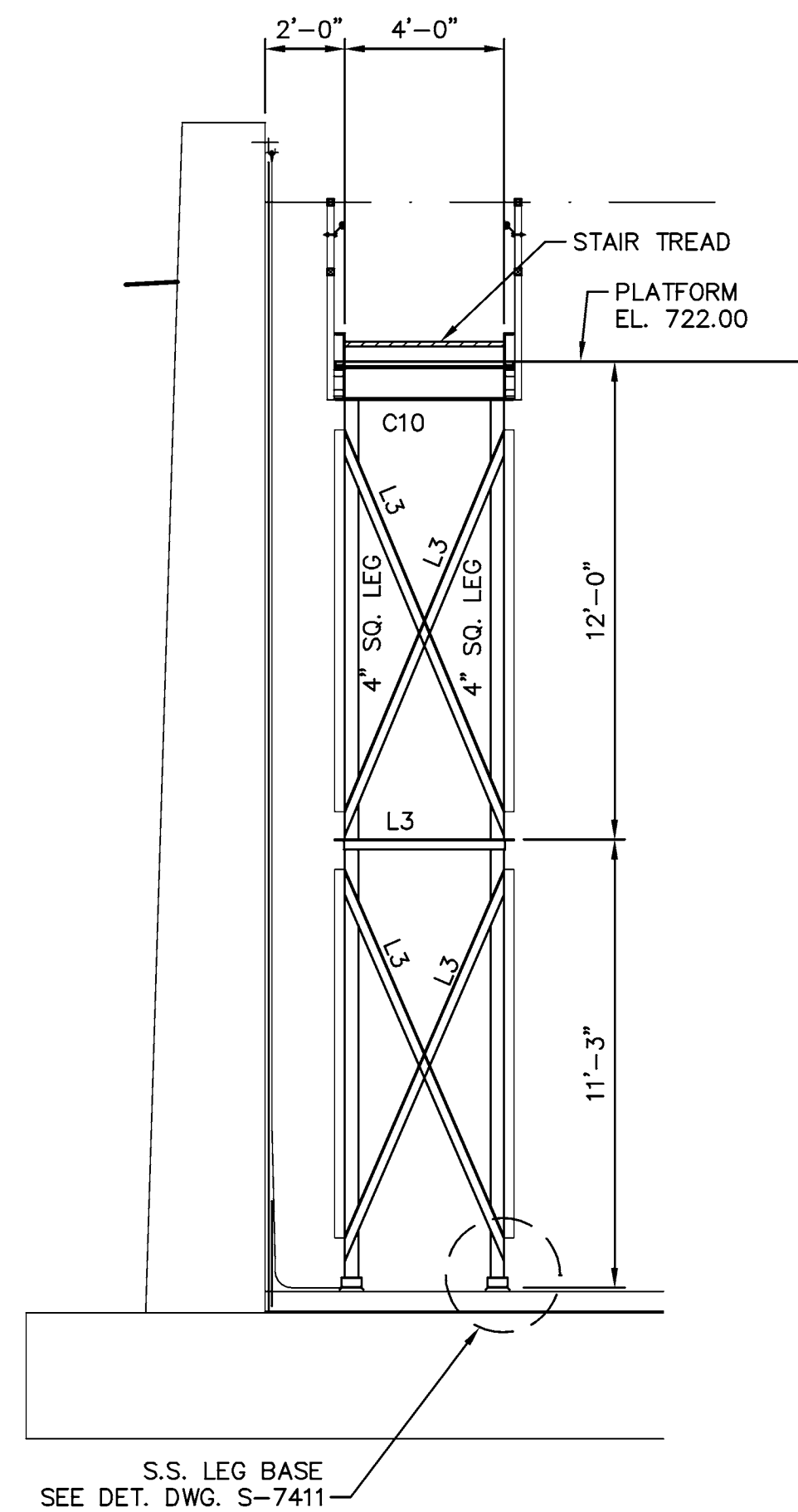
E:\Land 2005 Projects\Lycoming County\STORAGE TANK CONSTRUCTION\dwg\RECORD DRAWINGS\32-36-S-7407A-11A.dwg 2/4/2014 11:41:39 AM EST



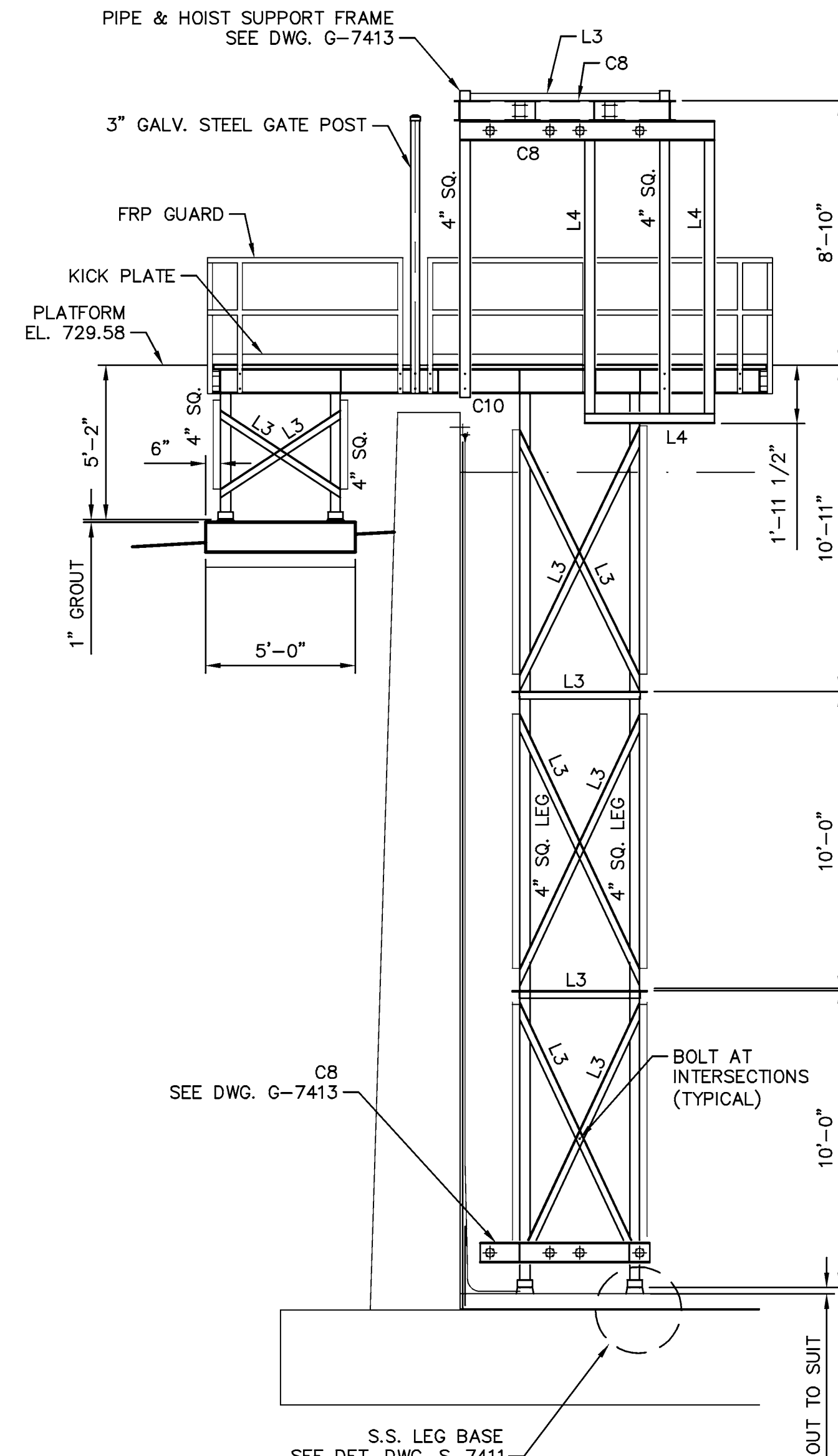
SECTION G-G
1/4" = 1'-0"



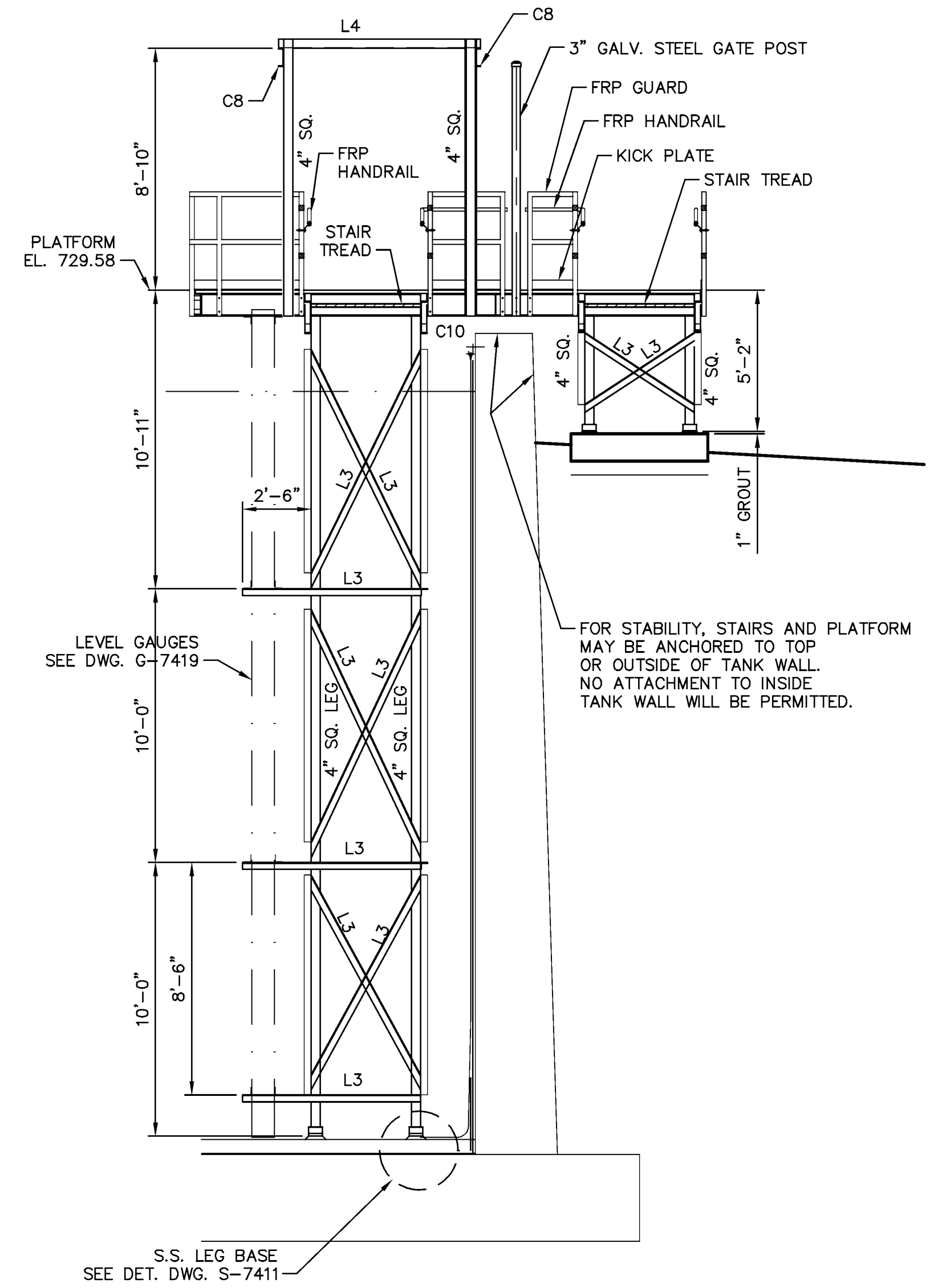
SECTION F-F
1/4" = 1'-0"



SECTION E-E
1/4" = 1'-0"



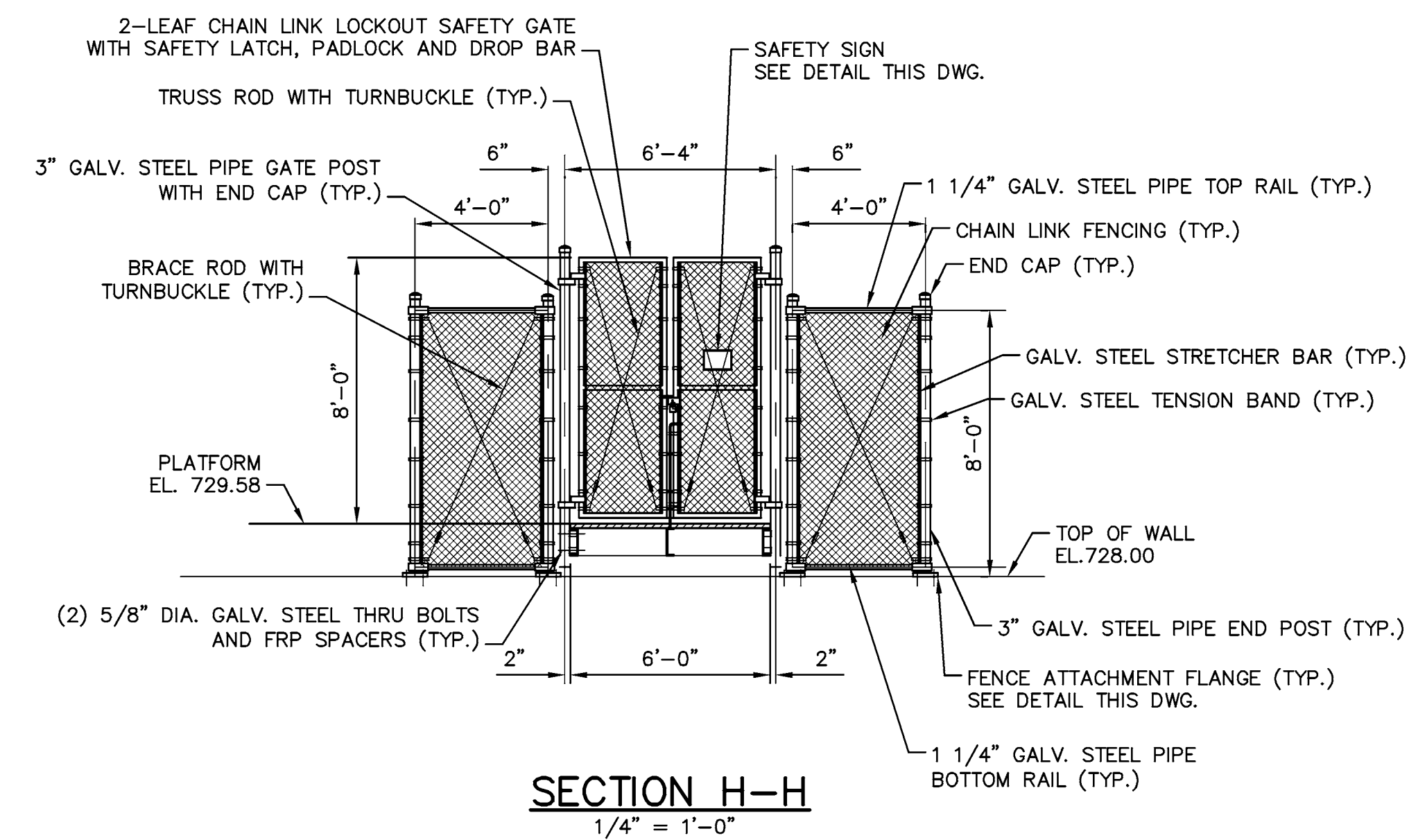
SECTION C-C
1/4" = 1'-0"



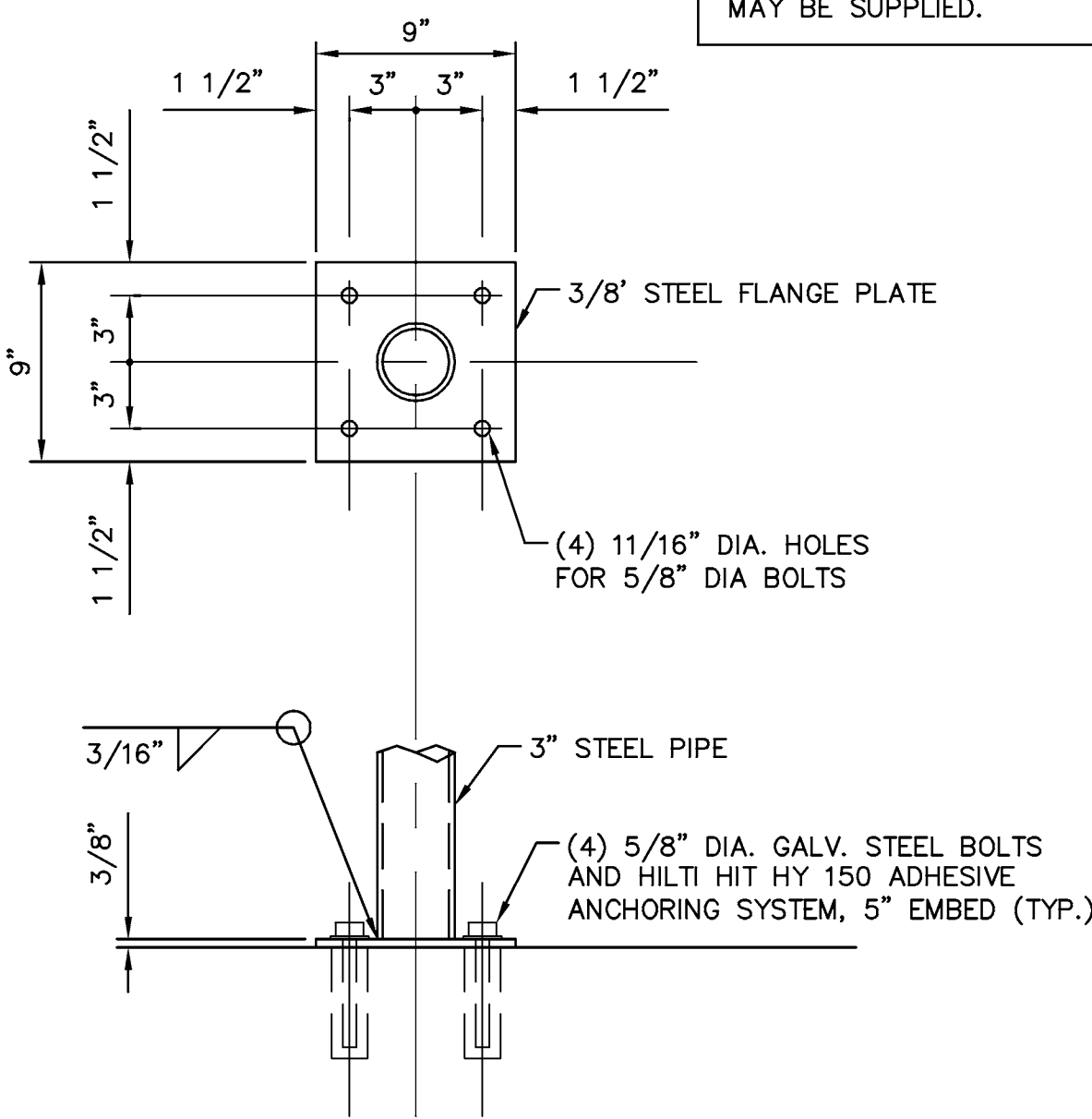
SECTION D-D
1/4" = 1'-0"

NOTE:
FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES, LARGER DIMENSION MEMBERS MAY BE SUPPLIED.

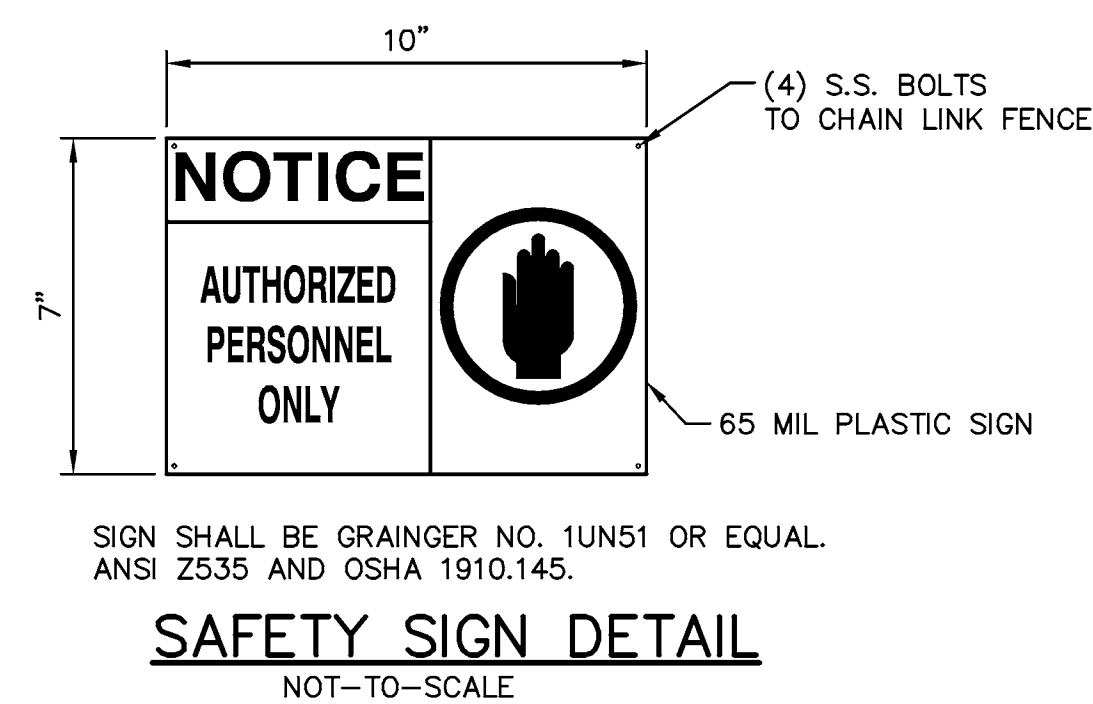
NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



SECTION H-H
1/4" = 1'-0"



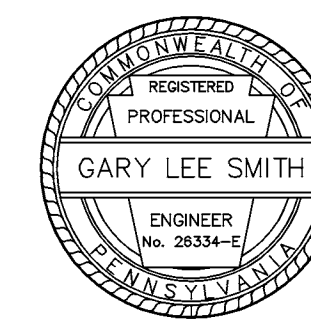
DETAIL - FENCE ATTACHMENT FLANGE
NOT-TO-SCALE



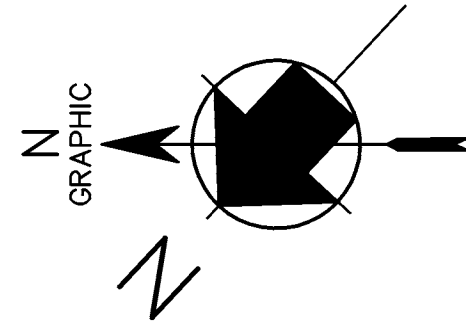
SIGN SHALL BE GRAINGER NO. 1UN51 OR EQUAL. ANSI Z535 AND OSHA 1910.145.

SAFETY SIGN DETAIL
NOT-TO-SCALE

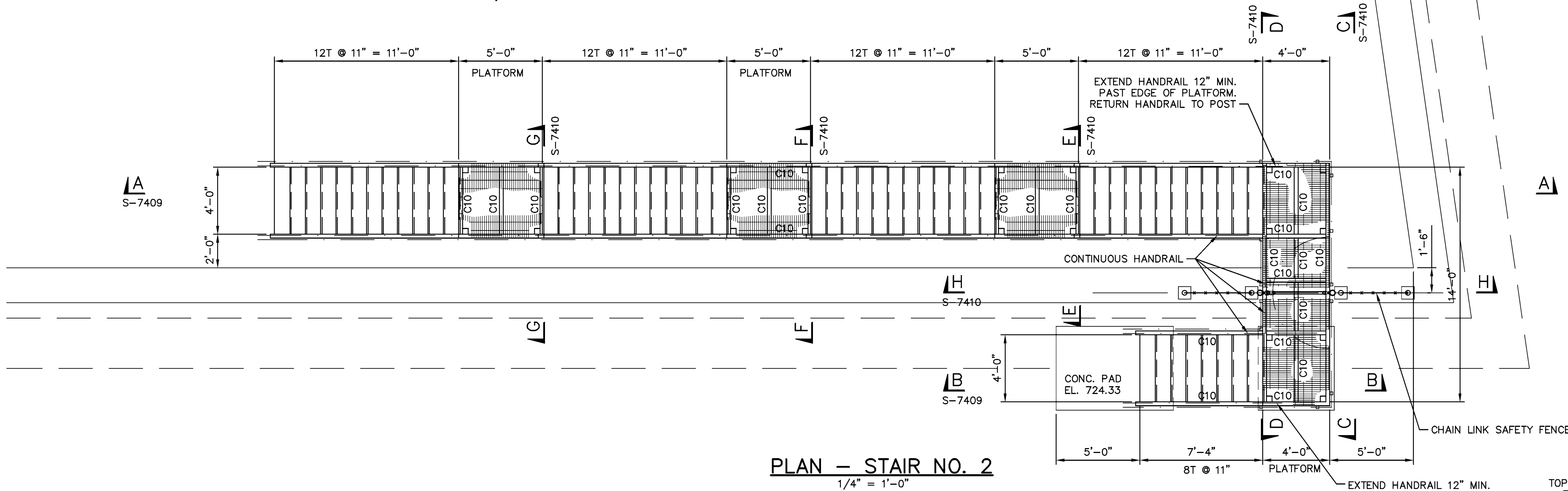
4 3 2 1 0
1/4" = 1'-0"



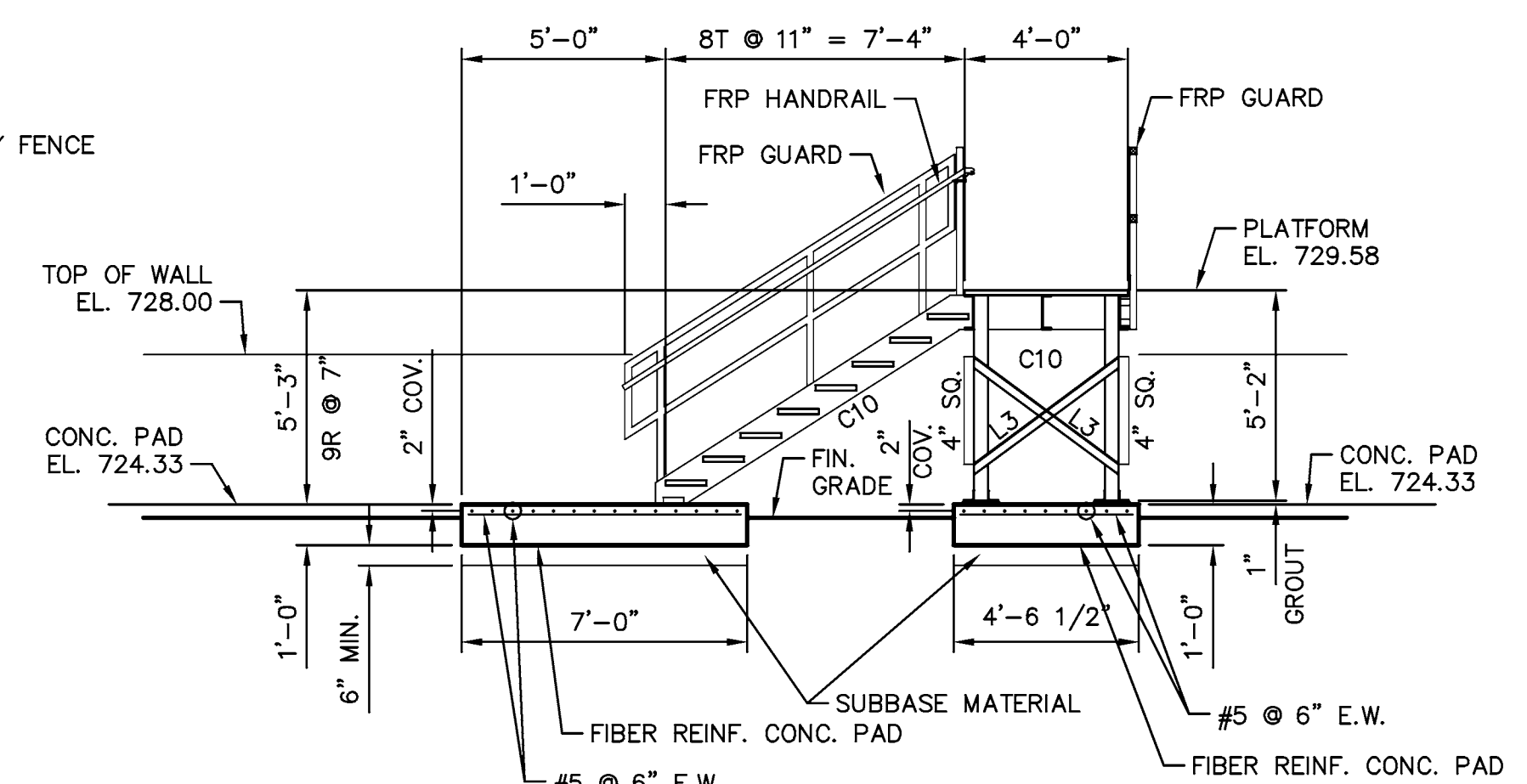
No.	Date	Description	Made	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB	-	-
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION Structural DETAIL - STAIR NO. 1 SECTIONS					
GJB	GLS	GLS	F462-36-S-7407A-11A.DWG	9/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date	
20809.00			20809.00		
Size - Project	Drawing Number	Rev.	Sheet		
	S - 7408	A	33	45	



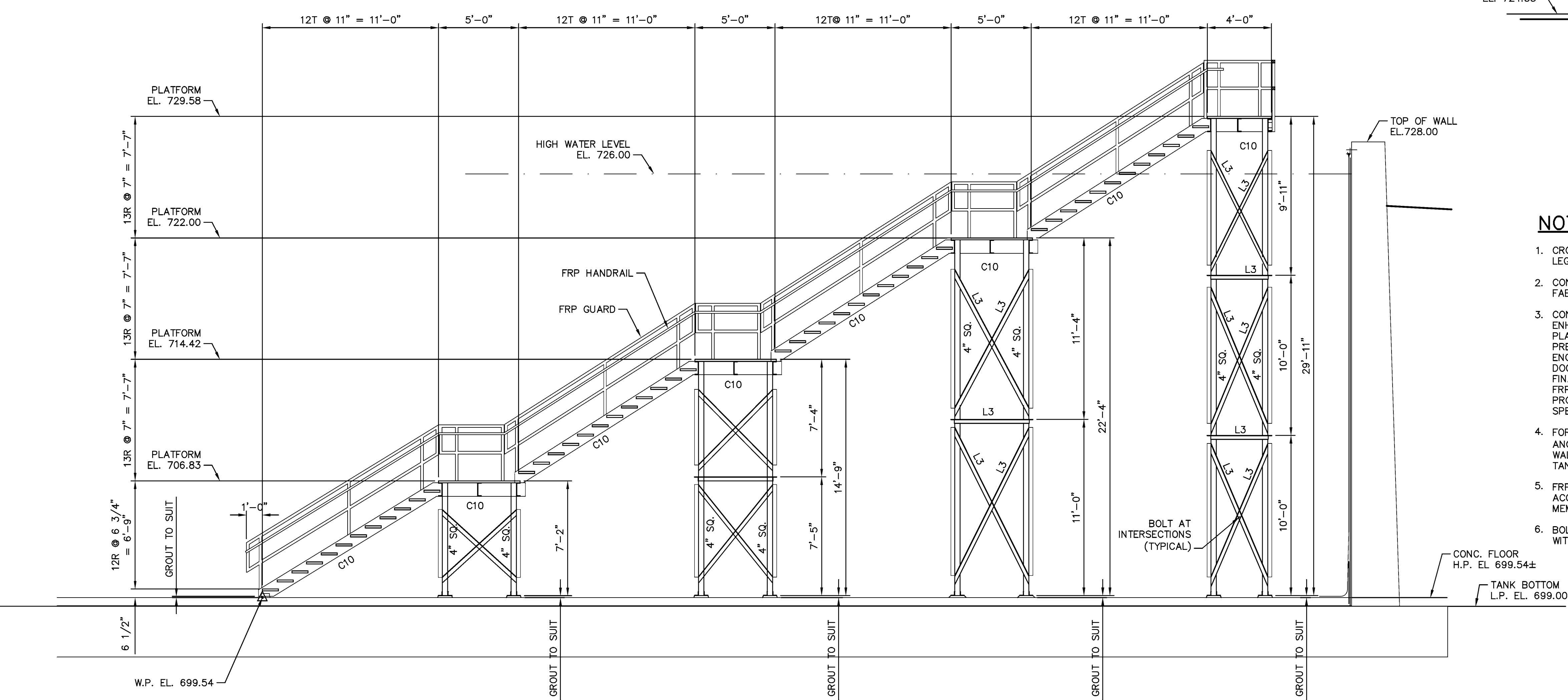
NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



PLAN - STAIR NO. 2
 1/4" = 1'-0"



SECTION B-B
 1/4" = 1'-0"



SECTION A-A
 1/4" = 1'-0"

NOTES:

- CROSS BRACING SHOWN IS TYPICAL AT THE LEGS OF EACH FACE OF STAIR TOWER.
- CONFIRM ALL ELEVATIONS PRIOR TO FABRICATION.
- CONTRACTOR HAS THE OPTION TO SUBSTITUTE, ENHANCE OR MODIFY FRP STAIRWAY AND PLATFORM DESIGN. ALL REVISIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER WITH SIGNED AND SEALED DOCUMENTS SUBMITTED TO THE ENGINEER FOR FINAL APPROVAL PRIOR TO FABRICATION OF FRP COMPONENTS IN ACCORDANCE WITH PROCEDURES ESTABLISHED IN THE PROJECT SPECIFICATIONS.
- FOR STABILITY, PLATFORM AND STAIRS MAY BE ANCHORED TO TOP AND/OR OUTSIDE OF TANK WALL ONLY. NO ATTACHMENT TO INSIDE OF TANK WALL WILL BE PERMITTED.
- FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES, LARGER DIMENSION MEMBERS MAY BE SUPPLIED.
- BOLT ALL CROSS BRACING AT INTERSECTIONS WITH STAINLESS STEEL BOLT.

MEMBER SIZES

- 4"SQ. = 4"x4"x1/4" FRP SQUARE TUBE
- C10 = 10"x2 3/4"x1/2" FRP CHANNEL
- C8 = 8"x2 3/16"x3/8" FRP CHANNEL
- L3 = 3"x3"x1/4" FRP ANGLE
- L4 = 4"x4"x1/4" FRP ANGLE
- [Grid Symbol] = 1 1/2" FRP GRATING

No.	Date	REVISIONS	By	Check	App'd.
A	2-7-14	RECORD DRAWING	GJB	-	-

Cummings & Smith, Inc.
 Consulting Engineers
 20 Bentley Place Upper Merion, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

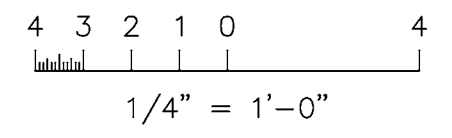
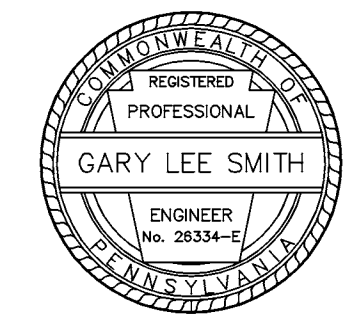
COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION

Structural
DETAIL - STAIR NO. 2
PLAN AND SECTIONS

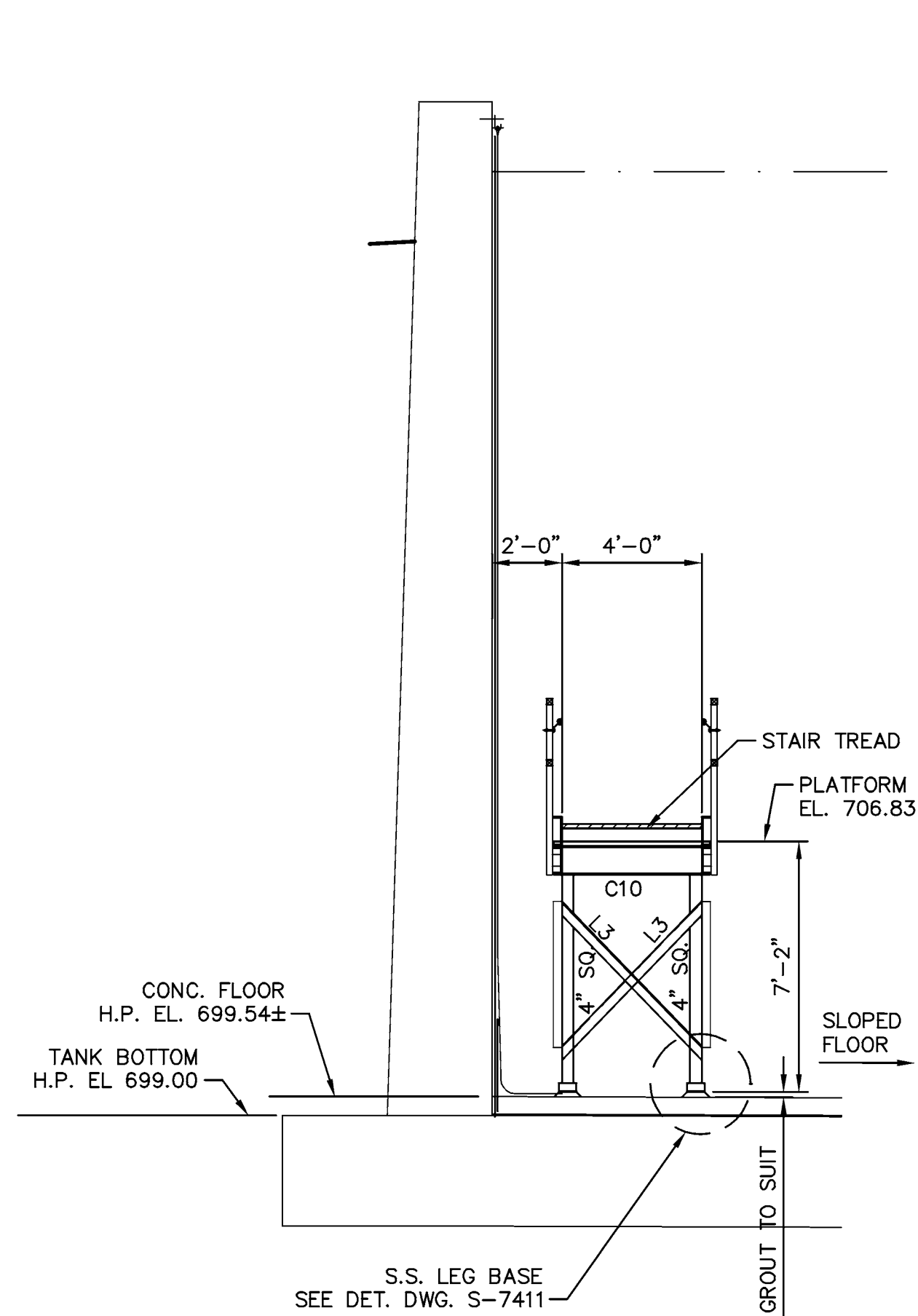
GJB	GLS	GLS	#42-36-S-7407A-11A.DWG	9/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
20809.00			20809.00	

Size - Project: **S - 7409** Rev. **A** 34 of 45

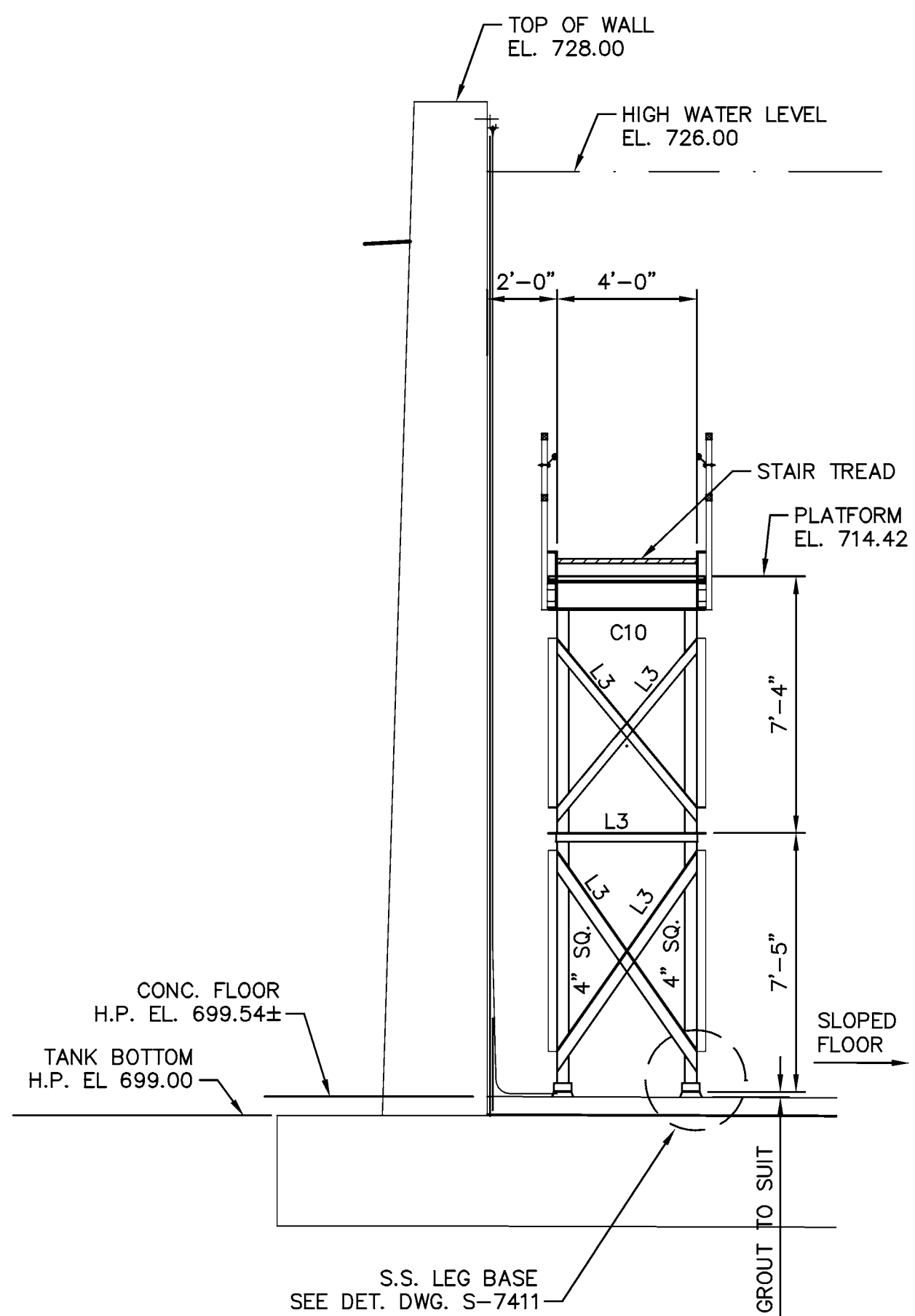


E:\Lend 2005 Projects\Lycoming County\Leachate Storage Tank Construction\dwg\RECORD DRAWINGS\32-36-S-7407A-11A.dwg 2/4/2014 11:43:33 AM EST

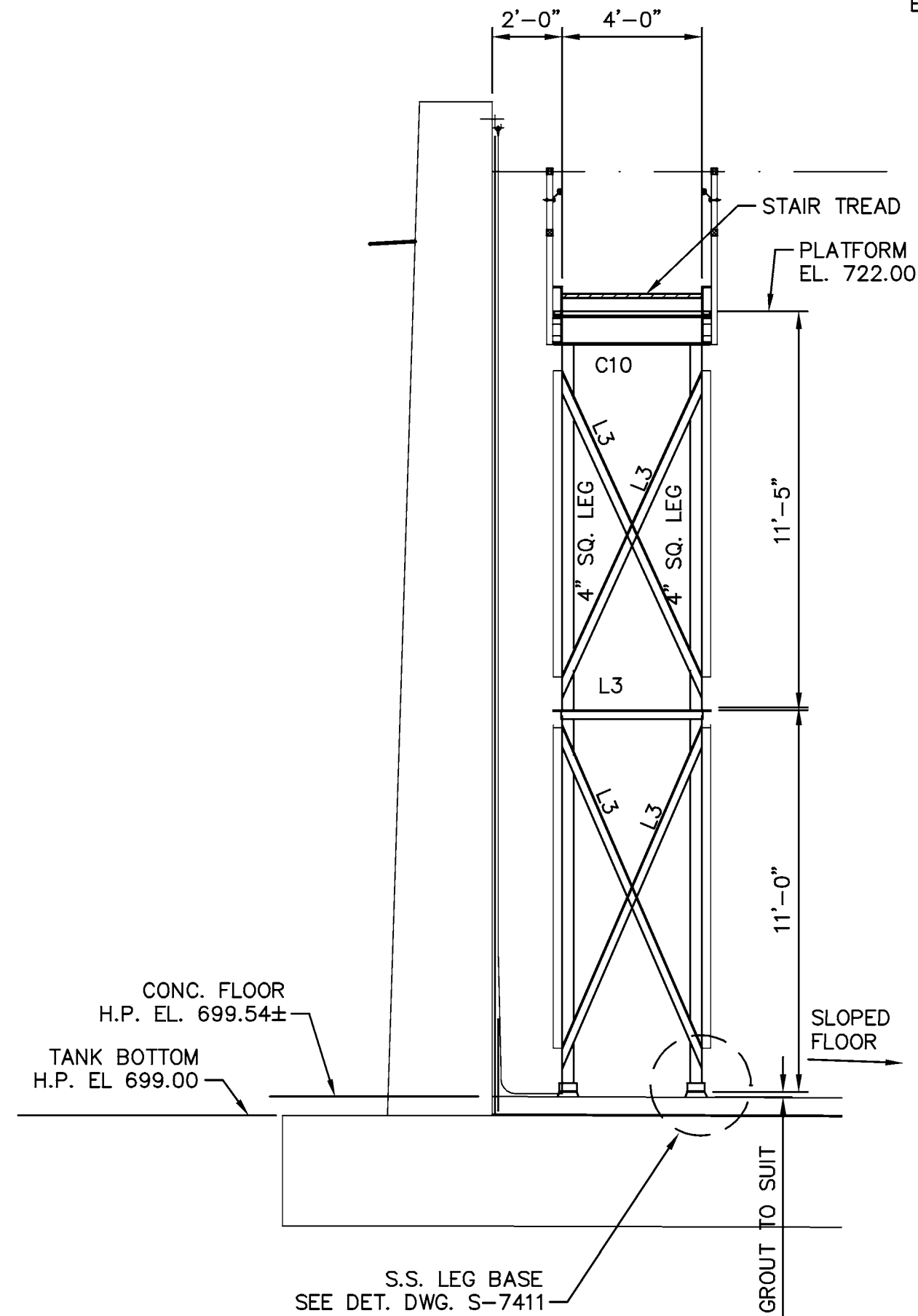
E:\Land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION\dwg\RECORD DRAWINGS\32-36-S-7407A-11A.dwg 2/4/2014 11:45:17 AM EST



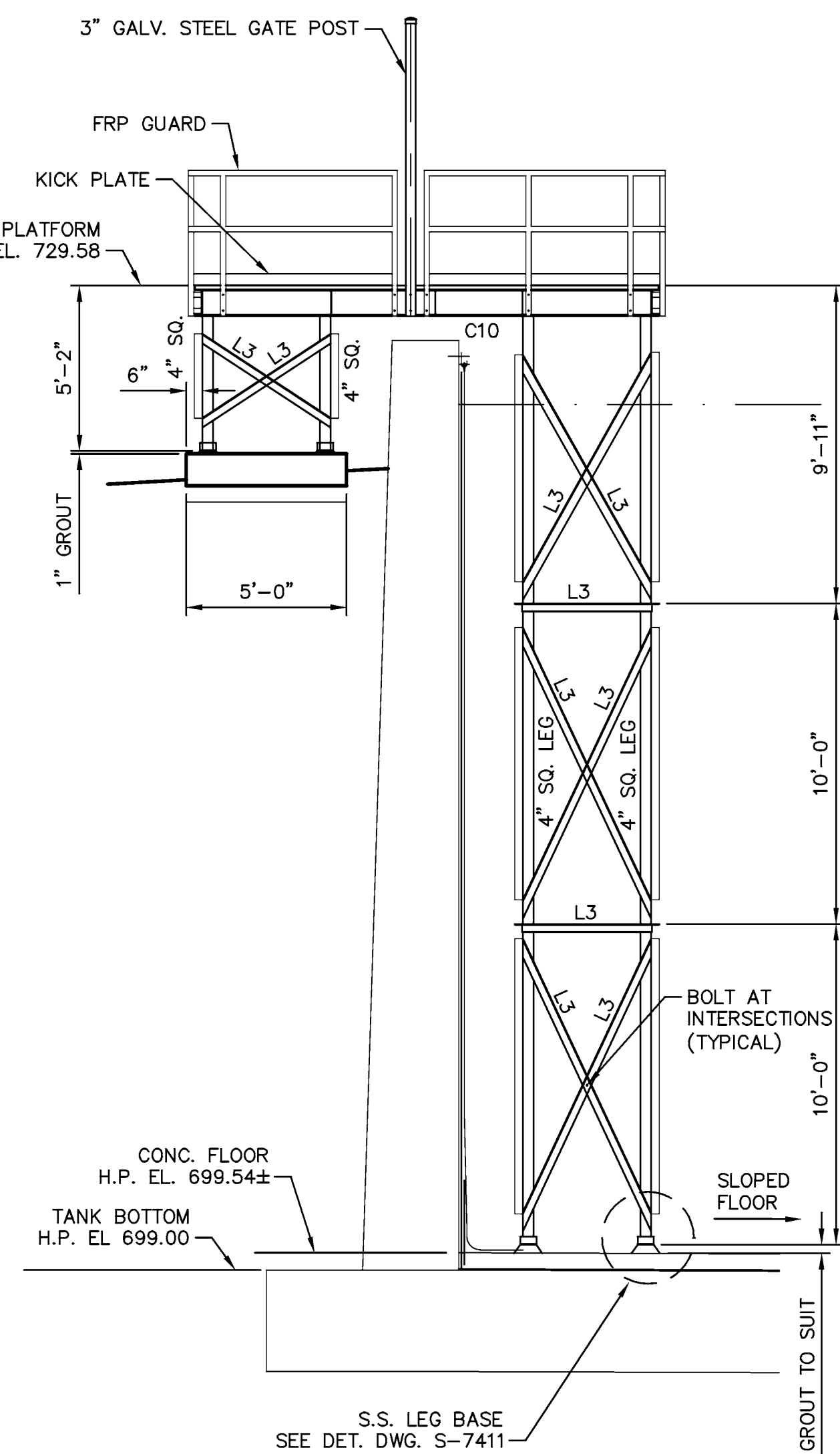
SECTION G-G
1/4" = 1'-0"



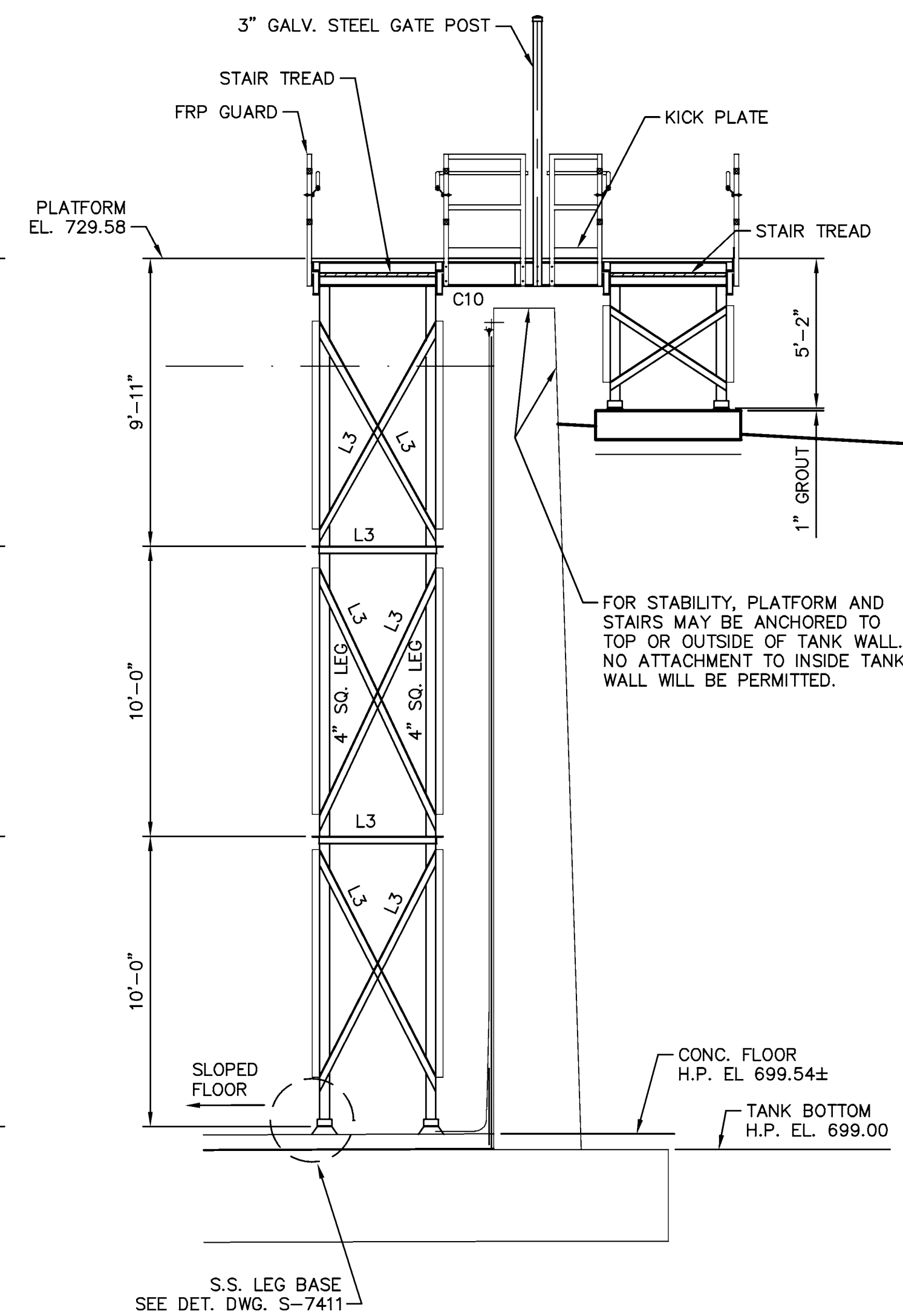
SECTION F-F
1/4" = 1'-0"



SECTION E-E
1/4" = 1'-0"



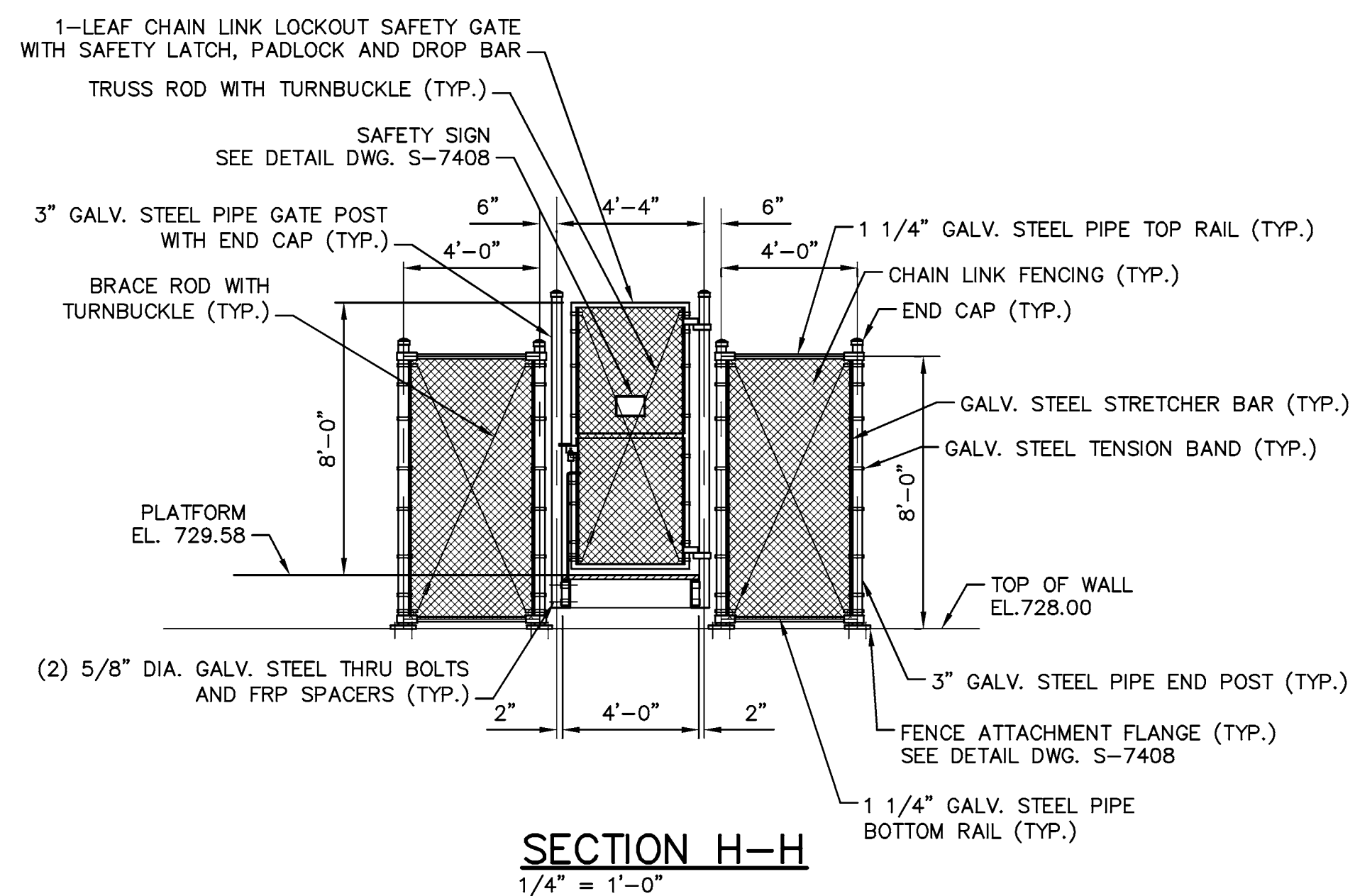
SECTION C-C
1/4" = 1'-0"



SECTION D-D
1/4" = 1'-0"

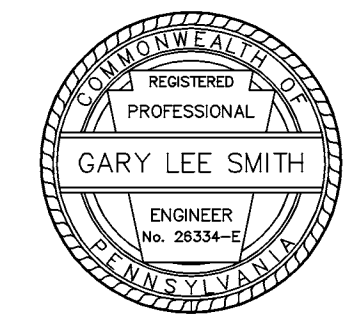
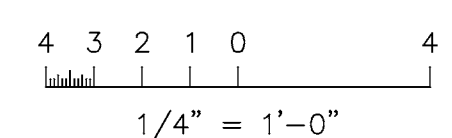
NOTE:
FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES, LARGER DIMENSION MEMBERS MAY BE SUPPLIED.

FOR STABILITY, PLATFORM AND STAIRS MAY BE ANCHORED TO TOP OR OUTSIDE OF TANK WALL. NO ATTACHMENT TO INSIDE TANK WALL WILL BE PERMITTED.



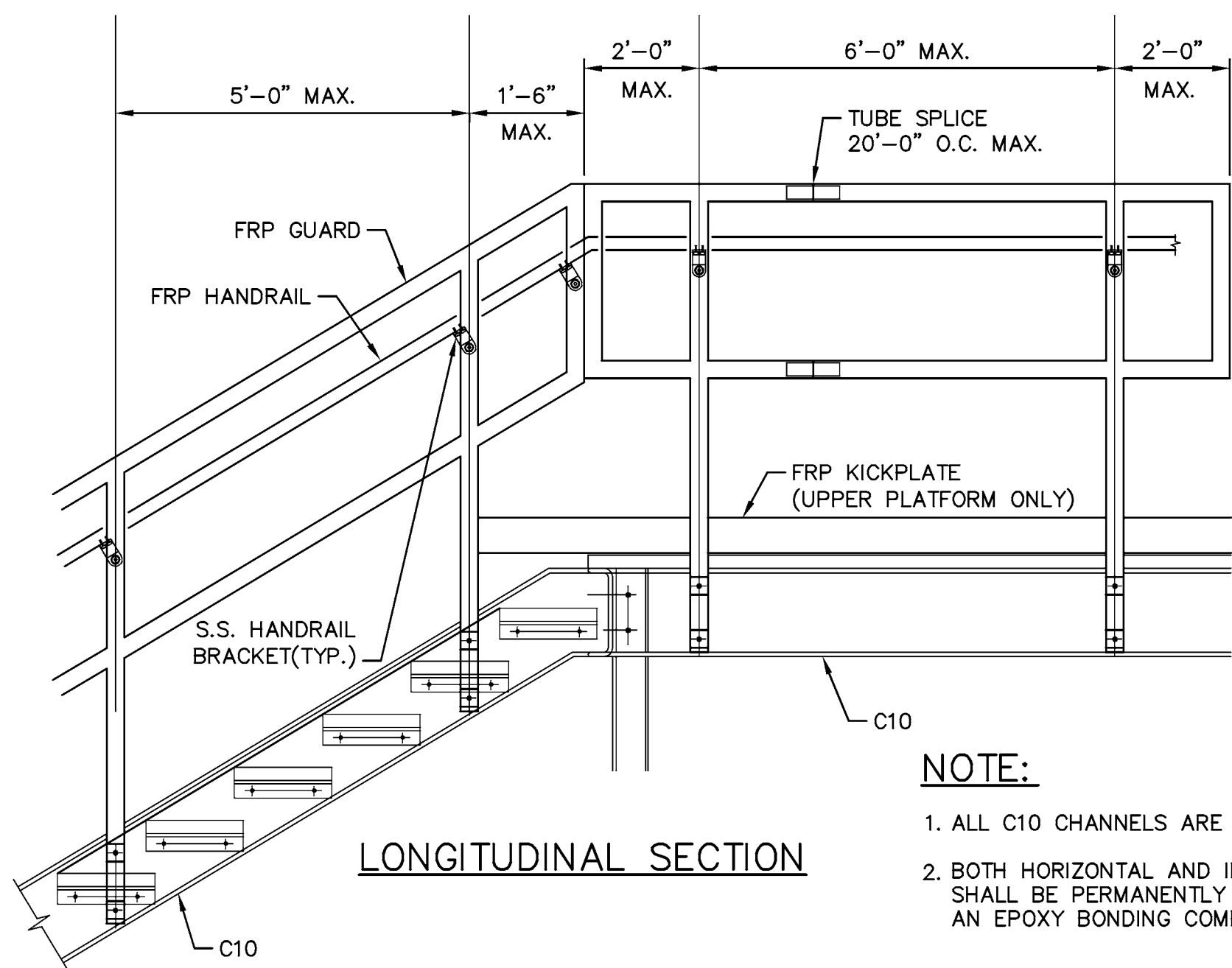
SECTION H-H
1/4" = 1'-0"

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Made	Check	App'd.
REVISIONS					
A	2-7-14	RECORD DRAWING	GJB	-	-
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION Structural DETAIL - STAIR NO. 2 SECTIONS					
GJB	GLS	GLS	PA42-36-S-7407A-11A.DWG	9/8/11	
20809.00	20809.00	20809.00	1=1		
Size - Project S - 7410			Drawing Number A 35 of 45		

E:\land 2005 Projects\Lycoming County\LEACHATE STORAGE TANK CONSTRUCTION.dwg RECDRAW BRWINGS\32-36-S-7407A-11A.dwg 2/4/2014 11:45:17 AM EST



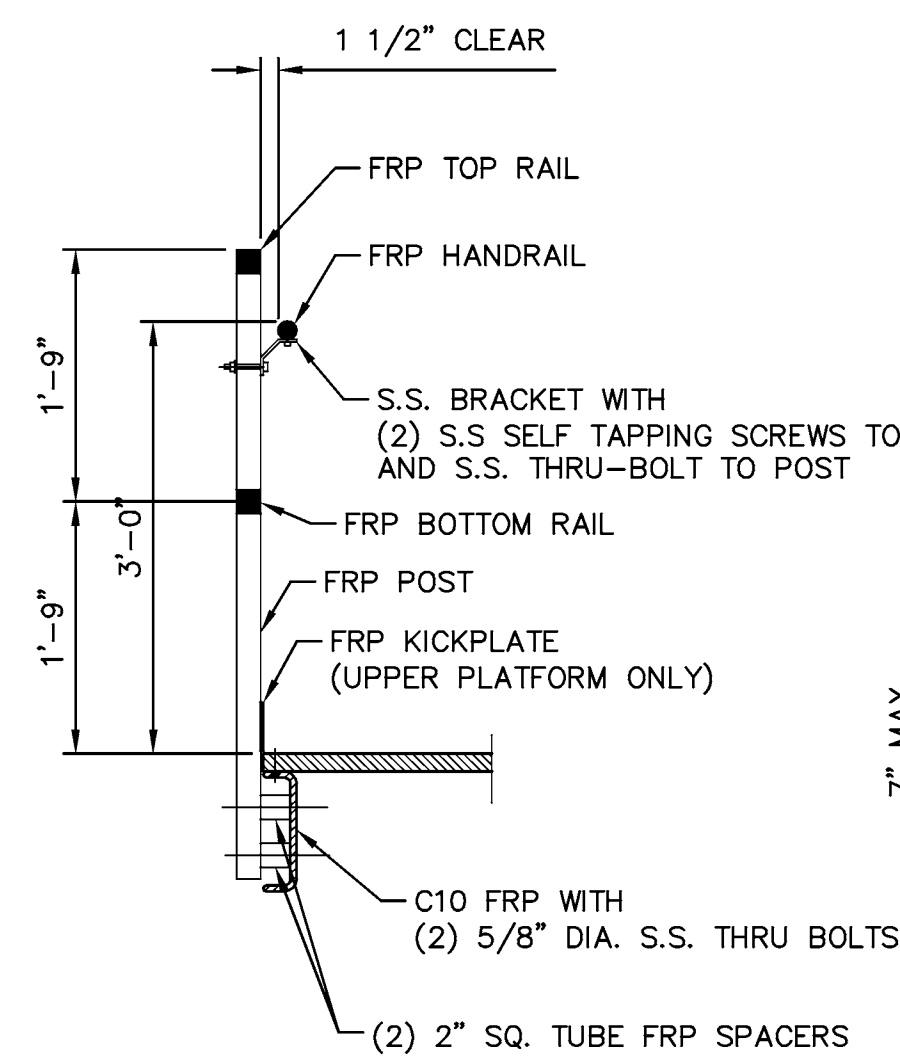
LONGITUDINAL SECTION

NOTE:

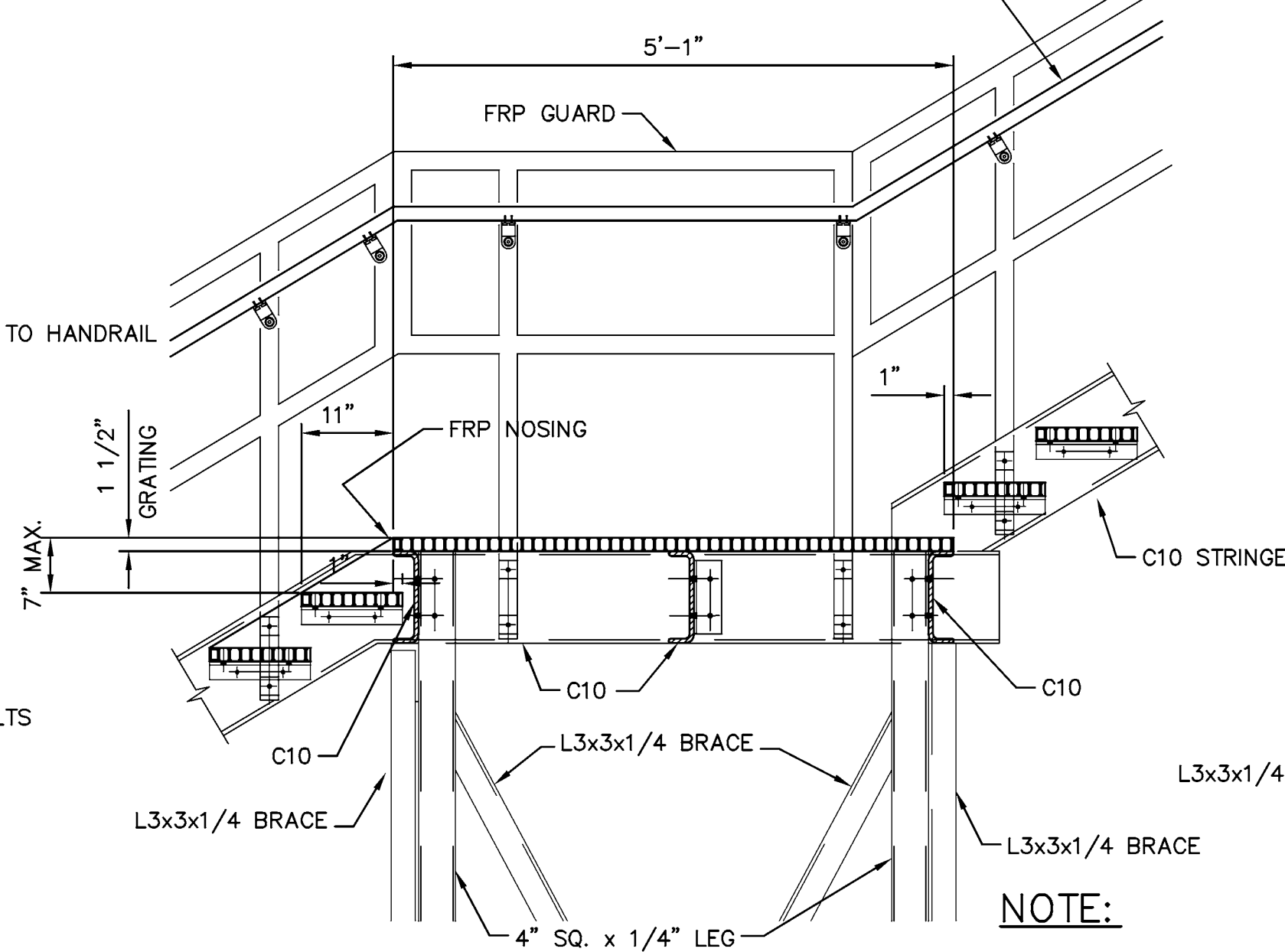
1. ALL C10 CHANNELS ARE C10x2 3/4x1/2 FRP.
2. BOTH HORIZONTAL AND INCLINED POSTS AND RAILS SHALL BE PERMANENTLY JOINED USING RIVETS AND AN EPOXY BONDING COMPOUND.

TYPICAL GUARD DETAIL

3/4" = 1'-0"



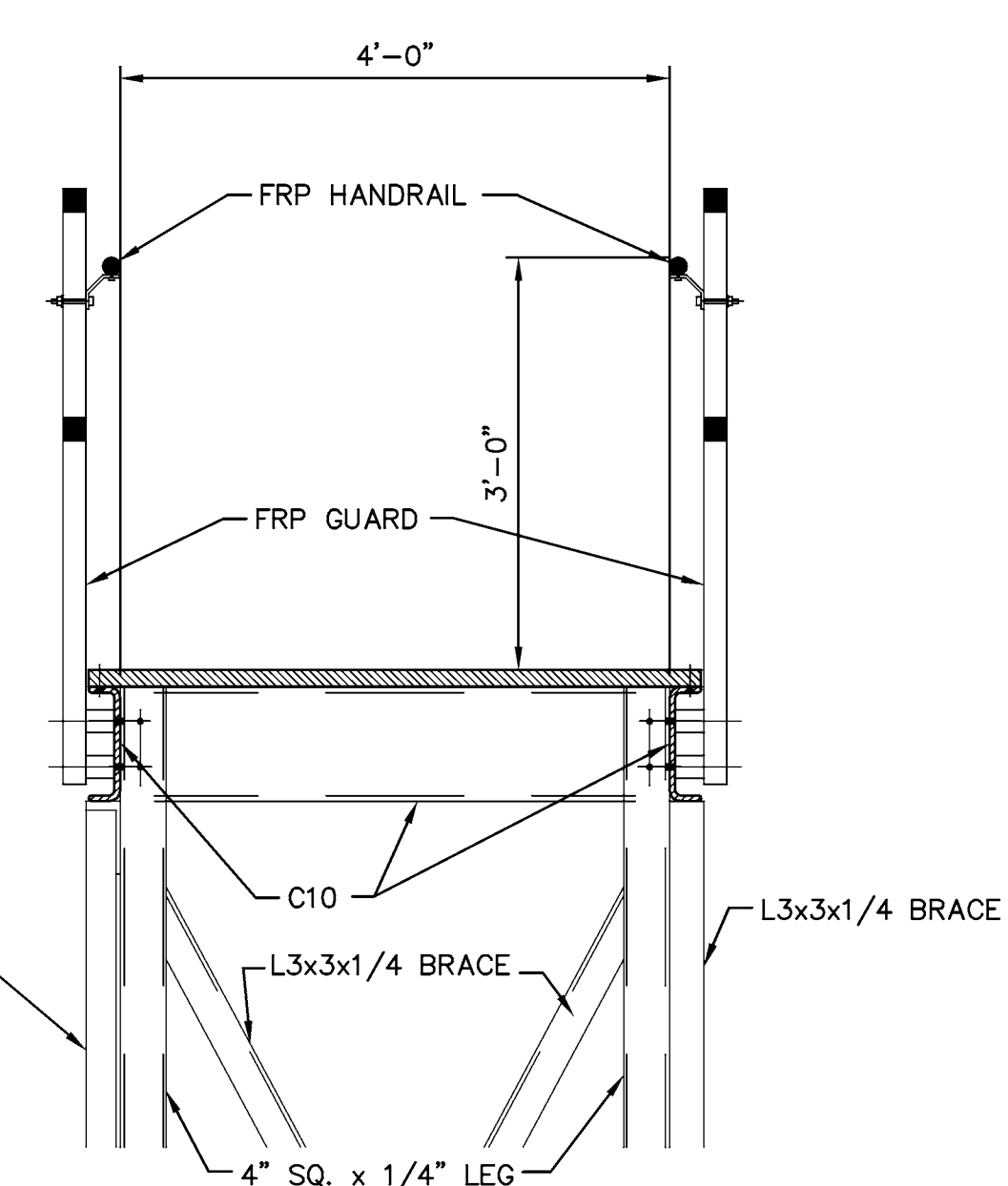
CROSS SECTION



LONGITUDINAL SECTION

NOTE:

1. ALL C10 CHANNELS ARE C10x2 3/4x1/2 FRP.
2. ALL BOLTED CONNECTIONS HAVE NOT BEEN SHOWN. THE STAIR FABRICATOR SHALL DETERMINE THE SIZE AND LOCATION OF THESE CONNECTIONS.



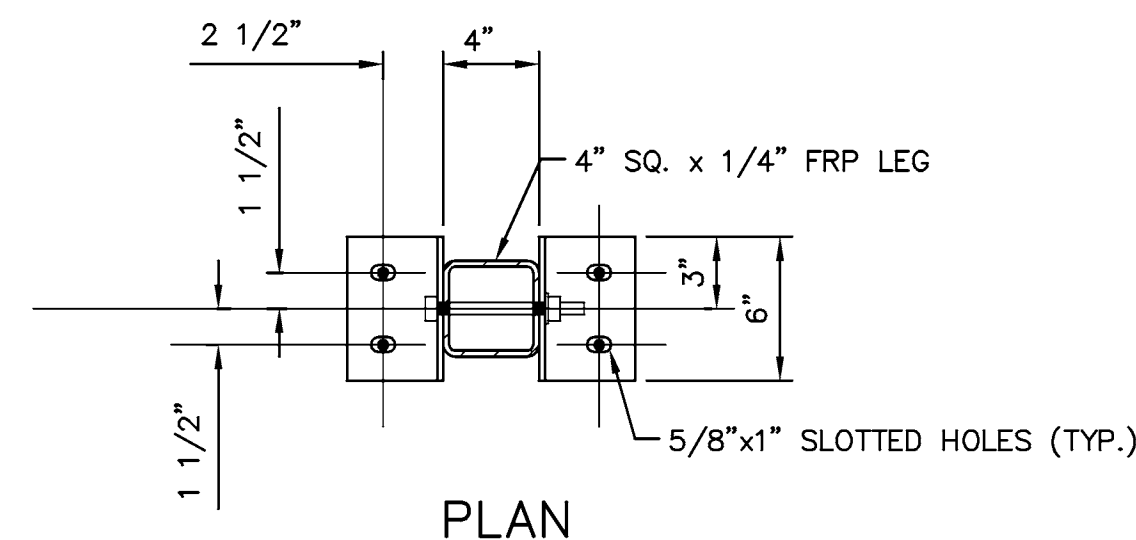
CROSS SECTION

DETAIL - INTERMEDIATE STAIR PLATFORM

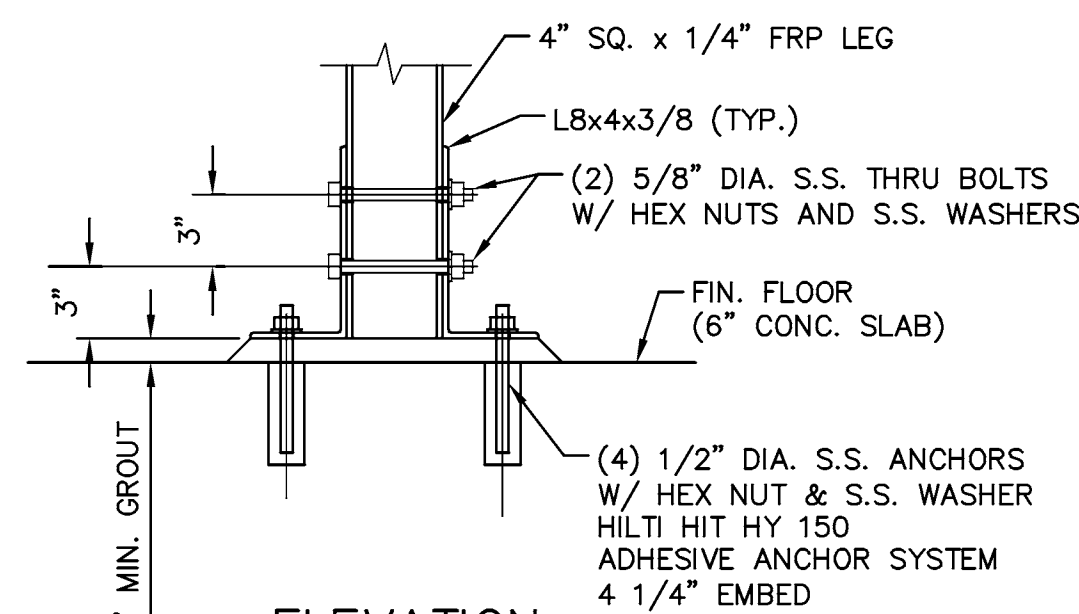
3/4" = 1'-0"

GENERAL NOTES - FRP STAIRS

1. ALL STRUCTURAL MEMBERS, GRATINGS, STAIR TREADS AND HANDRAILS SHALL BE FIBER REINFORCED POLYMER (FRP) PRODUCTS WITH MECHANICAL CONNECTIONS AND WILL CONTAIN ULTRAVIOLET AND FLAME RETARDANT INHIBITORS. ALL END CUTS, HOLES AND ABRASIONS SHALL BE SEALED WITH A COMPATIBLE RESIN COATING. STRUCTURAL MEMBERS SHALL BE MANUFACTURED BY THE PULTRUSION PROCESS.
2. ALL BOLTS, FASTENERS AND OTHER HARDWARE SHALL BE TYPE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
3. STAIR TREADS SHALL BE 1 1/2" x 5/16" PULTRUDED FIBERGLASS GRATING, I-BAR SERIES WITH ABRASIVE GRIT SURFACE, WIDE NOSING AND SHALL BE COLORED "YELLOW".
4. PLATFORM GRATINGS SHALL BE 1 1/2" DEEP, 1 1/2" SQUARE MESH MOLDED MADE WITH THE CORVEX RESIN SYSTEM, COLORS YELLOW OR DARK GRAY, 30" MAX. SPAN.
5. GUARDRAIL SHALL BE ISO-FR POLYESTER FIRE RETARDANT SYSTEM. COLOR YELLOW, PAINTED.
6. STRUCTURAL SHAPES SHALL BE ISO-FR DARK GRAY POLYESTER FIRE RETARDANT SYSTEM.
7. THE CONTRACTOR SHALL FURNISH MANUFACTURER'S SHOP DRAWINGS FOR FRP STRUCTURAL SHAPES, GRATING AND ALL OTHER MISCELLANEOUS WORK CLEARLY SHOWING MATERIAL SIZES, TYPES, STYLES, PART OR CATALOG NUMBERS, COMPLETE DETAILS FOR THE FABRICATION AND ERECTION OF COMPONENTS INCLUDING BUT NOT LIMITED TO LOCATION, LENGTHS, TYPE AND SIZES OF FASTENERS, CLIP ANGLES, MEMBER SIZES, AND ALL CONNECTION DETAILS.
8. DESIGN LIVE LOAD = 100 PSF. STAIR WILL BE FULLY SUBMERGED IN LEACHATE ON OCCASION. DESIGN BRACING AND CONNECTIONS ACCORDINGLY.
9. CONTRACTOR HAS THE OPTION TO SUBSTITUTE, ENHANCE OR MODIFY THE FRP STAIRWAY AND PLATFORM DESIGN. ALL REVISIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER WITH SIGNED AND SEALED DOCUMENTS SUBMITTED TO THE ENGINEER FOR FINAL APPROVAL PRIOR TO FABRICATION OF FRP COMPONENTS IN ACCORDANCE WITH PROCEDURES ESTABLISHED IN THE PROJECT SPECIFICATIONS.
10. FOR STABILITY, PLATFORM AND STAIRS MAY BE ANCHORED TO TOP OR OUTSIDE OF TANK WALL. NO ATTACHMENT TO INSIDE TANK WALL WILL BE PERMITTED.
11. FRP MEMBER SIZES SHOWN ARE MINIMUM ACCEPTABLE SIZES, LARGER DIMENSION MEMBERS MAY BE SUPPLIED.

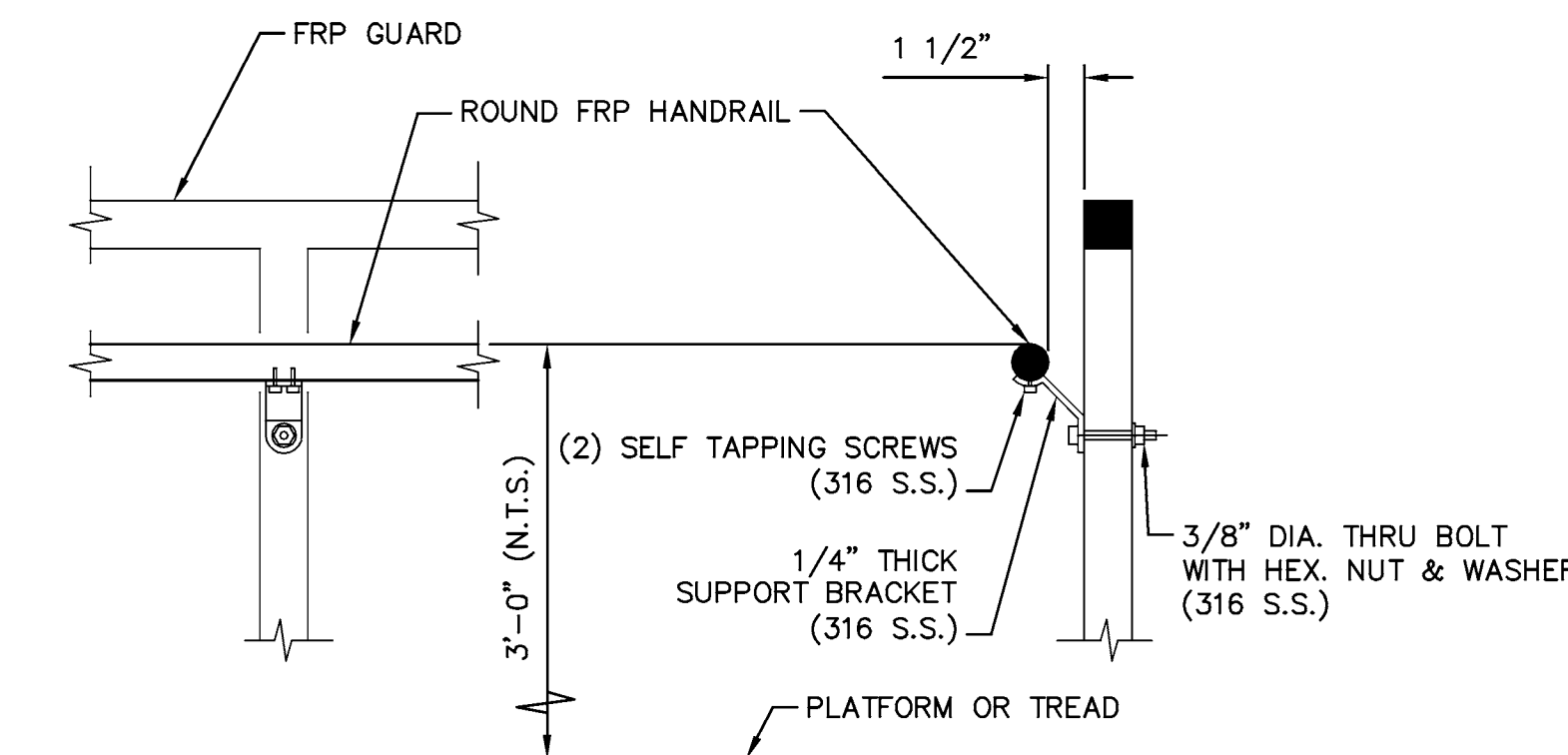


PLAN



**ELEVATION
TYP. LEG BASE**

1 1/2" = 1'-0"

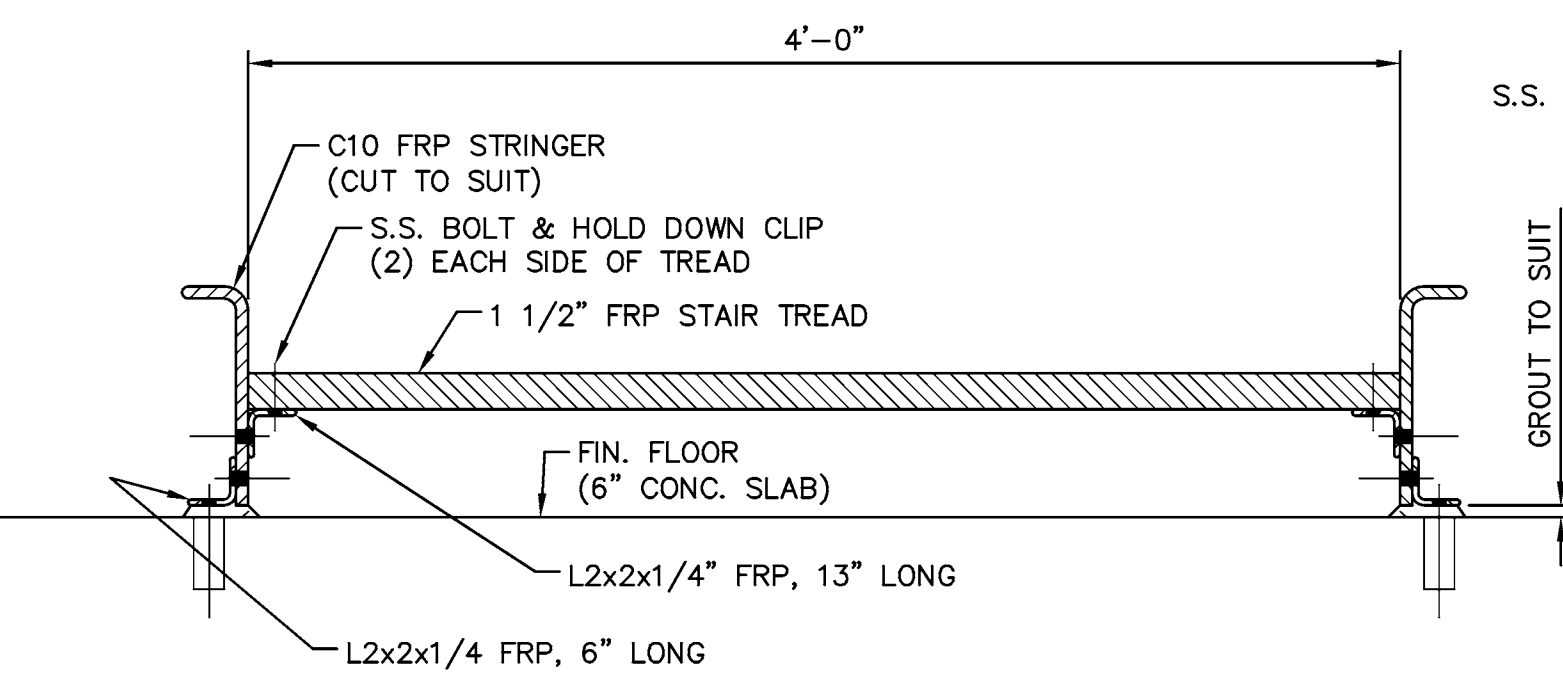


FRONT ELEVATION

SIDE ELEVATION

TYP. HANDRAIL SUPPORT DETAIL

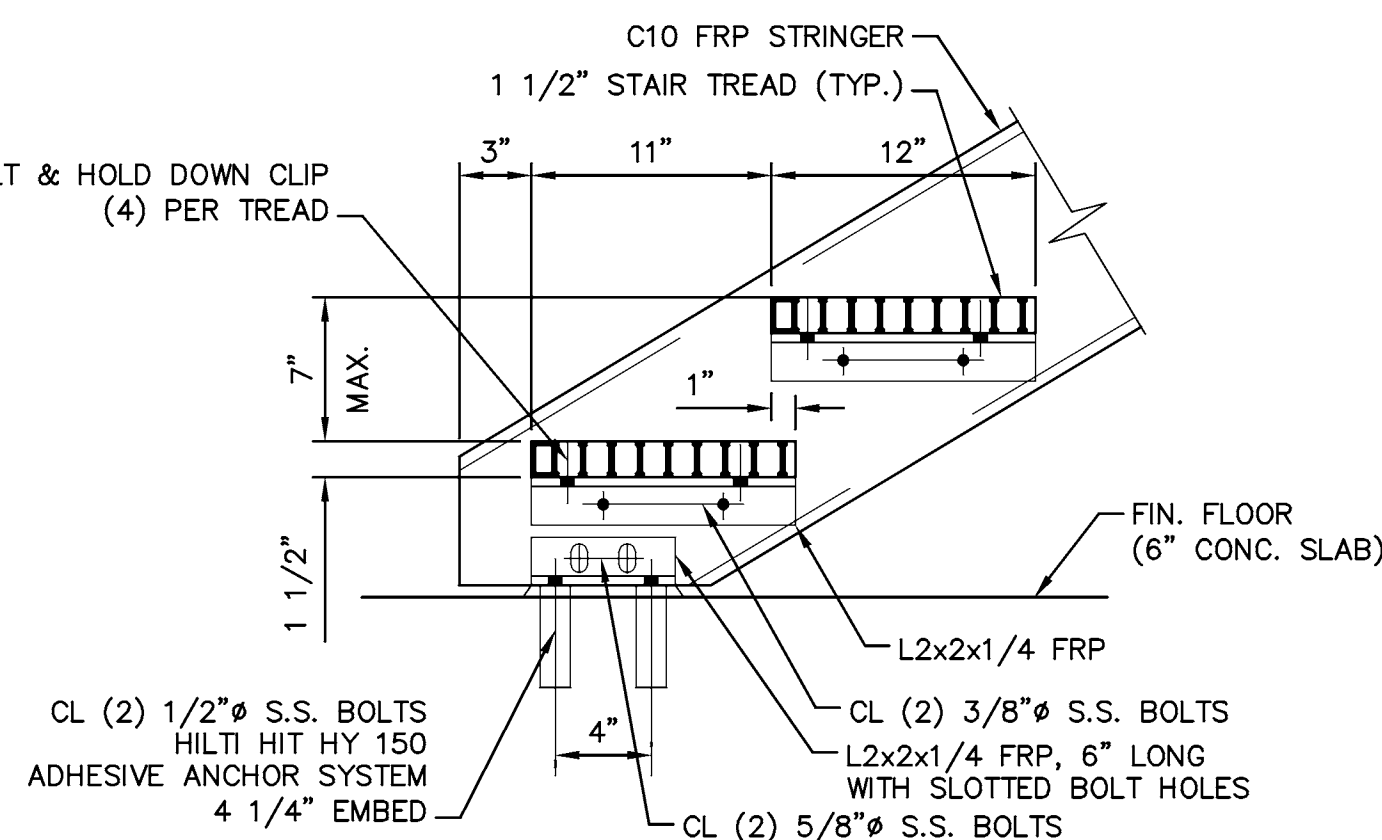
1 1/2" = 1'-0"



ELEVATION

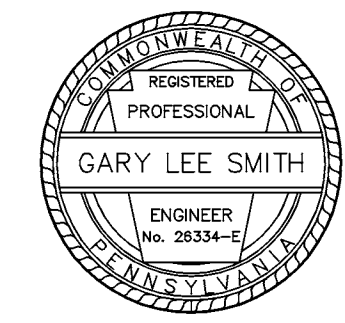
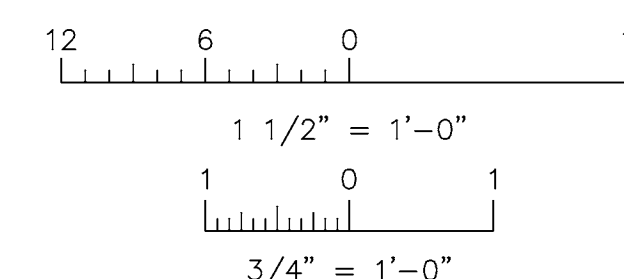
TYPICAL TREAD AND BOTTOM OF STAIR

1 1/2" = 1'-0"

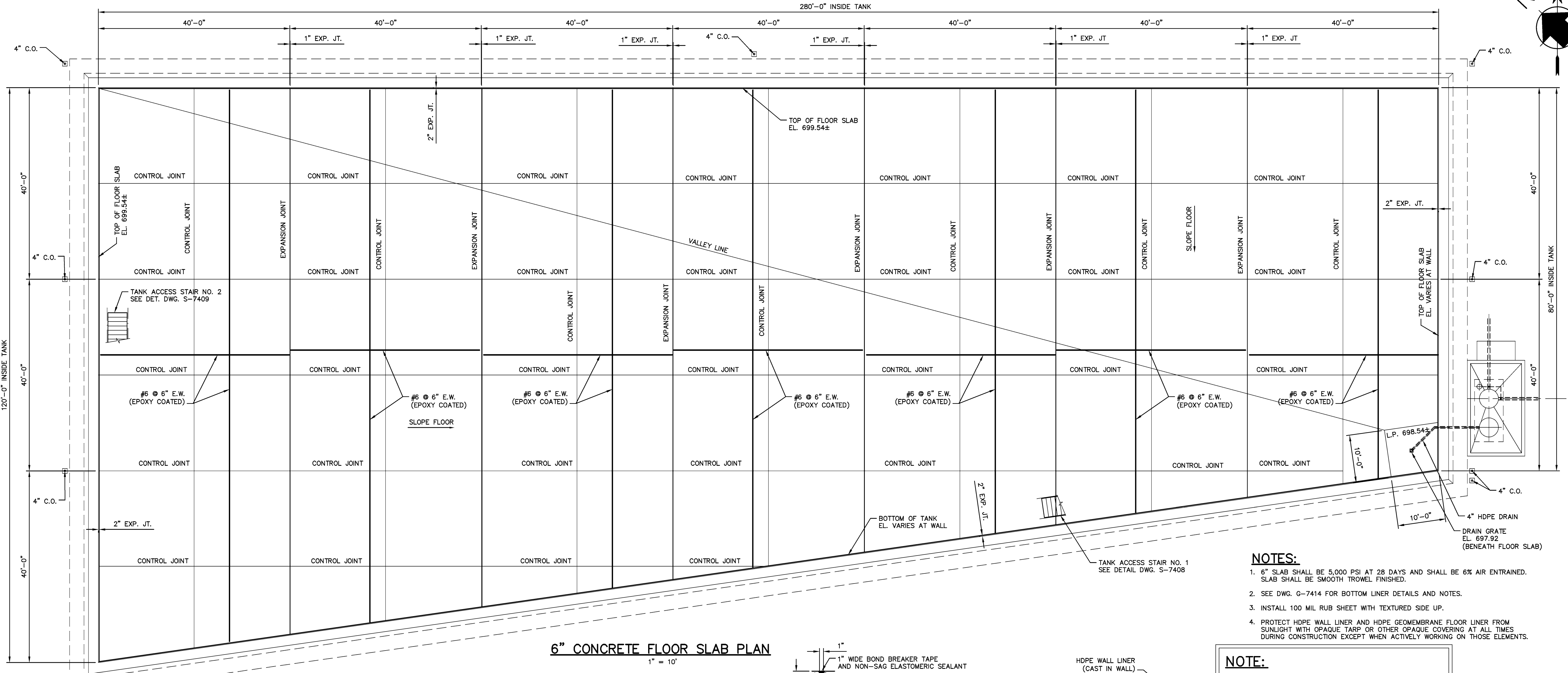
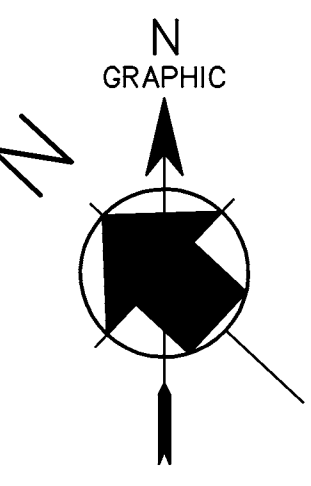


TYPICAL SECTION

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



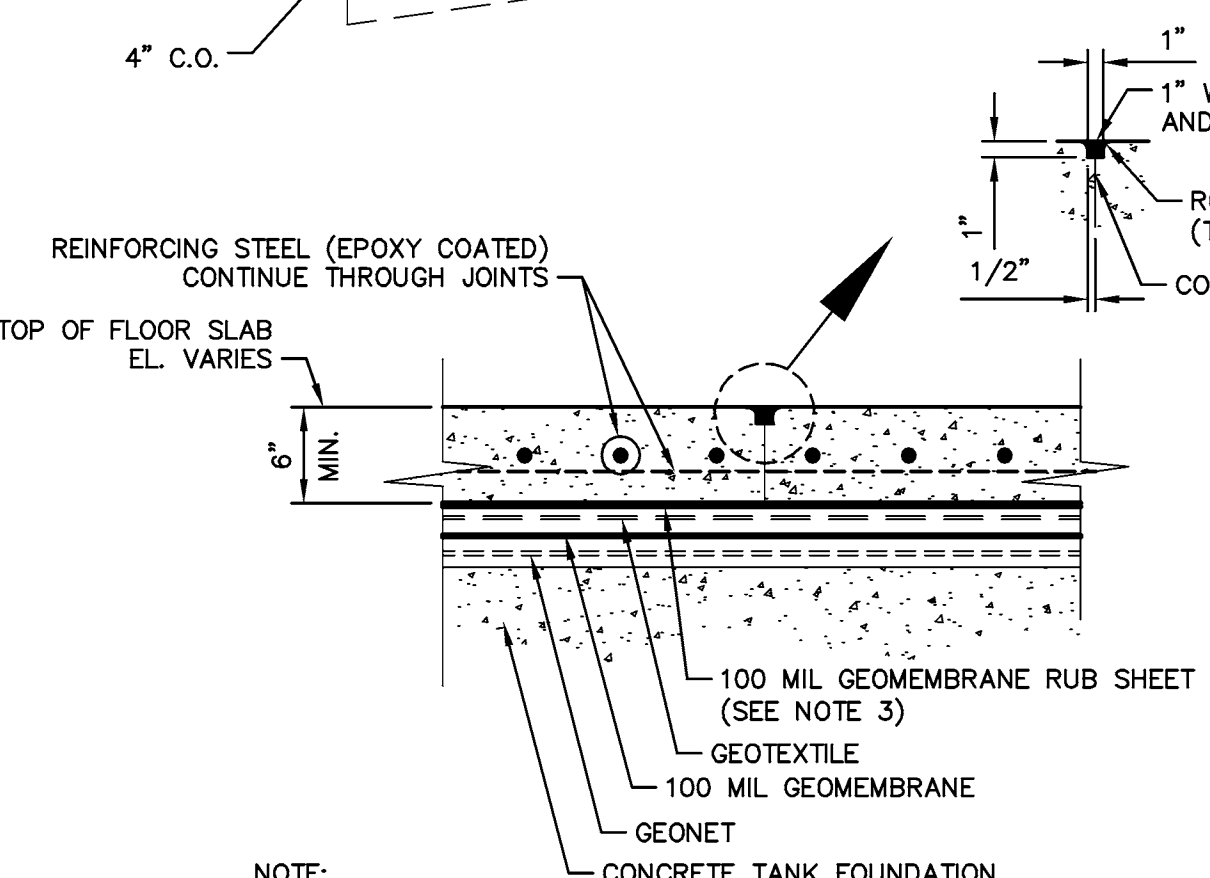
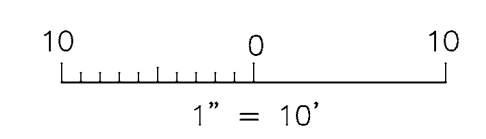
A		2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Drawn	Checked	Approved	
REVISIONS						
DATE RELEASED FOR						
PA-ENG-SEAL-GLS.DWG						
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-1120						
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870						
LEACHATE STORAGE TANK CONSTRUCTION Structural						
MISCELLANEOUS STAIR DETAILS						
GJB	GLS	GLS	PA42-36-S-7407A-11A.DWG	7/8/11		
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date		
20809.00			20809-00	20809-00		
Size - Project	Drawing Number	Rev.	Sheet			
	S - 7411	A	36 of 45			



6" CONCRETE FLOOR SLAB PLAN
1" = 10'

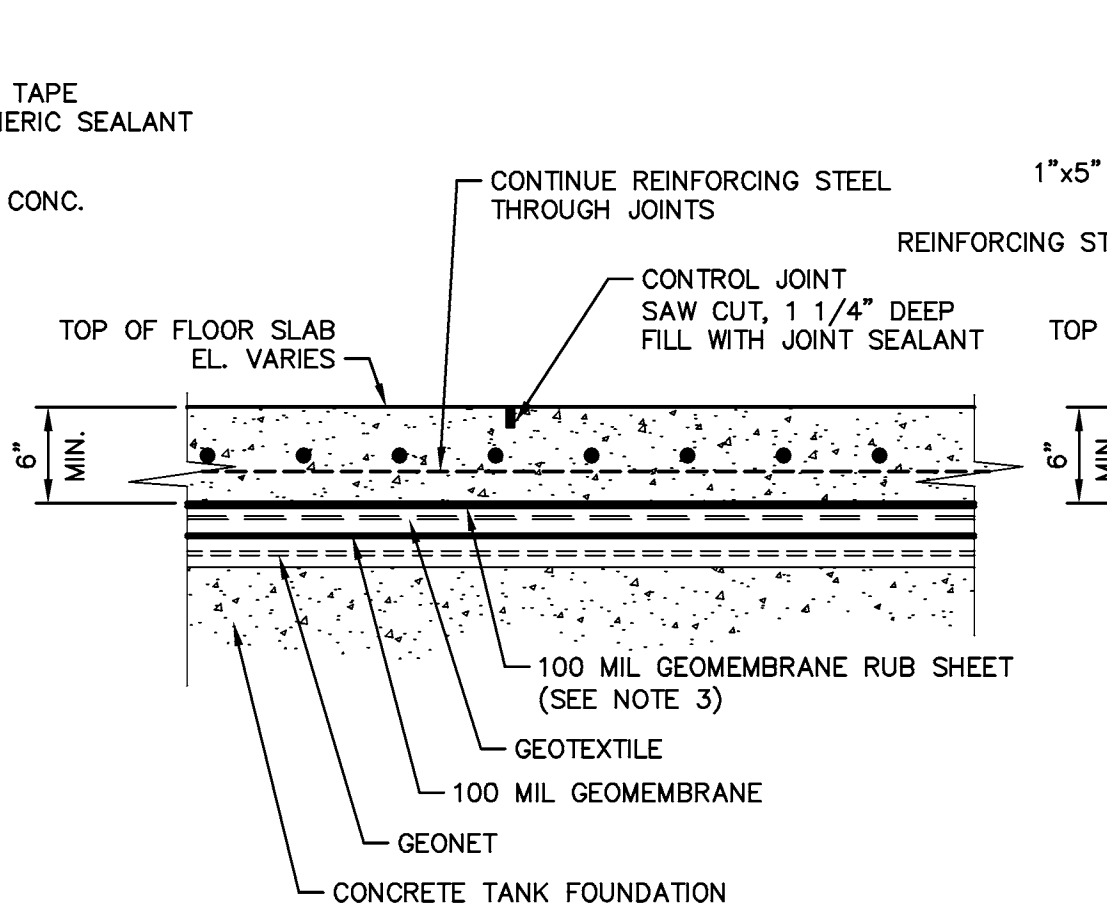
- NOTES:**
- 6" SLAB SHALL BE 5,000 PSI AT 28 DAYS AND SHALL BE 6% AIR ENTRAINED. SLAB SHALL BE SMOOTH TROWEL FINISHED.
 - SEE DWG. G-7414 FOR BOTTOM LINER DETAILS AND NOTES.
 - INSTALL 100 MIL RUB SHEET WITH TEXTURED SIDE UP.
 - PROTECT HDPE WALL LINER AND HDPE GEOMEMBRANE FLOOR LINER FROM SUNLIGHT WITH OPAQUE TARP OR OTHER OPAQUE COVERING AT ALL TIMES DURING CONSTRUCTION EXCEPT WHEN ACTIVELY WORKING ON THOSE ELEMENTS.

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



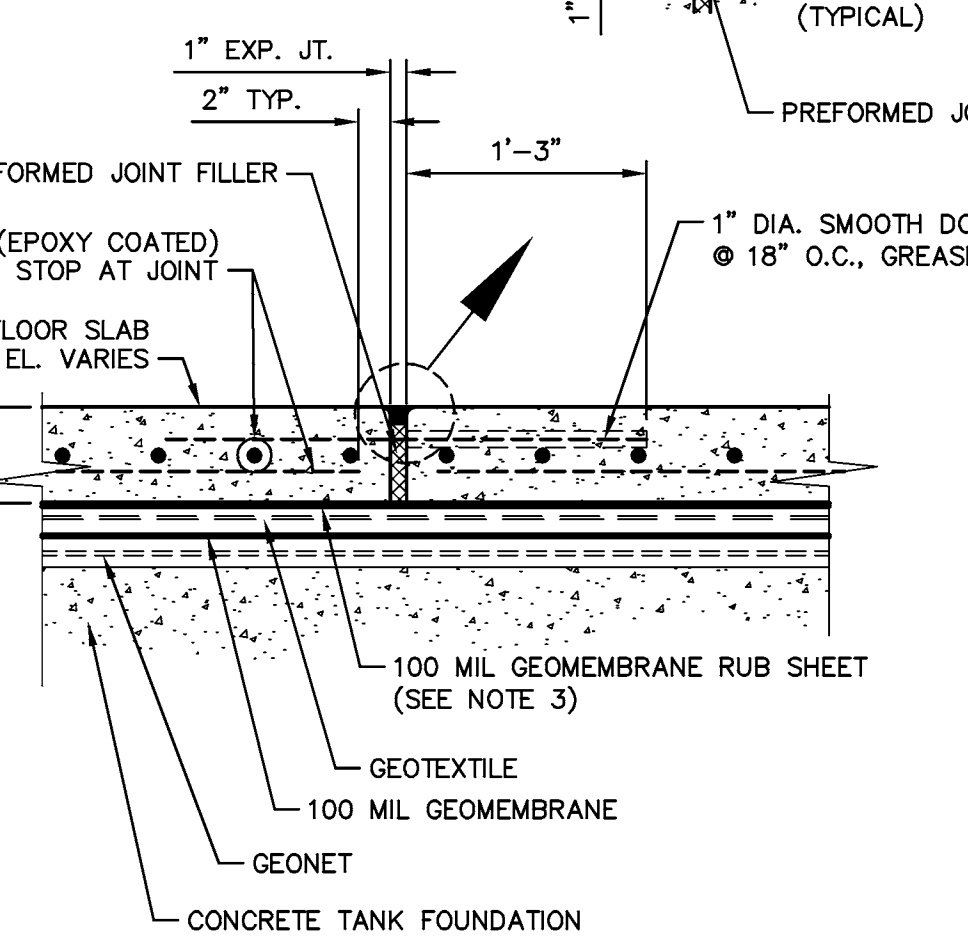
- NOTE:**
- JOINT SHALL BE PROVIDED AT THE END OF EACH DAYS POUR UNLESS OTHERWISE NOTED.
 - CONTRACTOR MAY ADD CONSTRUCTION JOINTS AT ANY CONTROL JOINT LOCATION SHOWN WHICH IS MORE THAN 40 FEET FROM THE WALL OF THE TANK.

Typ. 6" Slab Construction Joint
NOT-TO-SCALE

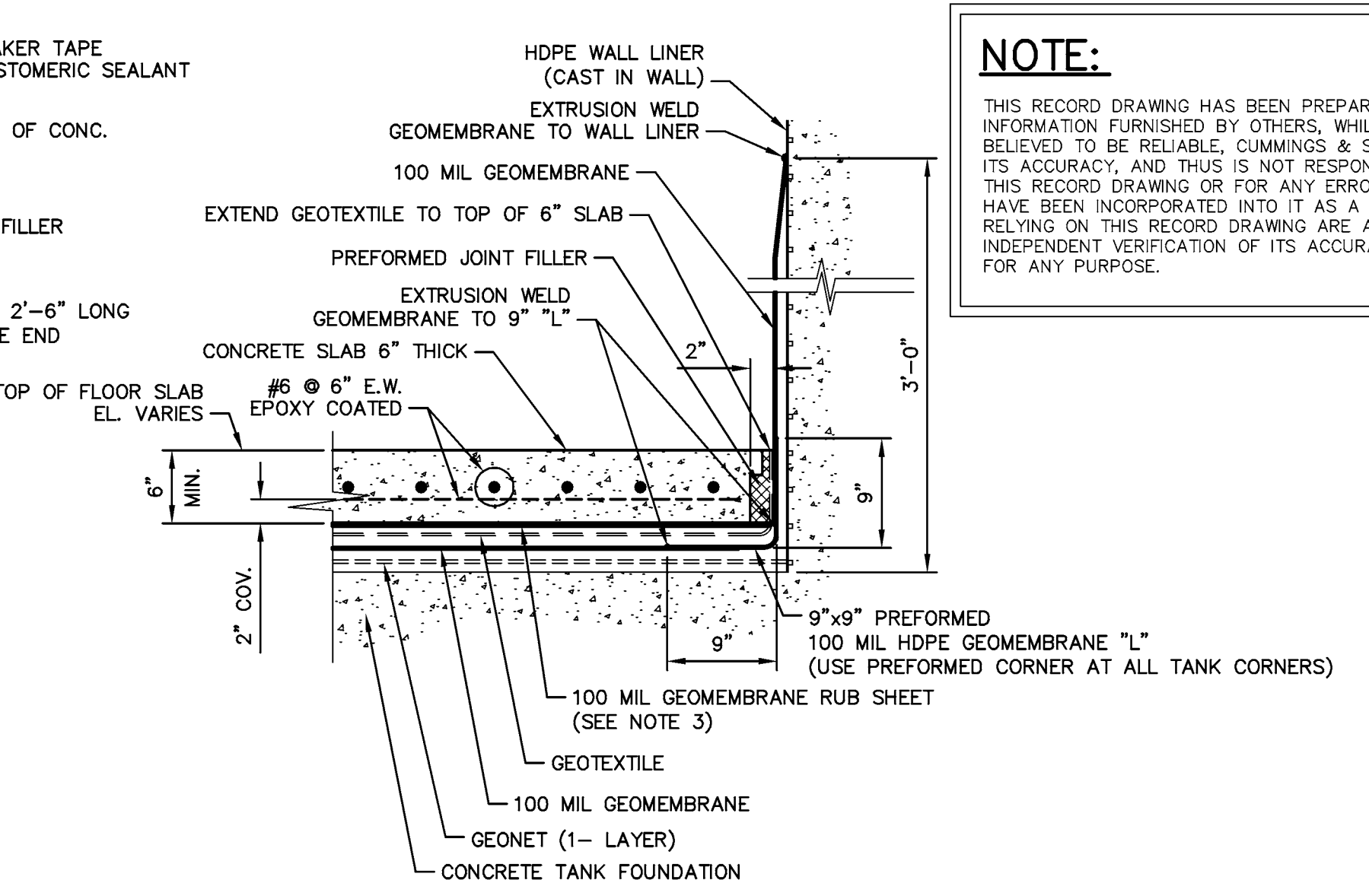


- NOTE:**
SAW CUT JOINTS WITH CONCRETE SAW AS SOON AS POSSIBLE AFTER FINAL SLAB FINISHING. JOINTS SHALL BE PLACED AT 20'-0" O.C. MAXIMUM.

TYPICAL 6" SLAB CONTROL JOINT
NOT-TO-SCALE

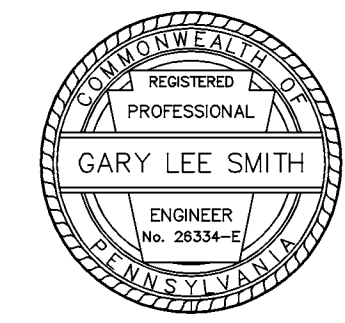


TYPICAL 6" SLAB EXPANSION JOINT
NOT-TO-SCALE



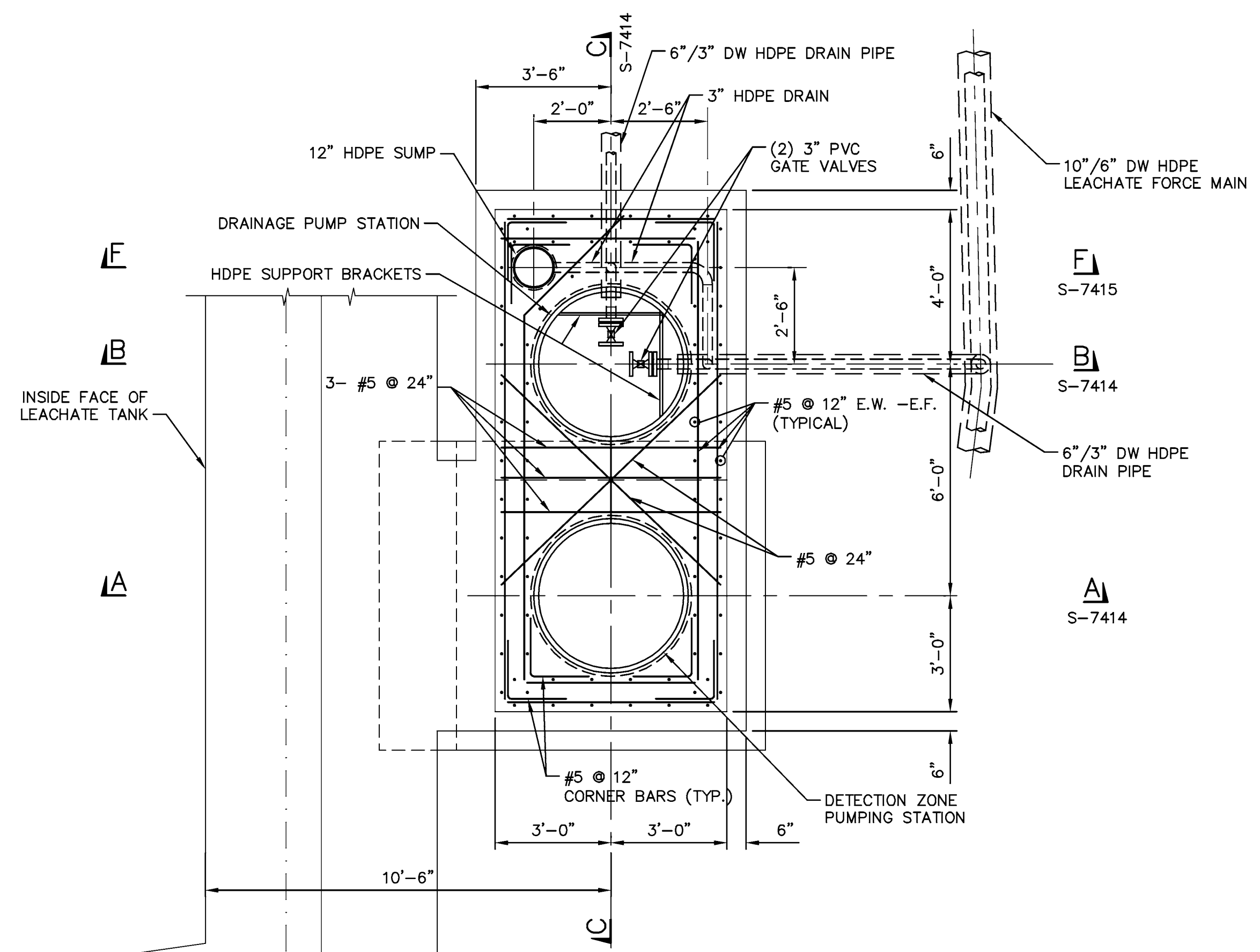
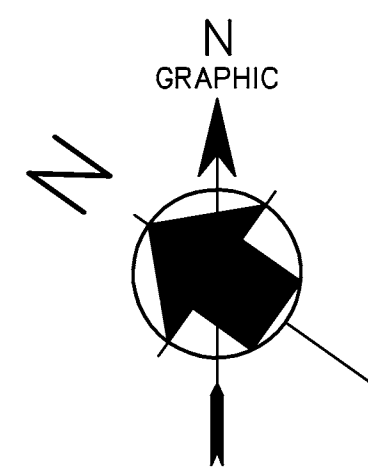
TYPICAL 6" SLAB AT WALL
NOT-TO-SCALE

A	2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Made	Check	App'd.
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
XREF Name	Attached XREF File Name	Insertion Point	Block	Layer	
Cummings & Smith, Inc.					
Consulting Engineers					
20 Bentley Place Upper Merion, NJ 07043 973-744-3353					
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA					
ALLENWOOD LANDFILL					
447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
Structural					
LEACHATE STORAGE TANK					
CONCRETE FLOOR SLAB ABOVE LINER					
GJB	GLS	GLS	File: 37-S-7412-A.DWG	9/8/11	
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date	
20809.00			20809-00		
Size - Project			Drawing Number		Rev.
			S - 7412		A 37 of 45

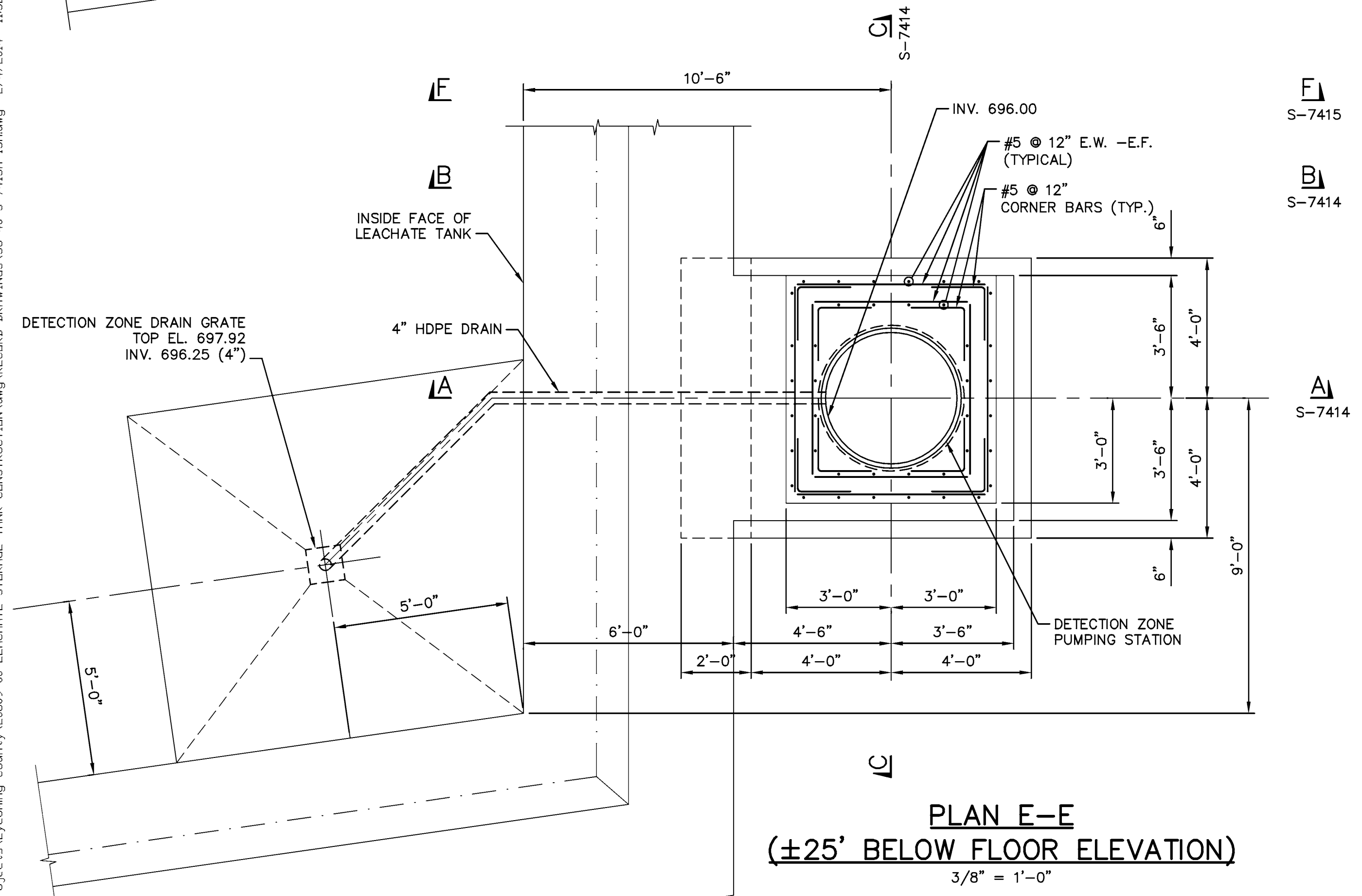


E:\Land 2005 Projects\Lycoming County\Leachate Storage Tank Construction.dwg\RECORD DRAWINGS\37-S-7412-A.dwg 2/7/2014 10:39:36 PM EST

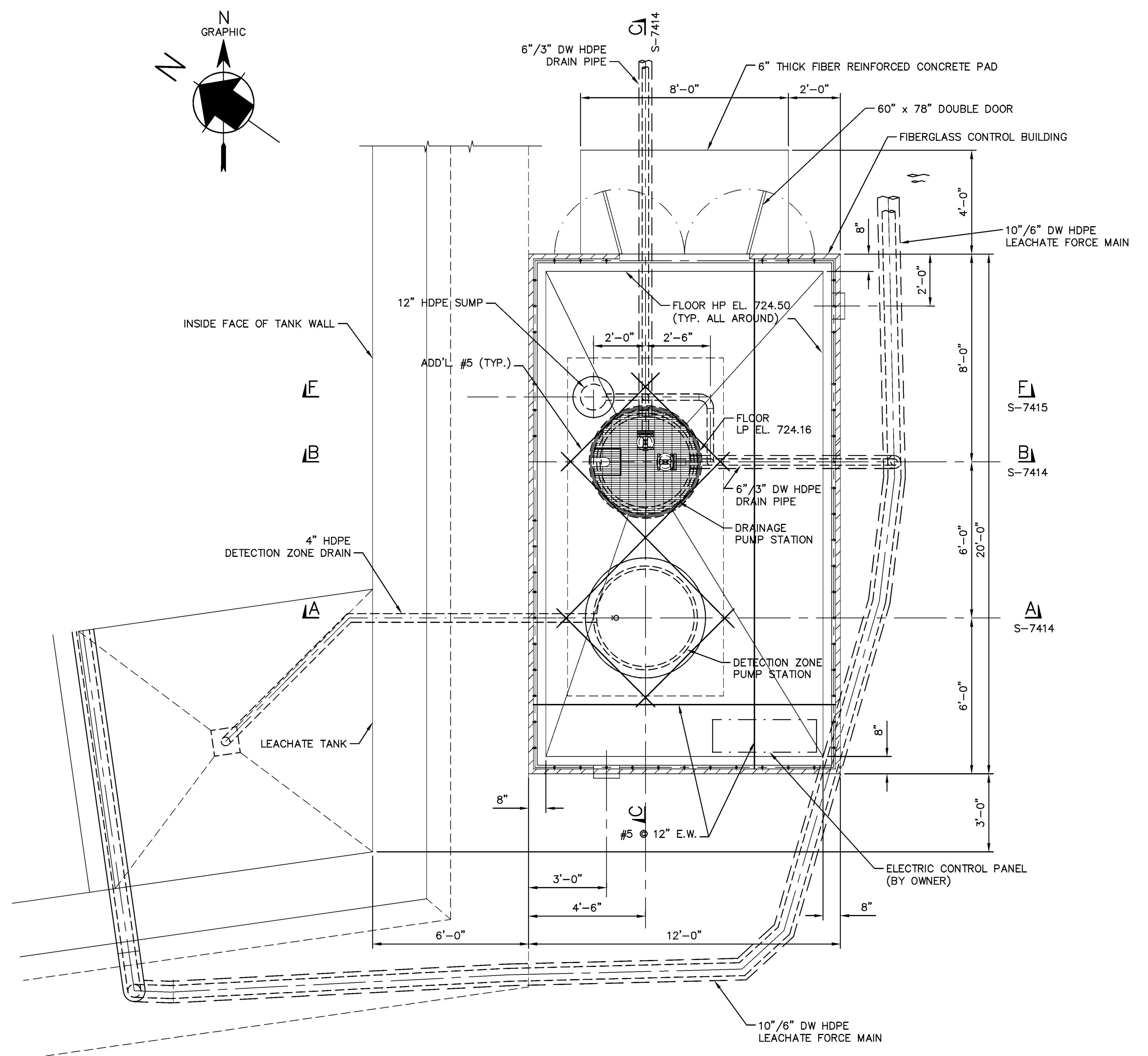
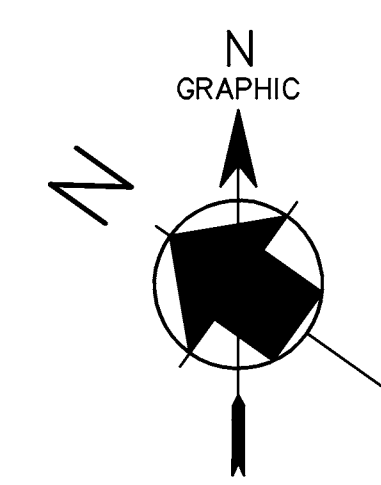
E:\Land 2005 Projects\Lycoming County\120889-00 LEACHATE STORAGE TANK CONSTRUCTION.dwg RECORD DRAWING 2/4/2014 11:52:03 AM EST



PLAN D-D
(±6' BELOW FLOOR ELEVATION)
3/8" = 1'-0"



PLAN E-E
(±25' BELOW FLOOR ELEVATION)
3/8" = 1'-0"



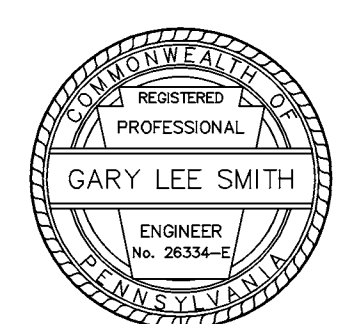
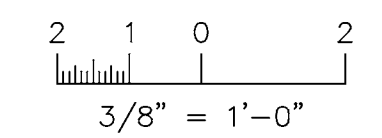
PLAN - MAIN FLOOR LEVEL
3/8" = 1'-0"

NOTES:

- SEE DWG'S. G-7415 THROUGH G-7418 FOR PIPING AND EQUIPMENT.
- SEE DWG. S-7404 FOR WATERSTOP DETAIL.

NOTE:

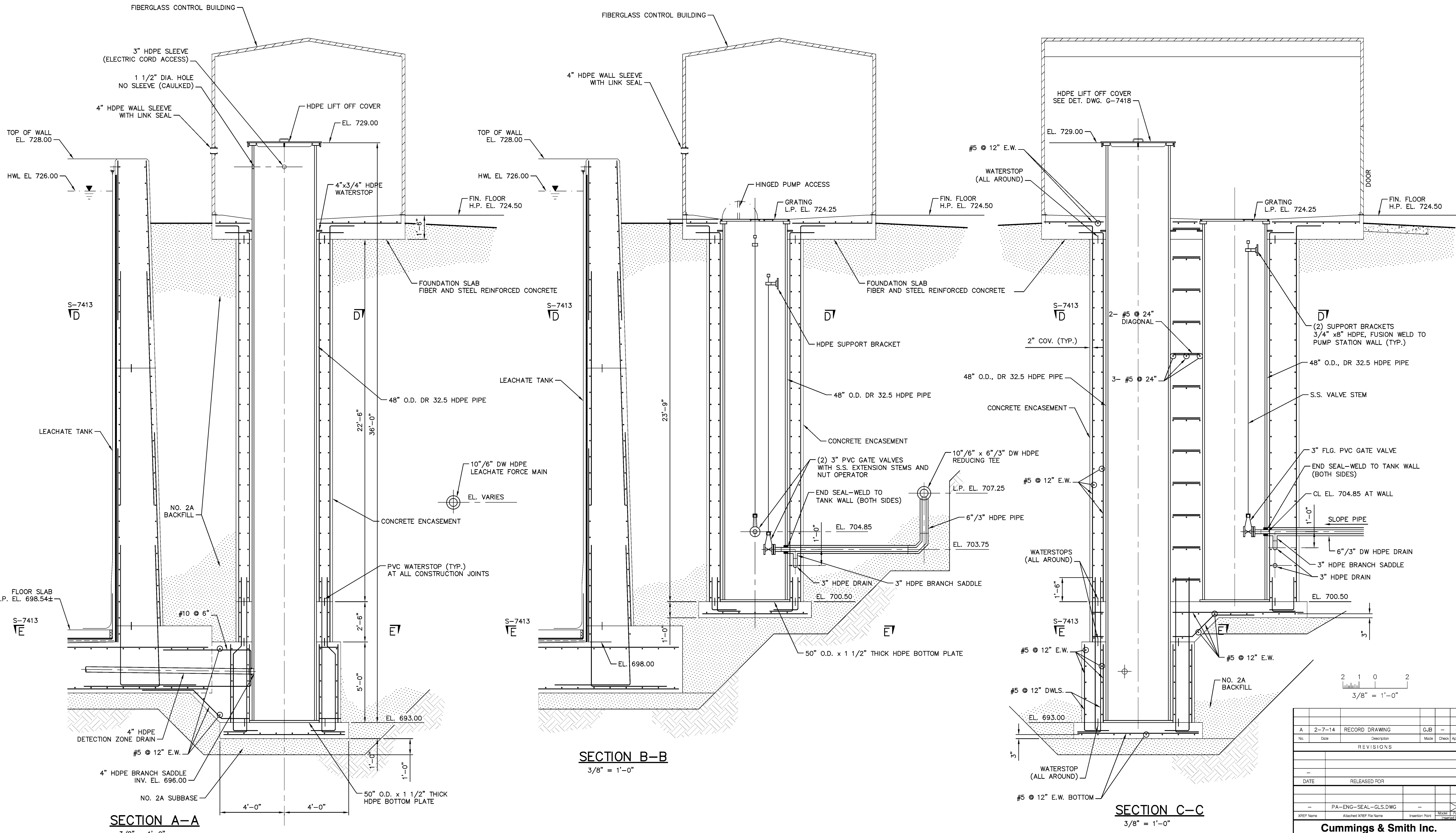
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



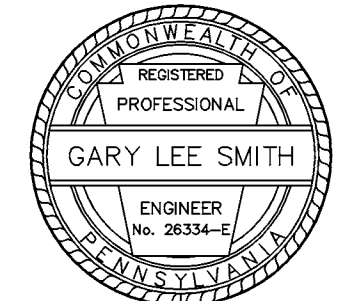
A		2-7-14	RECORD DRAWING	GJB	-	-
No.	Date	Description	Maker	Check	Appr.	
REVISIONS						
DATE		RELEASED FOR				
PA-ENG-SEAL-GLS.DWG						
XREF Name	Attached XREF File Name	Insertion Point	Block	Layer	Color	Weight
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120						
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870						
LEACHATE STORAGE TANK CONSTRUCTION						
Structural CONTROL BUILDING PLANS						
GJB	GLS	GLS	PA-ENG-SEAL-GLS.DWG	7/8/11		
Drawn	Checked	Approved	Plot Scale:	20809-00	Date	
D-20809.00			S - 7413	A	38	of 45
Size - Project		Drawing Number		Rev.	Sheet	

© 2011 Cummings & Smith, Inc.

E:\Land 2005 Projects\Lycoming County\Storagetank\CD\RECORD DRAWINGS\38-40-S-7413A-15A.dwg 2/4/2014 10:53:43 AM EST



NOTE:
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Drawn	Check	Appr.
A	2-7-14	RECORD DRAWING	GJB	-	-

DATE	RELEASED FOR
-	-

XREF Name	Attached XREF File Name	Insertion Point	Insertion Date
-	PA-ENG-SEAL-GLS.DWG	-	-

Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merion, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

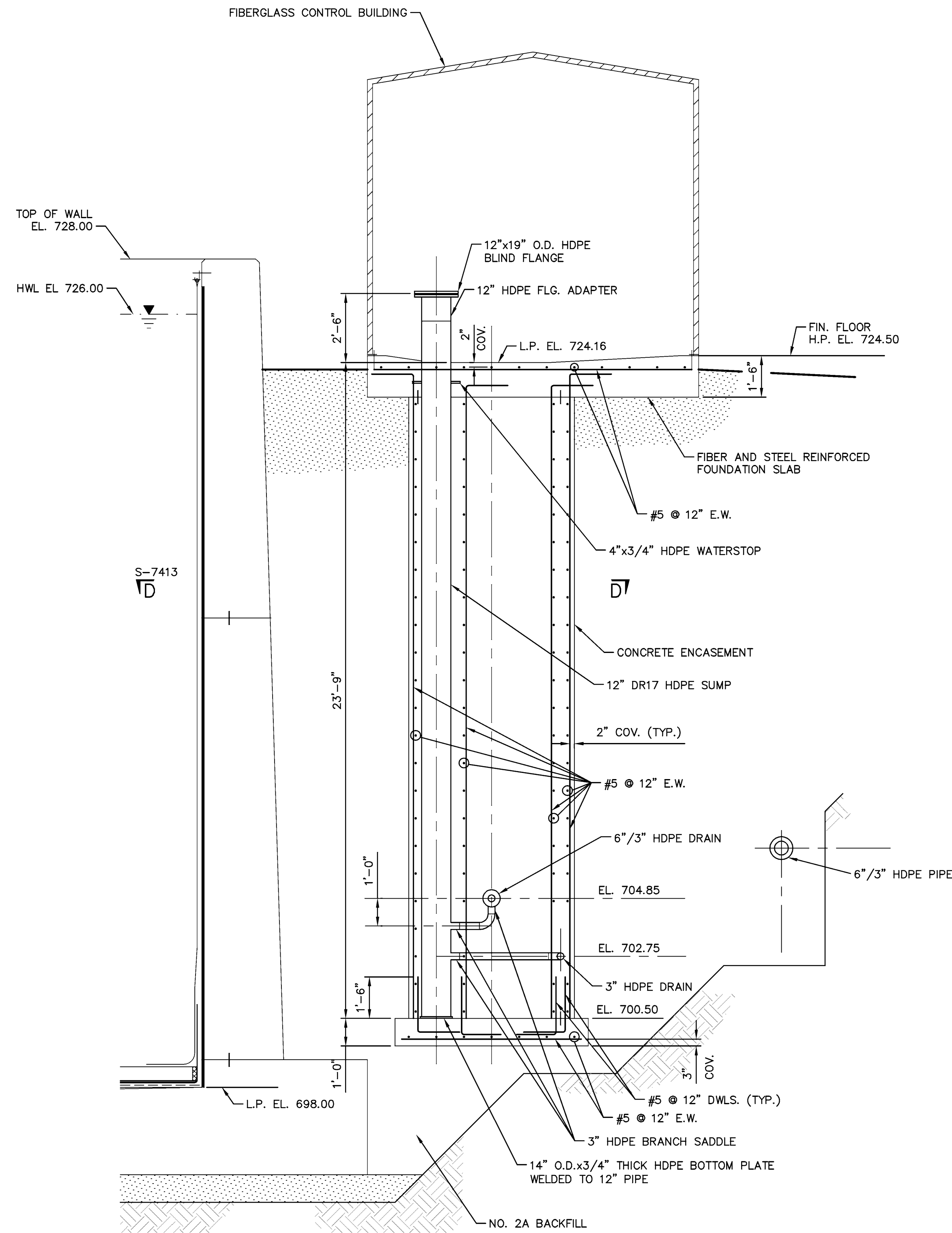
LEACHATE STORAGE TANK CONSTRUCTION

Structural
CONTROL BUILDING
SECTIONS-1

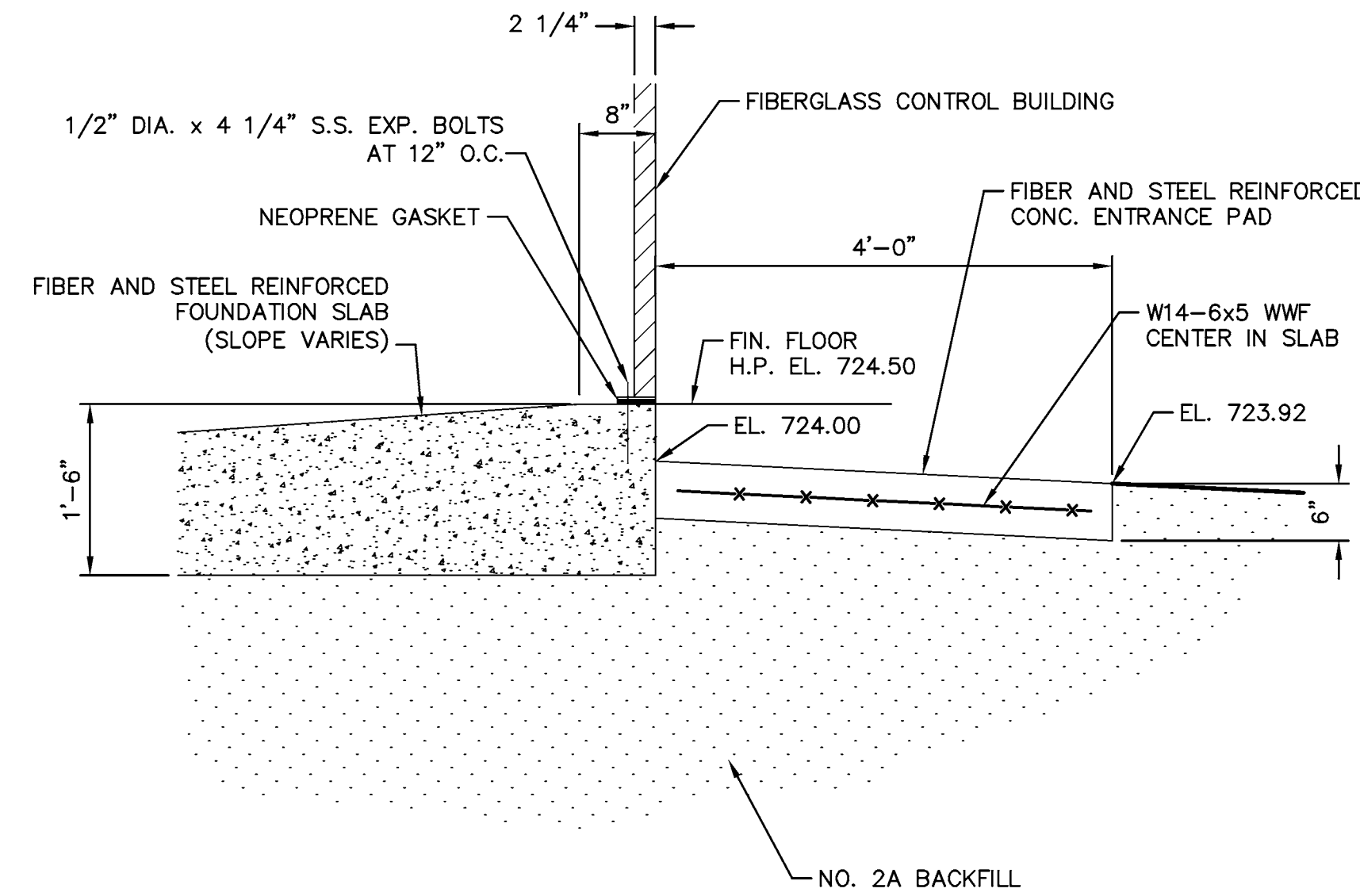
GJB	GLS	GLS	PA-ENG-SEAL-GLS.DWG	7/8/11
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
D-20809.00			20809.00	

© 2011 Cummings & Smith, Inc.

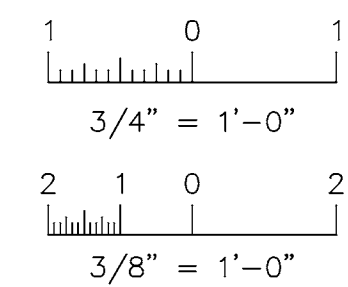
E:\Land 2005 Projects\Lycoming County\STORAGE TANK CONSTRUCTION\DWG\RECORD DRAWINGS\38-40-S-7413A-ISA.dwg 2/4/2014 11:59:23 AM EST



SECTION F-F
3/8" = 1'-0"

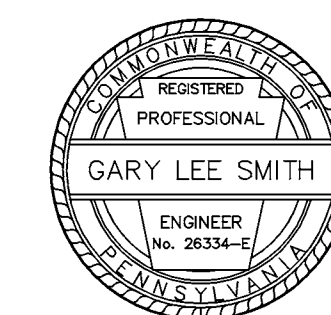


DETAIL - TYPICAL WALL SECTION
3/4" = 1'-0"



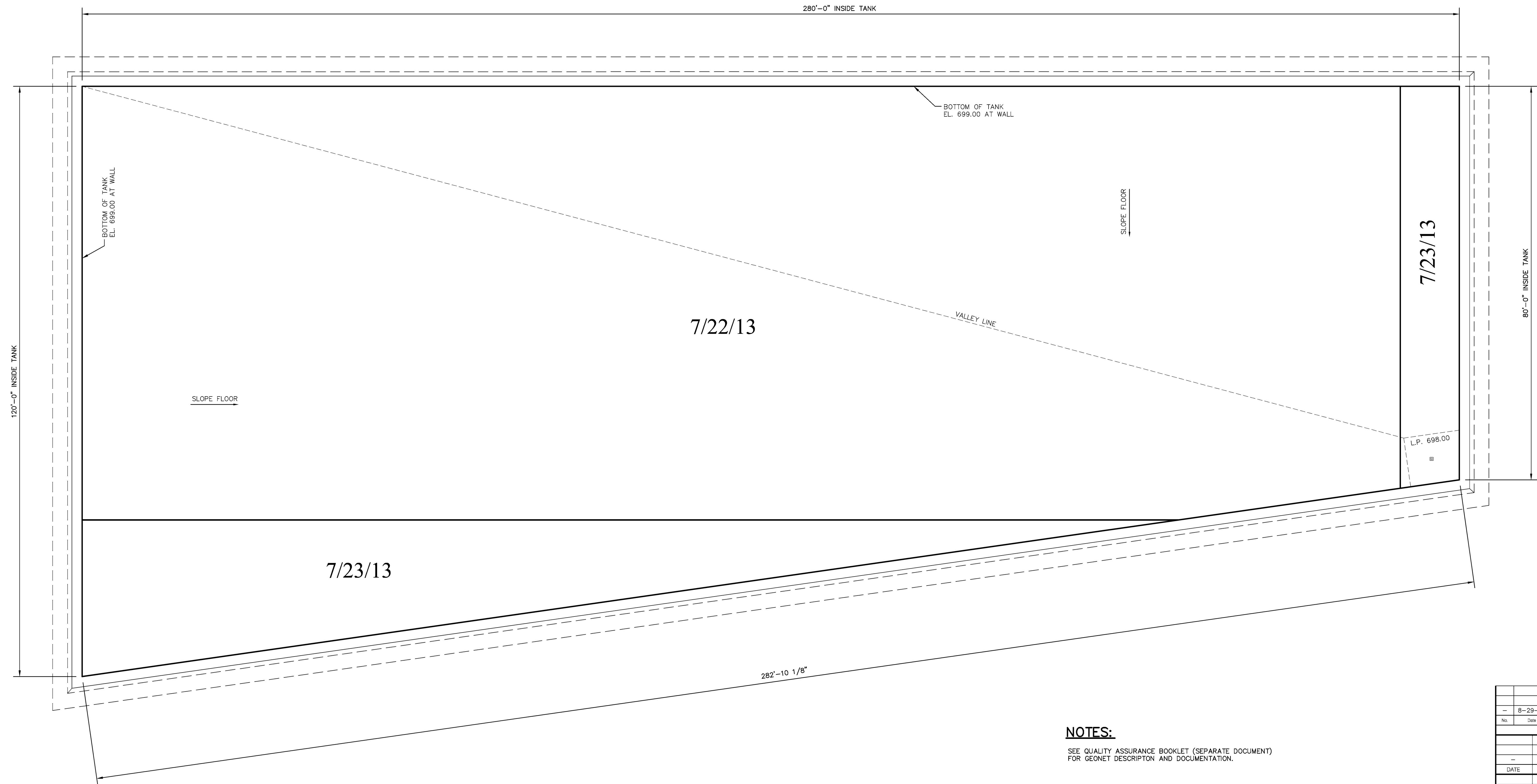
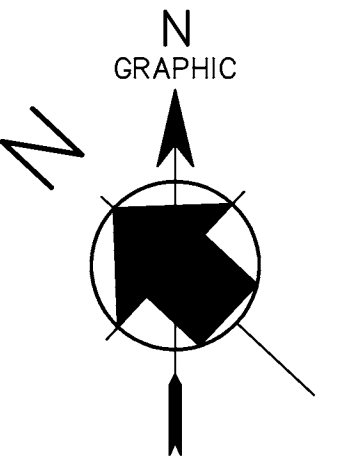
NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	Made	Check	App'd.
REVISIONS					
A	2-7-14	RECORD DRAWING	GJB	-	-
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG					
Cummings & Smith Inc. Consulting Engineers 20 Bentley Place Upper Merionide, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA ALLENWOOD LANDFILL 447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
CONTROL BUILDING SECTIONS-2					
GJB	GLS	GLS	PA-ENG-SEAL-GLS.DWG	7/8/11	
Drawn	Checked	Approved	Plot Scale: 20809.00	Date	
D-20809.00		S - 7415		A 40 of 45	
Size - Project		Drawing Number		Rev. Sheet	

© 2011 Cummings & Smith, Inc.

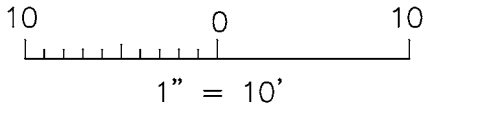


HyperNet HS

Roll#

7/22/13
 131415830
 131415829
 131416308
 131415918
 131416309
 131415831

7/23/13
 131415828
 131415917



NOTES:

SEE QUALITY ASSURANCE BOOKLET (SEPARATE DOCUMENT) FOR GEONET DESCRIPTION AND DOCUMENTATION.

PLAN - GEONET LAYER
 1" = 10'

NOTE:

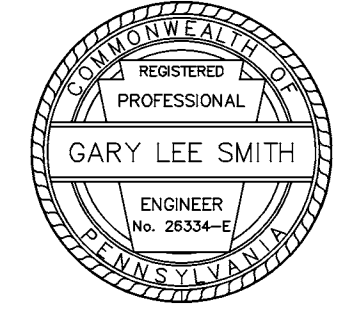
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	Date	Description	Drawn	Checked	Appr.
8-29-13		RECORD DRAWING	GJB	GLS	GLS

REVISIONS

DATE	RELEASED FOR

XREF Name	Attached XREF File Name	Insertion Point	Model	Paper



Cummings & Smith Inc.
 Consulting Engineers
 20 Bentley Place Upper Merion, NJ 07043 973-744-3353
 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

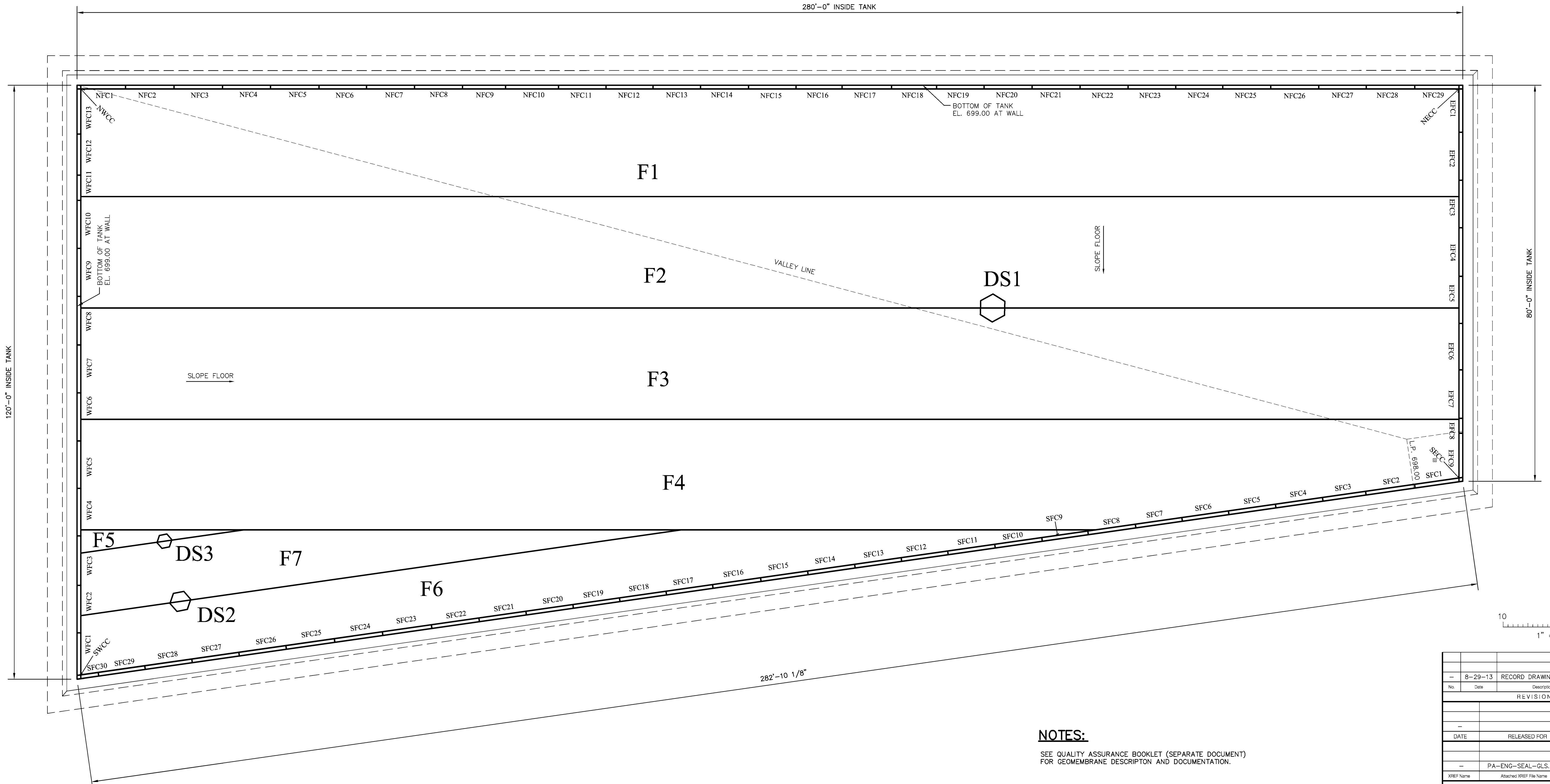
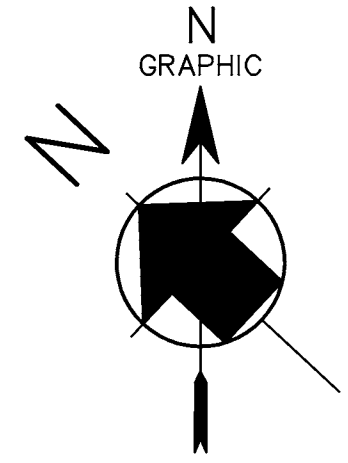
COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
 447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
 TANK LINER SYSTEM
LEACHATE STORAGE TANK
PLAN - GEONET LAYER

GJB	GLS	GLS	File: 41-44-TL-7401-4.DWG	8-29-13
Drawn	Checked	Approved	Plot Scale: 1"=1'	Date
20809.00			20809.00	

Site - Project: **TL - 7401** - **41** of **45**
 Drawing Number: Rev: Sheet

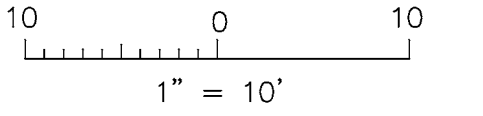
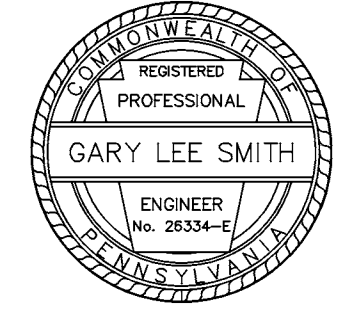
F:\proj\2008_projects\yearling\5-11\20809-00_TANK_LINER_SYSTEM\TANK_CONSTRUCTION\TANK_CONSTRUCTION\TANK_CONSTRUCTION\DRAWINGS\41-44-TL-7401-4.dwg, 7/24/2014 1:18:58 PM



PLAN - GEOMEMBRANE LAYER
1" = 10'

NOTES:
SEE QUALITY ASSURANCE BOOKLET (SEPARATE DOCUMENT) FOR GEOMEMBRANE DESCRIPTION AND DOCUMENTATION.

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	By	Check	Appr.
8-29-13		RECORD DRAWING	GJB	GLS	GLS

DATE	RELEASED FOR

XREF Name	Attached XREF File Name	Insertion Point	Model	Sheet

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120

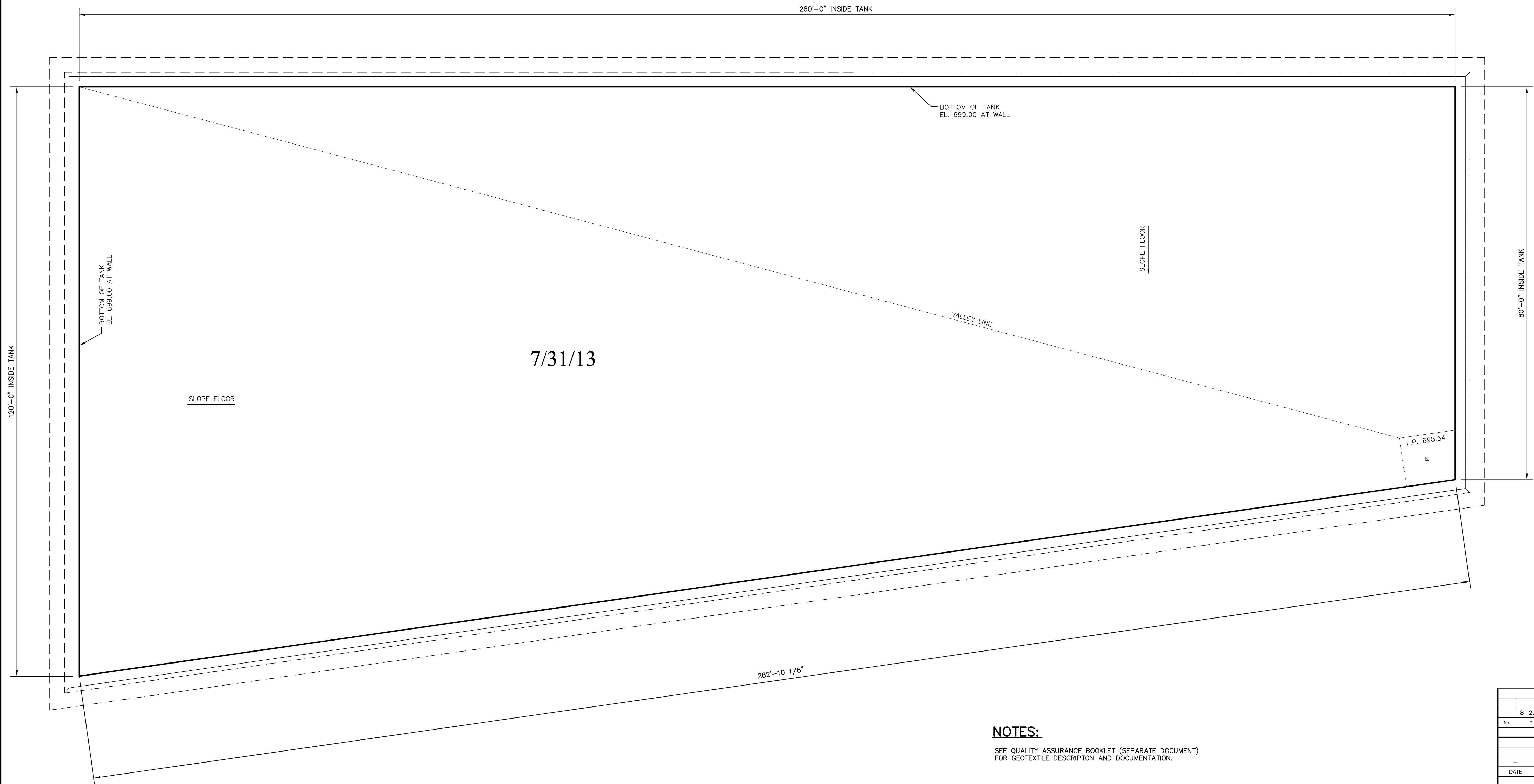
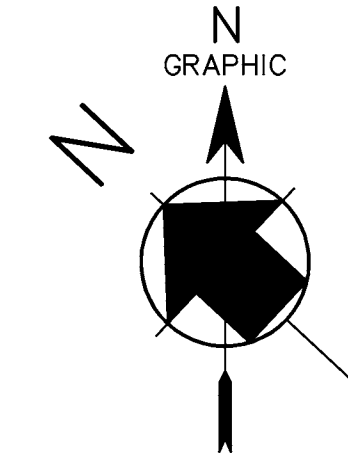
**COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL**
447 Alexander Avenue Montgomery, PA 17752 570-547-1870

LEACHATE STORAGE TANK CONSTRUCTION
TANK LINER SYSTEM
**LEACHATE STORAGE TANK
PLAN - GEOMEMBRANE LAYER**

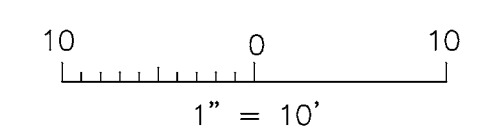
GJB	GLS	GLS	File: 41-44-TL-7401-4.DWG	8-29-13
Drawn	Checked	Approved	Plot Scale: 1"=10'	Date
20809.00			20809-00	

Site - Project: **TL - 7402** Drawing Number: **42** of **45**

F:\proj\2008\proj\leach\leach\plan\geomembrane\geomembrane.dwg (2/1/2014 1:18:20 PM)



- 32oz Geotextile
- Roll#**
- 7/31/13
 - 130449576
 - 130449580
 - 130449583
 - 130449582
 - 130449563
 - 130449579
 - 130449578
 - 130449577
 - 130449581
 - 130449591
 - 130449564
 - 130449587
 - 130449574
 - 130449589
 - 130449590
 - 130449588
 - 130449575
 - 130449584
 - 130449585
 - 130449592



NOTES:

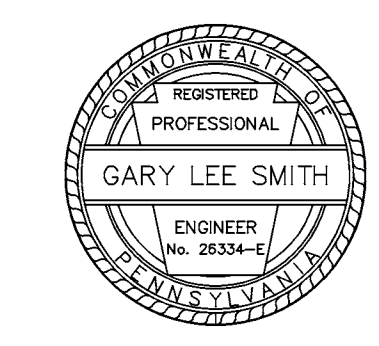
SEE QUALITY ASSURANCE BOOKLET (SEPARATE DOCUMENT) FOR GEOTEXTILE DESCRIPTION AND DOCUMENTATION.

PLAN - GEOTEXTILE LAYER

1" = 10'

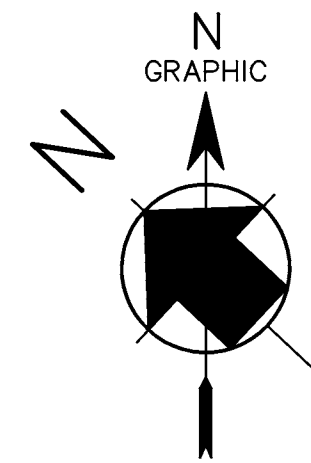
NOTE:

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	By	Check	Appr.
8-29-13		RECORD DRAWING	GJB	GLS	GLS
REVISIONS					
DATE RELEASED FOR					
PA-ENG-SEAL-GLS.DWG XREF Name: Attached XREF File Name: Insertion Point: Model: Paper:					
Cummings & Smith Inc.					
Consulting Engineers 20 Bentley Place Upper Merion, NJ 07043 973-744-3353 8163 U.S. Highway 15 Montgomery, PA 17752 570-547-7120					
COUNTY OF LYCOMING, PA					
ALLENWOOD LANDFILL					
447 Alexander Avenue Montgomery, PA 17752 570-547-1870					
LEACHATE STORAGE TANK CONSTRUCTION					
TANK LINER SYSTEM					
LEACHATE STORAGE TANK					
PLAN - GEOTEXTILE LAYER					
GJB	GLS	GLS	File: 41-44-TL-7403-4.DWG	8-29-13	
Drawn	Checked	Approved	Plot Scale: 1"=1'		
20809.00			20809-00		
Site - Project	TL - 7403			43	of 45
	Drawing Number	Rev.		Sheet	

F:\proj\2008\proj\pa\lycom\csm\CONSTRUCTION\YTCORR\DRAWINGS\41-44-7-7403-4.dwg, 7/31/2013, 1:20:45 PM



280'-0" INSIDE TANK

BOTTOM OF TANK
EL. 699.00 AT WALL

RB1

RB2

BOTTOM OF TANK
EL. 699.00 AT WALL

SLOPE FLOOR

VALLEY LINE

RB3

SLOPE FLOOR

80'-0" INSIDE TANK

120'-0" INSIDE TANK

RB7

RB6

RB5

L.P. 698.54

RB4

282'-10 1/8"

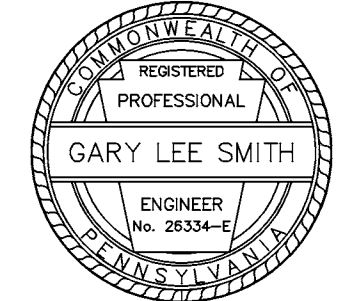
10 0 10
1" = 10'

NOTES:

SEE QUALITY ASSURANCE BOOKLET (SEPARATE DOCUMENT)
FOR RUB STRIP DESCRIPTION AND DOCUMENTATION.

PLAN - 100 MIL HDPE RUB STRIP LAYER
1" = 10'

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	By	Check	Appr.
8-29-13		RECORD DRAWING	GJB	GLS	GLS

DATE	RELEASED FOR

XREF Name	Attached XREF File Name	Insertion Point	Model	Sheet

Cummings & Smith Inc.
Consulting Engineers
20 Bentley Place Upper Merion, NJ 07043 973-744-3353
8163 U.S. Highway 15 Montgomerly, PA 17752 570-547-7120

COUNTY OF LYCOMING, PA
ALLENWOOD LANDFILL
447 Alexander Avenue Montgomerly, PA 17752 570-547-1870

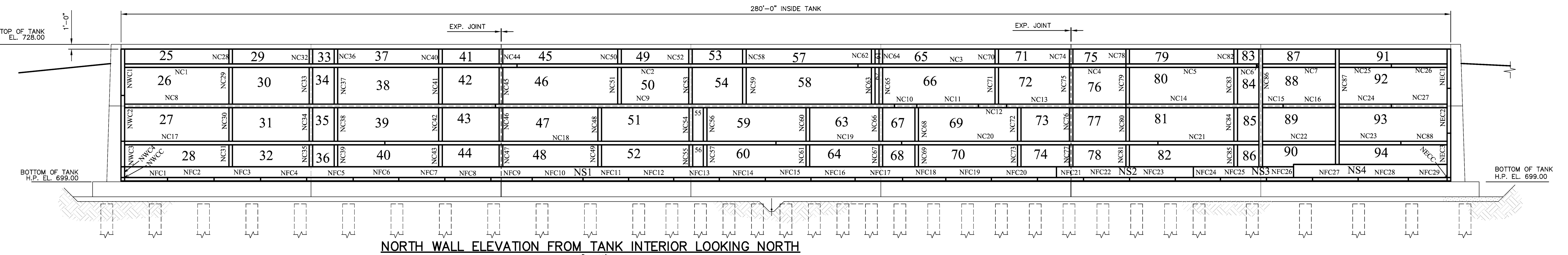
LEACHATE STORAGE TANK CONSTRUCTION

TANK LINER SYSTEM
LEACHATE STORAGE TANK
PLAN - 100 MIL HDPE RUB STRIP LAYER

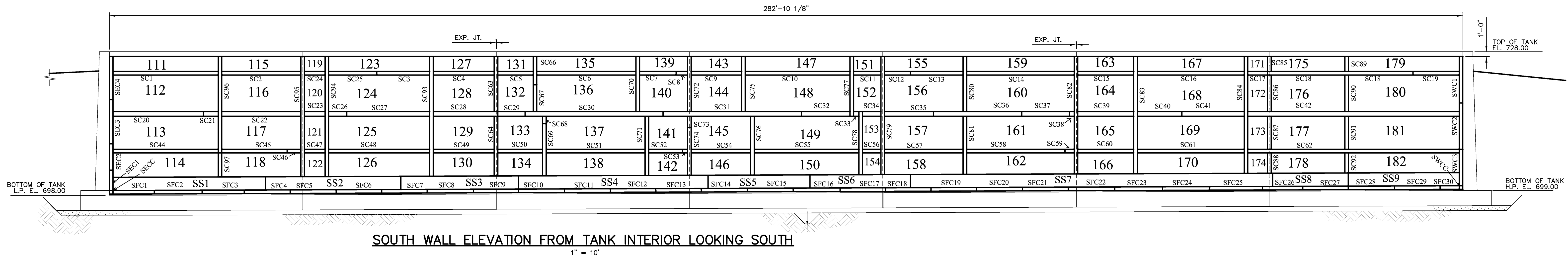
GJB	GLS	GLS	File: 41-44-TL-7404-4.DWG	8-29-13
Drawn	Checked	Approved	Plot Scale: 1"=10'	Date
20809.00			20809-00	

Site - Project Drawing Number Rev. Sheet
TL - 7404 - 44 of 45

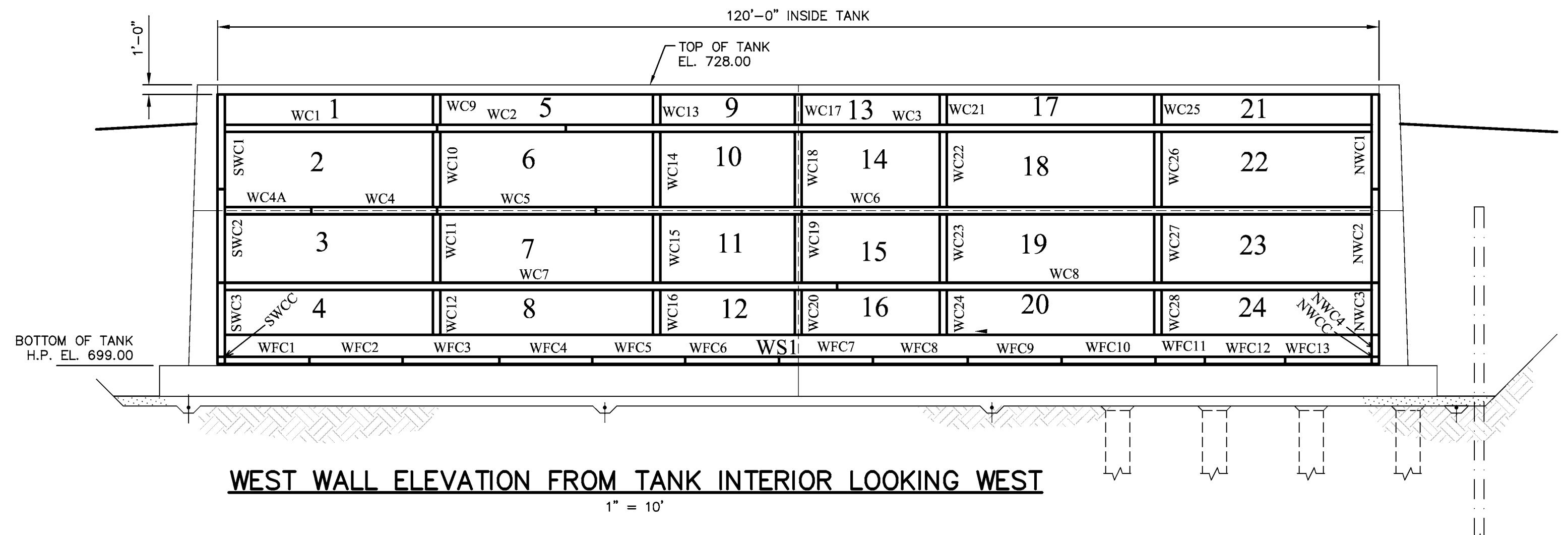
F:\Users\gsmith\working\2013\Projects\20809-00\1\ACI\ATL\310313ATL_TANK_CONSTRUCTION\VTCCORR-DRAWINGS\41-44-7-7404-4.dwg, 7/1/2014 1:25:14 PM



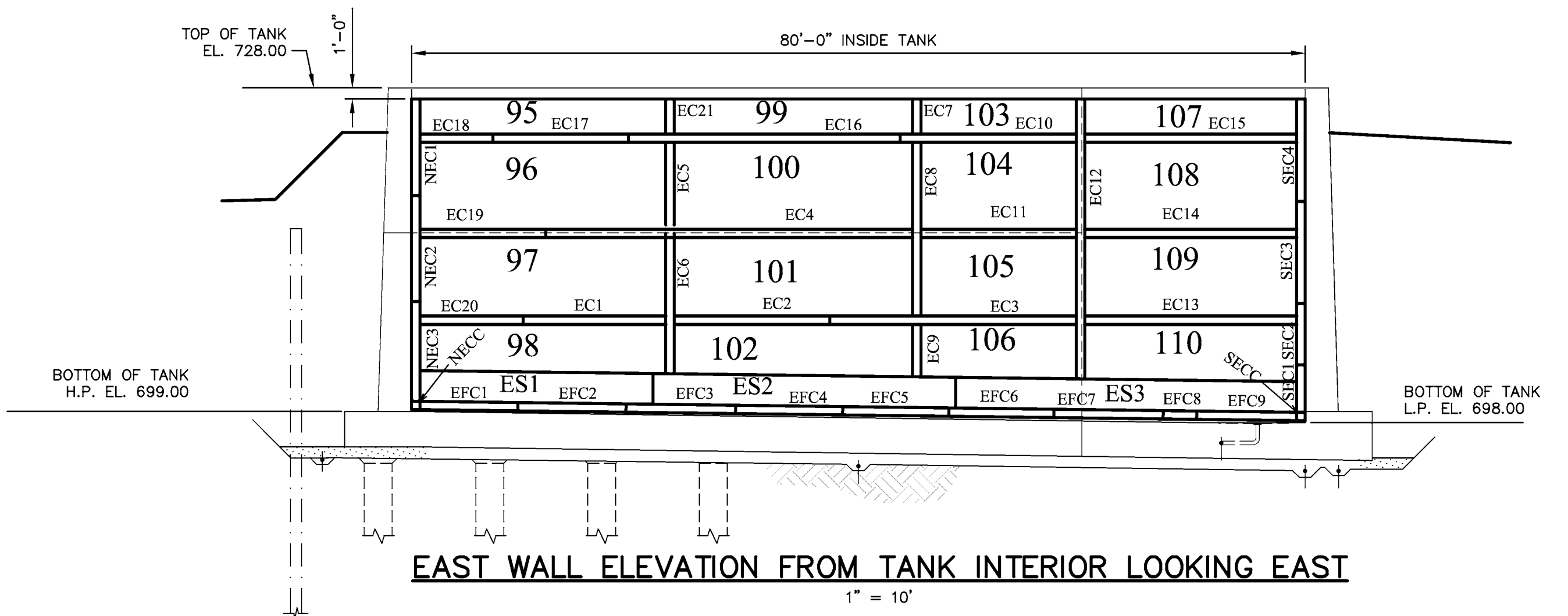
NORTH WALL ELEVATION FROM TANK INTERIOR LOOKING NORTH
1" = 10'



SOUTH WALL ELEVATION FROM TANK INTERIOR LOOKING SOUTH
1" = 10'



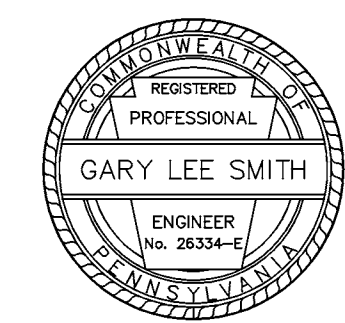
WEST WALL ELEVATION FROM TANK INTERIOR LOOKING WEST
1" = 10'



EAST WALL ELEVATION FROM TANK INTERIOR LOOKING EAST
1" = 10'

NOTES:
SEE QUALITY ASSURANCE BOOKLET (SEPARATE DOCUMENT) FOR WALL PANEL AND CAP STRIP DESCRIPTIONS AND DOCUMENTATION.

NOTE:
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS, WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, CUMMINGS & SMITH, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE PERSONS RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



No.	Date	Description	By	Check	Appr.
A	8-29-13	RECORD DRAWING	GJB	GLS	GLS

DATE	RELEASED FOR

Drawn	Checked	Approved	Plot Scale	Date
GJB	GLS	GLS	1" = 1"	8-29-13

Site - Project	Drawing Number	Rev.	Sheet
D-20809.00	TL - 7405	-	45 of 45

F:\view\2008\projects\cummins\cummins\CONSTRUCTION\TANK CONSTRUCTION\Drawings\45-7-7405.dwg, 7/4/2014 1:26:31 PM