



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER

DEFK12000

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF:

TARA LYLE
304-558-2544

RFQ COPY
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DIV ENGINEERING & FACILITIES
ARMORY BOARD SECTION

1707 COONSKIN DRIVE
CHARLESTON, WV
25311-1099 304-341-6368

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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
08/08/2011				

BID OPENING DATE: 08/18/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 2						
1. QUESTIONS AND ANSWERS ARE ATTACHED. 2. REVISED BID FORM ATTACHED. 3. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.						
EXHIBIT 10						
REQUISITION NO.: DEFK12000						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NO.'S:						
NO. 1						
NO. 2						
NO. 3						
NO. 4						
NO. 5						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.						
				 SIGNATURE	
				 COMPANY	
				 DATE	
NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.						
REV. 09/21/2009						
END OF ADDENDUM NO. 2						
0001	1	JB		968-20		
				BUILDING CONSTRUCTION		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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DEFK12000 ADDENDUM NO. 2

Item #1 Questions/Answers

Q1: Who is responsible for the building permit? The owner or the contractor?

A1: No building permit is required for this project.

Q2: Are there sewer/water tap fees? If so who is responsible the owner or the contractor?

A2: Tap fees: Water and sewer tap fees will be paid by the Owner

Q3: When will each of the utilities be available to the contractor? For example it appears that the electric must be installed by the utility company to a certain point and then we tie-in to that location. Is there a time table that we can assume electric will be provided to this point? Is the water available to us as soon as we can make the tie-in?. The same question applies to each utility.

A3: Temporary utility connections are the Contractor's responsibility. The Owner makes no guarantees in regard to utility availability. We suggest the contractors talk to the utility directly about temporary service.

Q4: Does the existing cut material meet the specification for the required durable rock fill.

A4: There is sufficient quantity of durable rock on-site.

Senersshield-R by BASF Wall Systems is acceptable in Section 07272.

Item #2 Specification Section 00400 – Form of Proposal

A. Bid Form II: Replace existing Bid Form II as included in Project Manual with revised Bid Form II, dated 8/5/2011, attached.

B. Bid Form III: Replace existing Bid Form III as included in Project Manual with revised Bid Form III, dated 8/5/2011, attached.

Item #3 Specification Section 00600 – Information to Bidders

A. Add Appendices A, B and C from the "Hardy County Complex Access Road Geotechnical Engineering Report".

Item #4 Specification Section – General Provisions

- A. Liquidated damages amount, Page 26 – Item 54, insert the following amounts in the appropriate blanks: \$1,000 per day plus a one time fixed cost of \$1,250 for Staff Judge Advocate Review.
- Item #5 Specification Section 01500 – Temporary Facilities and Controls
- A. In Paragraph 1.1.A, delete “As soon as practicable” and insert “Within 30 days of notice to proceed”.
- Item #6 Specification Section 01781 – Project Record Documents
- A. Paragraph 1.3.A.1.b, Final Submittal – **add “and a CD with all drawings in color PDF format” to the end of the first sentence.**
- B. Paragraph 1.3.B, Record Specifications – **change quantity from three (3) to “four (4)”.**
- Item #7 Specification Section 02300 – Earthwork
- A. Paragraph 2.1.G, “Durable Rock” – **change “sandstone” to “silty shale”.**
- B. Paragraph 2.2, “Geotextiles” – **add Subparagraph D below:**
- “D. Stabilization Geotextile: Refer to WVDOH Standard Specifications Roads and Bridges, adopted 2010; including WVDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.”**
- C. Paragraph 3.21.A: “Field Quality Control” – **add “The Contractor shall record material type and lift thickness for every lift.” as subparagraph 3.21.A.4.**
- Item #8 Section 07531 – EPDM Membrane Roofing
- A. Delete reference to white membrane and provide 60 mil EPDM reinforced membrane black.
- B. Versico is accepted approved manufacturer.
- C. Hunter Panels Nailboard insulation is accepted AC Foam manufacturer section 07610
- Item #9 Section 09260 – Gypsum Board Assemblies
- A. Subject to compliance with project requirements, add Waco Composites Ltd. As acceptable manufacturer for Bullet Resistant Fiberglass Panels Armor Core.
- Item #10 Section 10531 – Canopies
- A. Subject to compliance with project requirements, add Peachtree Protection Covers as acceptable manufacturer.

DRAWINGS

- Item #11 Replace existing drawings with the following:

C200 – Site Layout
C201 – Site Layout Continued
C205 – Quantity Tables

C300 – Grading and Drainage
 C301 – Grading and Drainage Continued
 C302 – Pond Plan
 C600 – Typical Pavement Sections
 C601 – Typical Pavement Sections
 C602 – Typical Pavement Sections
 C700 – Storm Profiles
 C801 – Paving Details

MECHANICAL

Item #12 Drawings M101 and M103 – HVAC Floor Plan 'A' and 'C'

A. Add fire / smoke dampers per attached Sketch SKM-1.

Item #13 Drawing M-102 – HVAC Floor Plan 'B'

A. Add return grilles in Kitchen and Dishwasher Room per Sketch SKM-2.

Attachments:

Bid Form – Section II, 4 pages
 Bid Form – Section III, 23 pages
 Access Road Geotechnical Information, 50 pages
 Specification Section 01230 – Alternates, 4 pages

Drawings:

C200 – Site Layout
 C201 – Site Layout Continued
 C205 – Quantity Tables
 C300 – Grading and Drainage
 C301 – Grading and Drainage Continued
 C302 – Pond Plan
 C600 – Typical Pavement Sections
 C601 – Typical Pavement Sections
 C602 – Typical Pavement Sections
 C700 – Storm Profiles
 C801 – Paving Details

Sketches:

SKM-1, dated 8/3/11 (ref drawings M-101 and M-103)
 SKM-2, dated 8/3/11 (ref drawing M-102)
 Pre-Bid Meeting Minutes, 2 pages

**PRE-BID MEETING MINUTES
MOOREFIELD READINESS CENTER
26 JULY 2011**

Pre-Bid Meeting was held at the offices of The Hardy County Rural Development Authority at 223 North Main Street, Suite 102, Moorefield, West Virginia. Attendance at pre-bid was mandatory for all general contractors submitting the bid. Sign-in sheet was distributed for sign-in of all persons attending the meeting and collected by representatives of the West Virginia Army National Guard. The following is a summary of items noted and/or discussed:

It is prefaced that items generally discussed at the pre-bid meeting were for general information only and that any changes to contract documents would only be official when specifically addressed in Addendums to be issued prior to bid. Information contained in these minutes are not to be construed as official addenda item.

All questions relating to bidding, whether it be for request for clarification or request for information, or substitution requests are to be forwarded in writing to Purchasing Division, attention Tara Lyle not later than 11:00 am on August 1, 2011. It was noted that no direct contact between Bidders and Architect, Engineer or Project Manager is authorized.

It was noted that State Wage Rates will be applied.

Dan Clevenger reviewed General Provision 1, relating to the relationship of the Federal Government.

John Harris reviewed an overall scope of work as listed in the Project Manual, reviewed general description of scope of work for base bid and alternates.

Robert Fuller likewise gave an overview and summarized the scope of work relating to site work, access road, and utilities.

Security, Work Hours and Access to Site: General discussion was that normal work hours are expected to be between 0700 and 1800 Monday through Friday, excluding Federal holidays. Work outside and beyond this must be in accordance with Specification Section 01100 – 1.1. Contractor is required to provide the Project Manager with a listing of all personnel expected to be on site in accordance with Section 01310 – 1.6. Contractor shall also provide full time superintendent in accordance with Contract Documents and be actively engaged in the coordination of all on-site activities.

Temporary Facilities: Requirements for temporary facilities were pointed out to be included in Division 1. It was noted that water is not presently available on site and that temporary facilities must be provided. Contractor is also reminded to provide job trailer, material storage in accordance with Contract Documents. It is anticipated that requirements for job trailer to be mobilized and established on site within 30 days of notice to proceed is expected to be an addendum item.

Contract Liquidated Damages: It was noted that the duration of the contract is 540 days from the notice to proceed. Liquidated damages in the amount of \$1,000 per day plus one time fixed cost of \$1,250 will be also be included in the addendum.

Safety: It was discussed that all construction services will be on conjunction with OSHA safety and health requirements manual of the US Army Corps of Engineers as well as FFA. Site access must be restricted and controlled by the Contractor. Contractor is also expected to maintain and daily cleanup is required for the project work.

Substitutions: Substitution requests will only be considered if submitted within 60 days of commencement of work. Substitution requests will only be considered when one or more of the following items apply:

1. Proposed changes comply with the general intent of the Contract Documents.
2. Requests are timely and accompanied by required documentation per Specification 01631.
3. Specified product cannot be provided in a timely manner. Contract this time will not be considered if the contractor fails to provide proper and timely coordination.
4. Governing authority cannot approve the specified product and a substituted product can be approved.

Floor was open for general questions. Questions include, but are not limited to, the following:

1. Is the job a balance of cut and fill?
2. Will electronic documents be provided to bidders for quantity take-offs?
3. Is it the intent that alternates will be awarded in the order listed?

No specific answers were given at the meeting; however, consideration will be made toward incorporating certain responses in the form of addendum.

Following this meeting, all contractors were invited to proceed to the project site for review of existing conditions.

BID FORM - SECTION II BID ITEMS AND UNIT COSTS

In the event that unit quantities stated below differ from quantities required for completion of the Work, unit costs as stated below shall be the basis of adjustments in Contract Sum.

Note: Bid items with the same number must include the same unit price.

NO.	ITEM	QTY	UNIT	UNIT PRICE	EXTENDED PRICE
PRIMARY FACILITY					
<u>1</u>	Readiness Center	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
PROJECT ADMINISTRATION/QUALITY CONTROL					
<u>2</u>	Mobilization/Demobilization	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>3</u>	General Administration	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>4</u>	Project Quality Control	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>5</u>	WVDOH Encroachment Permit (Allowance)	<u>1</u>	<u>LS</u>	<u>\$5,000.00</u>	<u> </u>
SITE PREPARATION					
<u>6</u>	Site Preparation	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>7</u>	Sediment and Erosion Control	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>8</u>	Detention Pond	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>9</u>	Waste Disposal	<u>5</u>	<u>TN</u>	<u> </u>	<u> </u>
<u>10</u>	Field Fencing	<u>480</u>	<u>LF</u>	<u> </u>	<u> </u>
<u>11</u>	Farm Gate	<u>1</u>	<u>EA</u>	<u> </u>	<u> </u>
EARTHWORK					
<u>12</u>	Unclassified Excavation	<u>300,000</u>	<u>CY</u>	<u> </u>	<u> </u>
<u>13</u>	Topsoil	<u>6,400</u>	<u>CY</u>	<u> </u>	<u> </u>
<u>14</u>	Soil Drying	<u>100</u>	<u>TN</u>	<u> </u>	<u> </u>
<u>15</u>	Over-Excavation	<u>100</u>	<u>SY</u>	<u> </u>	<u> </u>
<u>16</u>	8" Subsurface Drains	<u>1,600</u>	<u>LF</u>	<u> </u>	<u> </u>
<u>17</u>	6" Subsurface Drains	<u>1,000</u>	<u>LF</u>	<u> </u>	<u> </u>
RC ROADS and PAVING					
<u>18</u>	7" Concrete Paving	<u>5,000</u>	<u>SY</u>	<u> </u>	<u> </u>
<u>19</u>	(401-001)[1] SG HMA Base Course, ST/GR	<u>1,900</u>	<u>TN</u>	<u> </u>	<u> </u>
<u>20</u>	(402-001)[1] SG HMA Skid Pvt. (W-1) ST/GR	<u>530</u>	<u>TN</u>	<u> </u>	<u> </u>
<u>21</u>	(207-034) Fabric for Separation	<u>11,511</u>	<u>SY</u>	<u> </u>	<u> </u>
<u>22</u>	Fabric Woven (Heavy Duty)	<u>1,215</u>	<u>SY</u>	<u> </u>	<u> </u>
<u>23</u>	AASHTO No. 1 Stone	<u>820</u>	<u>TN</u>	<u> </u>	<u> </u>
<u>24</u>	(307-001) Aggregate Base Course, Class 1	<u>3,850</u>	<u>CY</u>	<u> </u>	<u> </u>
<u>25</u>	Pavement Marking	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
<u>26</u>	Wheel Stops	<u>96</u>	<u>EA</u>	<u> </u>	<u> </u>
<u>27</u>	Concrete Curbing	<u>900</u>	<u>LF</u>	<u> </u>	<u> </u>

NO.	ITEM	QTY	UNIT	UNIT PRICE	EXTENDED PRICE
28	Signage	1	LS		
29	(607-001)[II] Type 1 Guardrail	250	LF		
30	(607-037)[1] Buffer End Section	2	EA		
31	Bollards 8"	20	EA		
32	Bollards 12"	10	EA		
33	Bollards Removeable	12	EA		

ACCESS ROAD

34	(207-033) Fabric for Stabilization	13,000	SY		
35	(228-001) Subgrade Preparation	2,900	SY		
24	(307-001) Aggregate Base Course, Class 1	2,240	CY		
36	(307-005) Aggregate Base Course, Class 10	2,650	TN		
19	(401-001)[1] SG HMA Base Course, ST/GR	4,200	TN		
20	(402-001)[1] SG HMA Skid Pvt. (W-1) St or GR	861	TN		
29	(607-001)[II] Type 1 Guardrail	2,213	LF		
30	(607-037)[1] Buffer End Section	8	EA		
37	(638-002) Right of Way Markers	36	EA		
38	(657-008)(1) 2 LB, Channel Post	100	LF		
39	(657-010)(1) 3 LB, Channel Post	39	LF		
40	(661-001-1) 36" Flat Sheet Sign	108	SF		
41	(661-002) Extruded Panel Sign	18	SF		
42	(663-001-1)[11] Edge Line, Type V, White, (4")	6,660	LF		
43	(663-001-2)[11] Edge Line, Type V, White, (4")	115	LF		
44	(663-005)[V] Stop Line, Type, V (24")	54	LF		
45	(663-002)[V] Centerline, Type V, Yellow (4")	6,650	LF		
46	Maintenance of Traffic	1	LS		

MISCELLANEOUS

47	Site Improvements	1	LS		
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WATER

48	3" PVC Water	675	LF		
49	6" PVC Water	860	LF		
50	10" PVC Water	1,700	LF		
51	10" DIP Water	200	LF		
52	PIV	1	EA		
53	Fire Hydrant	4	EA		
54	Water Vault	1	LS		

SEWER

55	Manholes, Sanitary Sewer	60	VF		
56	Frame and Cover, Sanitary Sewer	12	EA		
57	4" PVC Sanitary Sewer	100	LF		
58	6" PVC Sanitary Sewer	640	LF		

NO.	ITEM	QTY	UNIT	UNIT PRICE	EXTENDED PRICE
59	8" PVC Sanitary Sewer	1,475	LF		
60	8" DIP Sanitary Sewer	100	LF		
61	Cleanout, Sanitary Sewer	6	EA		

STORM DRAINAGE

62	4" PVC Storm	250	LF		
63	6" PVC Storm	550	LF		
64	8" PVC Storm	95	LF		
65	10" PVC Storm	9	LF		
66	12" PVC Storm	375	LF		
67	15" PVC Storm	340	LF		
68	12" HDPE Storm	250	LF		
69	18" HDPE Storm	875	LF		
70	24" HDPE Storm	130	LF		
71	30" HDPE Storm	380	LF		
72	18" CMP Storm	80	LF		
73	36" CMP Storm	720	LF		
74	48" CMP Storm	270	LF		
75	Type 1 Ditch	300	LF		
76	Type 2 Ditch	500	LF		
77	Type 3 Ditch	500	LF		
78	Type 4 Ditch	1,940	LF		
79	Junction Box	1	EA		
80	Modified Junction Box	1	EA		
81	Type "B" Drop Inlets	7	EA		
82	Type "G" Drop Inlets	2	EA		
83	12" Yard Drains	12	EA		
84	12" In-Line Inlets	15	EA		
85	Trench Drain and Grate	40	LF		
86	Concrete Headwall	8	EA		

ADDITIONAL KITCHEN EQUIPMENT

87	Additional Kitchen Equipment	1	LS		
				BID TOTAL	

BID ALTERNATES**BID ALTERNATE #1 - Component Shell and Toilet Area**

88	Component Shell and Toilet Area	1	LS		
				TOTAL	

BID ALTERNATE #2 - Classroom Area with Associated Corridors

89	Classroom Areas with Associated Corridors	1	LS		
				TOTAL	

NO.	ITEM	QTY	UNIT	UNIT PRICE	EXTENDED PRICE
BID ALTERNATE #3 - West Parking Area					
<u>90</u>	West Parking Area	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>
BID ALTERNATE #4 - Security Fencing Upgrade					
<u>91</u>	Fencing/Gate Upgrade	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>
BID ALTERNATE #5 - Communications Tower Site					
<u>92</u>	Communications Tower Site	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>
BID ALTERNATE #6 - Unheated Storage Addition					
<u>93</u>	Unheated Storage Addition	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>
BID ALTERNATE #7 - Electronic Card Access System					
<u>94</u>	Electronic Card Access System	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>
BID ALTERNATE #8 - 911 Center Build-Out					
<u>95</u>	911 Center Build-Out	<u>1</u>	<u>LS</u>	<u> </u>	<u> </u>
				TOTAL	<u> </u>

SECTION 01230 – ALTERNATES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Provisions apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for Alternates.
- B. Definition: An Alternate is a change to the proposed scope of work described in the Bid and Contract Documents, separately priced by the bidders, and accepted at the sole option of the Owner. An Alternate can be a change in quantity, or a change in the products, materials, equipment, systems, or specified methods.
- C. Coordination: Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that work affected by each accepted Alternate is complete and fully integrated into the Project.
- D. Schedule: A "Schedule of Alternates" is included at the end of this Section. Proposed price for each Alternate shall include miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation, whether or not specifically mentioned as part of the Alternate.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.1 SCHEDULE OF ALTERNATES****Alternate No. 1 – Component Shell and Toilet Area**

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for a complete building shell designated as the Component area. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- Deleting brick veneer along the western wall of the area designated on drawings as base bid, and deleting Door 1C5
- Where Door 1C5 is deleted, provide a temporary gypsum board wall with solid core wood door in hollow metal frame extending across corridor 1C5 where bulkhead is shown across ceiling adjacent to door 151.
- Concrete floor slabs, all perimeter masonry walls, brick veneer, stone accents, interior masonry bearing walls along Corridor 1C6 and Lobby 1L2 including the installation of all hollow metal frames located in this wall, metal fascias, roof system, metal roof screen, all underfloor slab plumbing and electrical rough-ins, and perimeter masonry wall and interior masonry bearing wall electrical rough-ins.

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- Complete finishing of Toilets 1T7 and 1T8, Janitor Closets 1J1 and 1J2, and Table / Chair Storage 100A.
- Doors 1C6, 1J1, 1J2, 100A, 100A1, and 100A2.
- Temporary gypsum board on metal stud partition running across Corridor 1C6 between Toilets 1T7 and 1T8.
- Air Handling Units #8, #10 and #12 installed on roof and Exhaust Fan #11 all complete and ready for operation. Branch ductwork extended into unfinished area is to remain open with no diffusers.
- All rooftop mounted equipment curbs and associated flashings.
- Skylight above Lobby 1L2. (Bulkhead to be part of Alternate 2 below.)
- Electric Heating Unit 1 located above Doors 1V1-1, 1V1-2 and 1C6-1.
- Toilets 1T7 and 1T8, Janitor Closets 1J1 and 1J2, and Table / Chair Storage 100A is to be complete and ready for use as accessed from Assembly Hall 100. Refer to Drawings A102 and A102A for specific scope between base bid and this alternate.
- All sidewalks and concrete curbs extending from Doors 1V2-1, 1V2-2, 1C6-1 and 100-A over to western parking lot.
- Recessed floor slab in the area to later receive raised access flooring in the 911 Center.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 2 – Classroom Area with Associated Corridors

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for the partial build-out of the Component Shell included in Alternate No. 1 above for the Lobby, Corridor and Classroom areas. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- All construction, finishes, equipment, mechanical equipment, plumbing and electrical necessary to complete Lobby 1L2, Vestibule 1V2, Corridor 1C6, Classrooms 152A, 152B, 152C and 152D, and Storage Room 152-A.
- Rooftop equipment RTU #11 and #13 and all associated ductwork, as well as remaining ductwork and diffusers for RTU #10 and #12.
- Deletion of temporary partition across Corridor 1C6 and 1C5 as described in Alternate No. 1 above.
- Installation of doors in Corridor 1C6 and Lobby 1L2, Doors 1V2-3, 1V2-4, transaction window between Vestibule and Office 153A, and associated hardware.
- All casework in Lobby 1L2.
- Bulkhead about skylight.
- Ductless HVAC split-system DU-8 in Room 152A-1 and CU-8 on Roof.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

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Alternate No. 3 – West Parking Area**Unit:** Lump Sum (LS)

Description: Western Area Parking shall consist of constructing the parking area and walkways within the area delineated on the plans. It shall include, but is not limited to, asphalt, aggregate base, geotextile fabric, pavement marking, signage, and concrete walks. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 4 – Security Fencing Upgrade**Unit:** Lump Sum (LS)

Description: This work shall consist of upgrading all security fencing, swing gates, sliding gates, and alternate bid items to an eight foot chain-link fabric height. Force Protection Gate is not included. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 5 – Communications Tower Site**Unit:** Lump Sum (LS)

Description: This work consists of furnishing and complete installation of the improvements for the communications tower site as shown on the plans. The price shall include fencing, gates, and gravel paving. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 6 – Unheated Storage Addition**Unit:** Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for a complete Unheated Storage 122. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

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- All foundations, perimeter bearing walls, roof, fascias, and roof screen as an extension from the existing building.
- Deleting the brick veneer between Storage Rooms 121 and 122 which was in Base Bid.
- All interior finishing, cages, electrical, and roof drains associated with this area.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 7 – Electronic Card Access System

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for providing an Electronic Card Access System with Card Readers. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- System at Doors 1V1-2, 1V2-2, 153-1, 151-2, and 151-1.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Alternate No. 8 – 911 Center Build-Out

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for the partial build-out of the 911 Center in the unfinished shell of Alternate No. 1. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- All finishes, plumbing, lighting and electric.
- Build-out for all spaces with designation starting at 153, 153A through 153Q.
- Installation and complete ductwork system for RTU #8 and installation of RTU #9, Exhaust Fans #12 and #13, and associated ductwork and diffusers.
- Ductless HVAC split-systems DU-9A and DU-9B in Room 153L; and, CU-9A and CU-9B on Roof.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

END OF SECTION 01230

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SECTION III OF BID FORM

Bid Item 1:	Readiness Center
Unit:	Lump Sum
Description:	<p>The item shall consist of any and all material, equipment, and labor for items required by the contract documents to provide a complete and functional Readiness Center building and/or assembly as shown under Base Bid in drawings and Specifications. Readiness Center includes lobbies, corridors, administration space, recruiting and family support space, educational facilities, storage, locker rooms, physical training rooms, mail rooms, drills halls, toilets, janitor closets, as well as mechanical, electrical, and data rooms.</p> <p>This item shall include any additional items related to Site Construction where a unit cost has not been requested. Additionally, this work shall include site utilities, excavation and backfill to foundation Subgrade for utilities and foundations, and grading within five feet of the building perimeter. The work shall include, but is not limited to, all materials, labor, equipment, and incidentals to construct the facility within the terms and conditions of the plans and specifications. This work also includes, but is not limited to: building excavation; backfill; foundation systems; gravel dry beds; concrete; masonry; veneer brick; structural steel; metal stud framing; pre-engineered; metal trusses; carpentry and wood decking; waterproofing; insulation; roofing; interior and exterior walls; railings; doors; windows; finishes; casework; mechanical systems; electrical systems; fire suppression systems; fire alarm; and data systems. The full extent of this work is defined by the Contract Documents, including the drawings and Project Manual, dated 1 July 2011 as well as any addenda issued during the bidding process. Work shall include, but is not limited to, providing labor, materials, equipment, and incidentals necessary to perform all items of work.</p>
Measurement:	Measurement will be based on completion of the work described and accepted by the Contracting Officer Technical Representative (COTR).
Payment:	Payment for item will be in accordance with the specifications.
Bid Item 2:	Mobilization/Demobilization
Unit:	Lump Sum
Description:	This work shall consist of the performance of construction preparatory operations associated with the sitework, including the movement of personnel, equipment, and materials to and from the project site; payment of performance bond, guaranty bond, and other insurance premiums; establishment and removal of the contractor's field office and storage facilities, including fenced enclosure of staging area.
Measurement:	Measurement will be based on completion of the work described, prorated from lump sum amounts according to the Basis of Payment below.
Payment:	Payment for item will be in three installments. The first payment of 50 percent of the lump sum price will be made on the first estimate following partial mobilization including the placement or erection of the Contractor's office and storage facilities and the initiation of construction work. The second payment of 25 percent will be made on the next estimate following completion of substantial mobilization. The remaining 25 percent will be paid upon demobilization and satisfactory restoration of the contractor's staging and work area and final completion of the Project.

Bid Item 3: General Administration**Unit:** Lump Sum

Description: This work shall consist of performing the construction administrative duties associated with managing the construction of the Sitework as stated in Division 1 and throughout the Specifications associated with the Sitework, providing construction layout, providing temporary utilities for the site and coordination of permanent utility installation and tie-in of site grading and access roads, administration and maintenance of all required permits for the project, including permit fees.

Measurement: Measurement will be based on completion of the work described, prorated from lump sum amounts according to the Basis of Payment below.

Payment: This item will be paid for at the contract lump sum price, based on percentage of contract completion.

Bid Item 4: Project Quality Control**Unit:** Lump Sum

Description: This work shall consist of establishing and maintaining a Quality Control Program throughout the duration of the project.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: This item will be paid for at the contract lump sum price, based on percentage of completion.

Bid Item 5: WVDOH Encroachment Permit(s) (Allowance)**Unit:** Lump Sum (LS) (Allowance)

Description: This work shall consist of obtaining encroachment permit(s) for the access road tie-in, utilities, and stormwater drainage on WVDOH right of ways as shown on the Plans or as required by the WVDOH. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The contractor will not bid on this work, but will be reimbursed the actual permit fee(s). The contractor shall submit an estimate for the permit(s) to the COTR for approval prior to submitting the application(s).

Payment: This item shall be reimbursed by submitting the permit fee(s) receipt(s), based on acceptance of the encroachment(s) by the WVDOH and the COTR.

Bid Item 6: Site Preparation**Unit:** Lump Sum (LS)

Description: This work shall consist of the removal of trees and other vegetation, topsoil stripping and stockpiling, removal of existing utilities, installation of temporary utilities, demolition, temporary safety fence and barricades for taxiway closures, and clearing and grubbing of all areas disturbed by the Contractor. This includes performing all work prescribed in a

workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the contractor in completing this item.

Payment: Payment shall be made at the contract unit price per lump sum.

Bid Item 7: Sediment and Erosion Control

Unit: Lump Sum (LS)

Description: This item shall consist of furnishing, installation, maintenance and subsequent removal of necessary storm water structures, best management practices, and other work required to prevent escape of sediment from disturbed areas of project site. Also included is the preparation of a modification to the existing WV NPDES permit, submission, and administrative maintenance of any permits required by the West Virginia Department of Environmental Protection (WVDEP) or other agencies. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the contractor in completing this item.

Payment: Payment for item shall be in three installments. The first payment of 50% of the lump sum price shall be made on the first estimate following issuance of a modification to the existing WV NPDES Construction Stormwater Permit and installation of best management practices required by the approved Stormwater Pollution Prevention Plan. The second payment of 25% shall be made on the next estimate following finish grading and stabilization of all waste and borrow areas. The remaining 25% shall be paid upon termination of the WV NPDES permit by the WVDEP for properly stabilizing the site, demobilization, and final completion of the Project.

Bid Items 8: Detention Pond

Unit: Lump Sum (LS)

Description: This work shall consist of constructing the sediment/detention pond as shown in the Plans. The work includes excavation, importation of soils, concrete, backfill, inlet and outlet structures, pipes, outlet protection, sediment removal, renovation to a detention pond, and maintenance. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There shall be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price per lump sum.

Bid Item 9: Waste Disposal

Unit: Ton (TN)

Description: This work shall include, but is not limited to, disposal of rubbish, trash, scrap, and other materials encountered at the site that require disposal at a sanitary landfill. The work

includes sorting, loading, hauling, and disposal. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work completed shall be measured in tons as evidenced by weigh tickets from a legally operating sanitary landfill and certified by the contractor to be correct.

Payment: Payment shall be made at the contract unit price per ton.

Bid Item 10: Field Fencing

Unit: Linear Foot (LF)

Description: This work consists of furnishing and complete installation of field fencing. The price will include clearing vegetation, excavating, trenching, concrete footings, backfilling, grouting posts in place, grounding, bonding, barbed wire, and gate hardware. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be along the bottom wire of the fence from outside to outside of end posts for each continuous run of fence, excluding lengths occupied by vehicular gates.

Payment: The accepted quantities of fencing materials shall be paid for at the contract unit price per linear foot complete in place.

Bid Item 11: Farm Gate

Unit: Each (EA)

Description: This work consists of furnishing and complete installation of farm gates for field fences. The price shall include excavating, trenching, concrete footings, backfilling, grouting posts in place, grounding, bonding, barbed wire, and locks. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be per each gate completely installed.

Payment: The accepted quantities of gates shall be paid for at the contract unit price per each complete in place.

Bid Item 12: Unclassified Excavation

Unit: Cubic Yard (CY)

Description: This work shall consist of, but is not limited to, unclassified excavation, loading and hauling of excavated material to on-site or off-site locations stated in the plans, placement and compaction, and shall include final grading, shaping and contouring of the excavation and fill areas. The terms for earthwork used in the remainder of this Section imply excavation in native materials. The Contractor, with approval of the COTR, shall adjust the final grades as necessary to create a finished project. The Contractor shall excavate to the lines and grades shown on the Plans. The Contractor shall perform all excavation of every description and of whatever materials encountered to the depths indicated on the Plans. No additional compensation shall be considered for rock

excavation. Over-excavation and/or fill not shown on the Plans or specified herein shall be at the Contractor's expense, unless approved by the COTR prior to commencing such work. If unsuitable materials exist below the grades shown on the Plans, this material shall be removed with the prior approval of the COTR and shall be paid per the unit price for "Overexcavation".

Except at locations where excavation of unsuitable material is required, care shall be taken not to excavate below the depths specified. Final shaping and contouring of the areas shall be performed to the satisfaction of the COTR.

This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The method of measurement for determining the quantity of excavation required for grading work as described above shall be on a cubic yard for excavated material which includes hauling, placing and recompacting material to the surfaces as shown on the Plans. Method of measurement shall be before and after surveyed cross-sections of the excavation area(s) and the average-end-area method for computing volume performed by a Professional Surveyor licensed in West Virginia. Cross sections are subject to the approval of the COTR.

Borrow areas (on- or off-site) shall be regraded and reclaimed, including sediment and erosion control and revegetation, at no additional cost to the COTR. Disposal of surplus and waste materials, if encountered, are incidental to this bid item and shall be performed at no additional cost to the COTR.

Payment: This item will be paid for at the contract unit price per cubic yard.

Bid Item 13: Top Soil

Unit: Cubic Yard (CY)

Description: This work shall consist of, but is not limited to, furnishing, amending, placing and fine grading imported topsoil in the areas indicated on the plans.

This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The method of measurement for determining the quantity of topsoil will be by multiplying the area topsoiled by an average depth measurement taken in the field. A minimum of one depth measurement per 10,000 sf (100' x 100') will be used to determine the coverage depth.

Payment: This item will be paid for at the contract unit price per cubic yard.

Bid Item 14: Soil Drying

Unit: Ton (TN)

Description: This work shall include, but is not limited to, quicklime application and mixing of stockpiles of existing satisfactory soils with high moisture content. The required demonstration of proposed techniques is incidental. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work completed shall be measured in tons of quicklime used as evidenced by weigh tickets for bulk loads or delivery slips for packaged materials certified by the contractor to be correct.

Payment: Payment shall be made at the contract unit price per ton.

Bid Item 15: Over-Excavation

Unit: Square Yard (SY)

Description: This work shall include, but is not limited to, excavation below subgrade, transportation and disposal of unsuitable materials, placement of geogrid and AASHTO #1 stone, and proof-rolling areas of unsuitable soils in locations directed by the COTR. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on square yards of area completed for the work described. Excess material or material placed beyond approved limits shall not be included in the measured quantity.

Payment: Payment shall be made at the contract unit price per square yard.

Bid Items 16-17: Subsurface Drains, 8" and 6"

Unit: Linear Foot (LF)

Description: This work shall consist of installation of subsurface drains of various sizes in locations specified on the plans or directed by the COTR. The drains are to be installed in locations that will intercept the maximum amount of seepage. Subsurface drain work includes dewatering, excavation, drainage fabric, stone, pipe, fittings, cleanouts and backfill. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on linear feet of drains in place, completed, and accepted by the COTR. It shall be measured along the centerline and shall include all fittings as typical pipe section in the pipe being measured.

Payment: This item shall be paid for at the contract price per linear foot.

Bid Item 18: 7" Concrete Paving

Unit: Square Yard (SY)

Description: This work consists of furnishing and complete installation of Portland cement concrete pavement, reinforcing, joints, and sealants at the areas as shown on the plans. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on square yards of area completed for the work described. Excess material or material placed beyond approved limits shall not be included in the measured quantity.

Payment: Payment shall be made at the contract unit price per square yard.

Bid Item 19: (401-001)[1] SG HMA Base Course, ST/GR

Unit: Ton (TN)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 20: (402-001)[1] SG HMA Skid Pmt. (W-1) ST/GR

Unit: Ton (TN)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 21: (207-034) Fabric for Separation

Unit: Square Yard (SY)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 22: Fabric Woven (Heavy Duty)

Unit: Square Yard (SY)

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Description: This work shall consist of furnishing and installing heavy duty woven geotextile fabric in pavement sections as directed by the COTR. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on square yards of area completed for the work described. Excess material or material placed beyond design limits shall not be included in the measured quantity. Fabric used in free draining base trench is not included in this pay item.

Payment: Payment shall be made at the contract unit price per square yard.

Bid Item 23: AASHTO No. 1 Stone

Unit: Ton (TN)

Description: This work includes, but is not limited to, furnishing and complete installation of designated aggregate course for pavements or as directed by the COTR. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantities of work done shall be measured in tons as designated. The quantity shall be determined by the Contractor from the total weigh slips for each vehicle load weighed on an approved standard scale or from digital print-out slips from an automatic batching plant, and certified by the Contractor to be correct. Each weigh slip shall indicate the contract item numbers for the material being delivered. Only work accepted by the COTR shall be included, any work rejected or materials used for other items or purposes shall be deducted.

Payment: Payment shall be made at the contract unit price per ton.

Bid Item 24: (307-001) Aggregate Base Course, Class 1

Unit: Cubic Yard (CY)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 25: Pavement Marking

Unit: Lump Sum (LS)

Description: Pavement markings shall consist of furnishing and installing various types of markings, as shown on the plans for the Readiness Center only and an additional 1,000 sq ft for miscellaneous marking as directed by the COTR. It shall include, but is not limited to,

edge lines, center lines, handicapped symbols, parking lines, shoulders, stop lines and pedestrian crossing markings. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of labor, materials and services provided by the contractor in completing this item.

Payment: This item shall be paid for at the contract lump sum price upon satisfactory completion of all pavement markings shown on the plans.

Bid Item 26: Wheel Stops

Unit: Each (EA)

Description: This work includes, but is not limited to, furnishing and complete installation of plastic wheel stops as directed by the COTR. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work done shall be measured per each wheel stop completely installed.

Payment: Payment shall be made at the contract unit price per each.

Bid Item 27: Concrete Curbing

Unit: Linear Foot (LF)

Description: This work shall includes, but is not limited to, the construction of cast-in-place concrete curbing at the locations shown on the Plans, or as directed by the COTR. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Curbing shall be measured along the front face of the section at the finish grade elevation.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Item 28: Signage

Unit: Lump Sum (LS)

Description: This item includes, but is not limited to, furnishing and installing miscellaneous signs, stop, parking, informational, etc. as noted on the Plans or as directed by the COTR. Signs, posts, foundations, and necessary hardware are included. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on completion of work described.

Payment: Payment shall be made at the contract unit price for lump sum.

WVARNG – MOOREFIELD READINESS CENTER**8/5/2011****Bid Item 29: (607-001)[II] Type 1 Guardrail****Unit:** Linear Foot (LF)**Description:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Measurement:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Payment:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Bid Item 30: (607-037)[1] Buffer End Section****Unit:** Each (EA)**Description:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Measurement:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Payment:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Bid Item 31–33: Bollards – 8", 12", and Removable****Unit:** Each (EA)**Description:** This work consists of furnishing and complete installation of bollards. The unit price shall include furnishing and installing metal posts, and associated hardware, concrete footings, excavation, backfill, and compensation for doing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, and incidentals required to complete the work.**Measurement:** The quantity of work done shall be measured per each bollard completely installed and accepted by the COTR.**Payment:** Payment shall be made at the contract unit price per each.**Bid Item 34: (207-033) Fabric for Stabilization****Unit:** Square Yard (SY)**Description:** Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 35: (228-001) Subgrade Preparation

Unit: Square Yard (SY)

Description: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 36: (307-005) Aggregate Base Course, Class 10

Unit: Ton (TN)

Description: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 37: (638-002) Right of Way Markers

Unit: Each (EA)

Description: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WDOH Standard Specifications Roads and Bridges, adopted 2010; including WDOH Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

WVARNG – MOOREFIELD READINESS CENTER**8/5/2011****Bid Item 38: (657-008)(1) 2 LB, Channel Post****Unit:** Linear Feet (LF)**Description:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Measurement:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Payment:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Bid Item 39: (657-010)(1) 3 LB, Channel Post****Unit:** Linear Feet (LF)**Description:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Measurement:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Payment:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Bid Item 40: (661-001-1) 36" Flat Sheet Sign****Unit:** Square Feet (SF)**Description:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Measurement:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Payment:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.**Bid Item 41: (661-002) Extruded Panel Sign****Unit:** Square Feet (SF)**Description:** Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 42: (663-001-1)[11] Edge Line, Type V, White, (4")

Unit: Linear Feet (LF)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 43: (663-001-2)[11] Edge Line, Type V, White, (4")

Unit: Linear Feet (LF)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Bid Item 44: (663-005)[V] Stop Line, Type, V (24")

Unit: Linear Feet (LF)

Description: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Measurement: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

Payment: Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.

WVARNG – MOOREFIELD READINESS CENTER**8/5/2011**

Bid Item 45:	(663-002)[V] Centerline, Type V, Yellow (4")
Unit:	Linear Feet (LF)
Description:	Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.
Measurement:	Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.
Payment:	Refer to WVDOT Standard Specifications Roads and Bridges, adopted 2010; including WVDOT Supplemental Specifications to Accompany the Standard Specifications Roads and Bridges, issued January 1, 2011.
Bid Item 46:	Maintenance of Traffic
Unit:	Lump Sum (LS)
Description:	This work shall consist of implementing the traffic control requirements outlined in the plans for tie-in of the access road to the existing road at the college and tie-in at WV 55 (Corridor H). This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.
Measurement:	There shall be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.
Payment:	Payment shall be made at the contract unit price for lump sum.
Bid Item 47:	Site Improvements
Unit:	Lump Sum (LS)
Description:	This work shall consist of the various site improvements shown on the plans to include but not limited to sidewalks, revegetation, gates, fencing, flagpoles, stairs, helipad, walls, vehicle wash rack, oil/water separator, loading ramp, trash enclosure, fuel truck pad and any other improvements outside the building not specifically listed elsewhere. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.
Measurement:	There shall be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.
Payment:	Payment shall be made at the contract unit price for lump sum.
Bid Items 48–51:	Water Line, PVC – 3", 6", and 10"; Waterline, DIP – 10"
Unit:	Linear Foot (LF)
Description:	This work shall consist of furnishing and installing various sizes of water line. These prices shall fully compensate the Contractor for providing pipe, fittings, valves, bedding, excavation, backfill, concrete thrust blocks, concrete encasement, steel casing pipe, asphalt repair, curb stops, flushing, testing, coordination with the Hardy County Public

Service District and agencies having jurisdiction for acceptance. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on linear feet of water line in place, completed, and accepted by the COTR. It shall be measured along the centerline and shall include all fittings and appurtenances associated with the water line.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Item 52: PIV

Unit: Each (EA)

Description: This work consists of furnishing and complete installation of Post Indicator Valves. The unit price shall include furnishing and installing the valves, fittings, excavation, bedding, backfill, concrete thrust blocks, saw-cutting of pipe, and testing and inspection. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work done shall be measured per unit PIV acceptably installed.

Payment: Payment shall be made at the contract unit price per each.

Bid Item 53: Fire Hydrant

Unit: Each (EA)

Description: This work consists of furnishing and complete installation of exterior fire hydrants. The unit price shall include furnishing and installing a fire hydrant, fittings, excavation, bedding, backfill, concrete thrust blocks, saw-cutting of pipe, and testing and inspection. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work done shall be measured per unit fire hydrant acceptably installed.

Payment: Payment shall be made at the contract unit price per each.

Bid Item 54: Water Vault

Unit: Lump Sum (LS)

Description: This work consists of furnishing, placing and installing the precast concrete vaults, bedding, backfill, water meter, backflow preventer and associated valves and appurtenances as detailed in the Plans. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on completion and acceptance of the work by the COTR and authorities having jurisdiction.

Payment: Payment shall be made at the contract price per lump sum.

WVARNG – MOOREFIELD READINESS CENTER**8/5/2011****Bid Item 55: Manholes, Sanitary Sewer****Unit:** Vertical Foot (VF)

Description: This work shall include, but is not limited to, installing pre-cast concrete manholes at the locations specified in the plans. Excavation, bedding, manhole section and grade ring installation, backfill, and testing and inspection are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on vertical feet of manhole in place, as measured from the invert to the top of concrete or spacer ring, completed and accepted by the COTR and authorities having jurisdiction.

Payment: Payment shall be made at the contract unit price per vertical foot.

Bid Item 56: Frame & Cover, Sanitary Sewer**Unit:** Each (EA)

Description: This work consists of furnishing, placing and installing the frame and cover for sanitary manholes as detailed in the Plans. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be per frame and cover installed and accepted by the COTR.

Payment: Payment shall be made at the contract price per each.

Bid Items 57-60: PVC Sanitary Sewer – 4", 6", and 8"; DIP – 8"**Unit:** Linear Foot (LF)

Description: This work shall consist of furnishing and installing various sizes of sanitary sewer piping. These prices shall fully compensate the Contractor for providing pipe, bedding, excavation, backfill, fittings, cleanouts, casing pipes, pavement repairs, testing and coordination with the Hardy County Rural Development Authority for acceptance. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on linear feet of sanitary sewer piping in place, completed, and accepted by the COTR. It shall be measured along the centerline and shall include all fittings, appurtenances, and cleanouts associated with the sanitary sewer piping.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Item 61: Cleanout, Sanitary Sewer**Unit:** Each (EA)

Description: This work consists of furnishing and complete installation of cleanout. The unit price shall include furnishing and installing pipe, fittings, concrete apron, excavation, and backfill. This includes performing all work prescribed in a workmanlike and acceptable

manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work done shall be measured per each cleanout completely installed and accepted by the COTR.

Payment: Payment shall be made at the contract unit price per each.

Bid Items 62–67: Storm Line, PVC – 4", 6", 8", 10", 12" and 15"

Unit: Linear Foot (LF)

Description: This work consists of the furnishing and complete installation of PVC pipe for storm drainage outside the building. This price shall fully compensate the Contractor for providing pipe, bedding, excavation, backfill, fill, and fittings. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Conduit of the different types and sizes, shall be measured by the linear foot in place, the measurement being made along the centerline of each pipe installed. Branch connections, tees, wyes, and elbows shall be measured along their centerlines and these lengths included in the total lengths of the appropriate conduit. Wyes, tees, and other branch connections shall be measured along the centerlines to points of intersection. The portion of pipe extending through to the inside face of headwalls of all types, manholes, inlets, boxes, or other structures shall be included in the measurement.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Items 68–71: Storm Line, HDPE – 12", 18", 24", and 30"

Unit: Linear Foot (LF)

Description: This work consists of the furnishing and complete installation of high density polyethylene pipe for storm drainage. Pipe, bedding, excavation, backfill, fill, and fittings, are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Conduit of the different types and sizes, shall be measured by the linear foot in place, the measurement being made along the centerline of each pipe installed. Branch connections, tees, wyes, and elbows shall be measured along their centerlines and these lengths included in the total lengths of the appropriate conduit. Wyes, tees, and other branch connections shall be measured along the centerlines to points of intersection. The portion of pipe extending through to the inside face of headwalls of all types, manholes, inlets, boxes, or other structures shall be included in the measurement.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Items 72–74: Storm Line, CMP – 18", 36", and 48"

Unit: Linear Foot (LF)

Description: This work consists of the furnishing and complete installation of corrugated metal pipe for storm drainage. Pipe, bedding, excavation, backfill, fill, and fittings, are included in this

item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Conduit of the different types and sizes, shall be measured by the linear foot in place, the measurement being made along the centerline of each pipe installed. Branch connections, tees, wyes, and elbows shall be measured along their centerlines and these lengths included in the total lengths of the appropriate conduit. Wyes, tees, and other branch connections shall be measured along the centerlines to points of intersection. The portion of pipe extending through to the inside face of headwalls of all types, manholes, inlets, boxes, or other structures shall be included in the measurement.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Items 75-76: Type 1 Ditch, Type 2 Ditch

Unit: Linear Foot (LF)

Description: This work shall consist of the construction of open flow ways for surface drainage, using geotextile fabric, riprap and grout. Excavation, shaping and lining and geotextile fabric are incidental.

Measurement: The quantity of work done shall be measured along the flow line of the ditch, from the first point of design depth to the point where the ditch breaks the plane of the drainage structure it empties into.

Payment: Payment shall be made by the contract unit price per linear foot.

Bid Items 77-78: Type 3 Ditch, Type 4 Ditch

Unit: Linear Foot (LF)

Description: This work shall consist of the construction of open flow ways for surface drainage, using permanent erosion control matting. Excavation, shaping, seeding, and lining are incidental. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: The quantity of work done shall be measured along the flow line of the ditch, from the first point of design depth to the point where the ditch breaks the plane of the drainage structure it empties into.

Payment: Payment shall be made by the contract unit price per linear foot.

Bid Items 79-80: Junction Box, Modified Junction Box

Unit: Each (EA)

Description: This work shall consist of installing pre-cast or cast-in-place concrete junction boxes for storm drainage. Pipe connection, bedding, excavation, backfill, fill, fittings, frames and covers, and pavement repairs, are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on each junction box in place completed, and accepted by the COTR.

Payment: Payment shall be made at the contract unit price for each.

Bid Items 81–82: Drop Inlets – Type “B” and “G”

Unit: Each (EA)

Description: This work shall consist of installing pre-cast or cast-in-place concrete inlets for storm drainage. Pipe connection, bedding, excavation, backfill, fill, fittings, and grates, are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on each drain inlet in place completed, and accepted by the COTR.

Payment: Payment shall be made at the contract unit price per each.

Bid Items 83–84: 12” Yard Drains, 12” In-Line Inlets

Unit: Each (EA)

Description: This work shall consist of installing drains and inlets for storm drainage. Inlets, grates, pipe, excavation, bedding, backfill, fill, fittings and pavement repairs are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on each drain inlet in place completed, and accepted by the COTR

Payment: Payment shall be made at the contract unit price for each.

Bid Item 85: Trench Drain & Grate

Unit: Linear Feet (LF)

Description: This work shall consist of installing a vehicular trench drain for storm drainage. Pipe connection, bedding, excavation, backfill, reinforcement, concrete, fittings, frames and grates are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be based on linear foot of trench drain installed and accepted by the COTR, measured along the center-line from end of grate to end of grate.

Payment: Payment shall be made at the contract unit price per linear foot.

Bid Item 86: Concrete Headwall

Unit: Each (EA)

Description: This work shall consist of installing cast-in-place concrete headwalls for storm drainage. Excavation, forming, reinforcement, concrete, pipe connection, aggregate bedding, backfill, and concrete finishing are included in this item. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement shall be for each headwall completely installed.

Payment: Payment shall be made at the contract unit price for each complete and in place.

Bid Item 87: Additional Kitchen Equipment

Unit: Lump Sum (LS)

Description: The item shall consist of any and all material, equipment, and labor for items required by the contract documents to provide complete and functional kitchen equipment as shown on the Kitchen Equipment Schedule. The full extent of this work is defined by the Contract Document, including the drawings and project manual, dated 1 July 2011, as well as any addenda issued during the bidding process. Work shall include, but is not limited to, providing labor, materials, equipment, and incidentals necessary to perform all items of work. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: Measurement will be based on completion of the work described and accepted by the Contracting Officer Technical Representative (COTR).

Payment: Payment for item will be in accordance with the specifications.

ALTERNATE BID ITEMS

Bid Item 88: Alternate No. 1 – Component Shell and Toilet Area

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for a complete building shell designated as the Component area. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- Deleting brick veneer along the western wall of the area designated on drawings as base bid, and deleting Door 1C5
- Where Door 1C5 is deleted, provide a temporary gypsum board wall with solid core wood door in hollow metal frame extending across corridor 1C5 where bulkhead is shown across ceiling adjacent to door 151.
- Concrete floor slabs, all perimeter masonry walls, brick veneer, stone accents, interior masonry bearing walls along Corridor 1C6 and Lobby 1L2 including the installation of all hollow metal frames located in this wall, metal fascias, roof system, metal roof screen, all underfloor slab plumbing and electrical rough-ins, and perimeter masonry wall and interior masonry bearing wall electrical rough-ins.
- Complete finishing of Toilets 1T7 and 1T8, Janitor Closets 1J1 and 1J2, and Table / Chair Storage 100A.
- Doors 1C6, 1J1, 1J2, 100A, 100A1, and 100A2.

- Temporary gypsum board on metal stud partition running across Corridor 1C6 between Toilets 1T7 and 1T8.
- Air Handling Units #8, #10 and #12 installed on roof and Exhaust Fan #11 all complete and ready for operation. Branch ductwork extended into unfinished area is to remain open with no diffusers.
- All rooftop mounted equipment curbs and associated flashings.
- Skylight above Lobby 1L2. (Bulkhead to be part of Alternate 2 below.)
- Electric Heating Unit 1 located above Doors 1V1-1, 1V1-2 and 1C6-1.
- Toilets 1T7 and 1T8, Janitor Closets 1J1 and 1J2, and Table / Chair Storage 100A is to be complete and ready for use as accessed from Assembly Hall 100. Refer to Drawings A102 and A102A for specific scope between base bid and this alternate.
- All sidewalks and concrete curbs extending from Doors 1V2-1, 1V2-2, 1C6-1 and 100-A over to western parking lot.
- Recessed floor slab in the area to later receive raised access flooring in the 911 Center.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 89: Alternate No. 2 – Classroom Area with Associated Corridors

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for the partial build-out of the Component Shell included in Alternate No. 1 above for the Lobby, Corridor and Classroom areas. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- All construction, finishes, equipment, mechanical equipment, plumbing and electrical necessary to complete Lobby 1L2, Vestibule 1V2, Corridor 1C6, Classrooms 152A, 152B, 152C and 152D, and Storage Room 152-A.
- Rooftop equipment RTU #11 and #13 and all associated ductwork, as well as remaining ductwork and diffusers for RTU #10 and #12.
- Deletion of temporary partition across Corridor 1C6 and 1C5 as described in Alternate No. 1 above.
- Installation of doors in Corridor 1C6 and Lobby 1L2, Doors 1V2-3, 1V2-4, transom window between Vestibule and Office 153A, and associated hardware.
- All casework in Lobby 1L2.
- Bulkhead about skylight.
- Ductless HVAC split-system DU-8 in room 152A-1 and CU-8 on roof.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 90: Alternate No. 3 – West Parking Area

Unit: Lump Sum (LS)

Description: Western Area Parking shall consist of constructing the parking area and walkways within the area delineated on the plans. It shall include, but is not limited to, asphalt, aggregate base, geotextile fabric, pavement marking, signage, and concrete walks. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 91: Alternate No. 4 – Security Fencing Upgrade

Unit: Lump Sum (LS)

Description: This work shall consist of upgrading all security fencing, swing gates, sliding gates, and alternate bid items to an eight foot chain-link fabric height. Force Protection Gate is not included. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 92: Alternate No. 5 – Communications Tower Site

Unit: Lump Sum (LS)

Description: This work consists of furnishing and complete installation of the improvements for the communications tower site as shown on the plans. The price shall include fencing, gates, and gravel paving. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 93: Alternate No. 6 – Unheated Storage Addition

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for a complete Unheated Storage 122. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- All foundations, perimeter bearing walls, roof, fascias, and roof screen as an extension from the existing building.
- Deleting the brick veneer between Storage Rooms 121 and 122 which was in Base Bid.

- All interior finishing, cages, electrical, and roof drains associated with this area.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 94: Alternate No. 7 – Electronic Card Access System

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for providing an Electronic Card Access System with Card Readers. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- System at Doors 1V1-2, 1V2-2, 153-1, 151-2, and 151-1.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

Bid Item 95: Alternate No. 8 – 911 Center Build-Out

Unit: Lump Sum (LS)

Description: This alternate includes all work, labor and material necessary for the partial build-out of the 911 Center in the unfinished shell of Alternate No. 1. This includes performing all work prescribed in a workmanlike and acceptable manner, including labor, tools, equipment, supplies, material, incidentals, and quality control required to complete the work. This alternate includes:

- All finishes, plumbing, lighting and electric.
- Build-out for all spaces with designation starting at 153, 153A through 153Q.
- Installation and complete ductwork system for RTU #8 and installation of RTU #9, Exhaust Fans #12 and #13, and associated ductwork and diffusers.
- Ductless HVAC split-systems DU-9A and DU-9B in room 153L; CU-9A and CU-9B on roof.

Measurement: There will be no direct measurement of materials, labor, and services provided by the Contractor in completing this item.

Payment: Payment shall be made at the contract unit price for lump sum.

END OF SECTION

Hardy County Access Road Geotechnical Information

APPENDIX A FIELD EXPLORATION



Terracon Consultants, Inc. 912 Morris Street Charleston, WV 25301
P [304] 344 0821 F [304] 342 4711 terracon.com



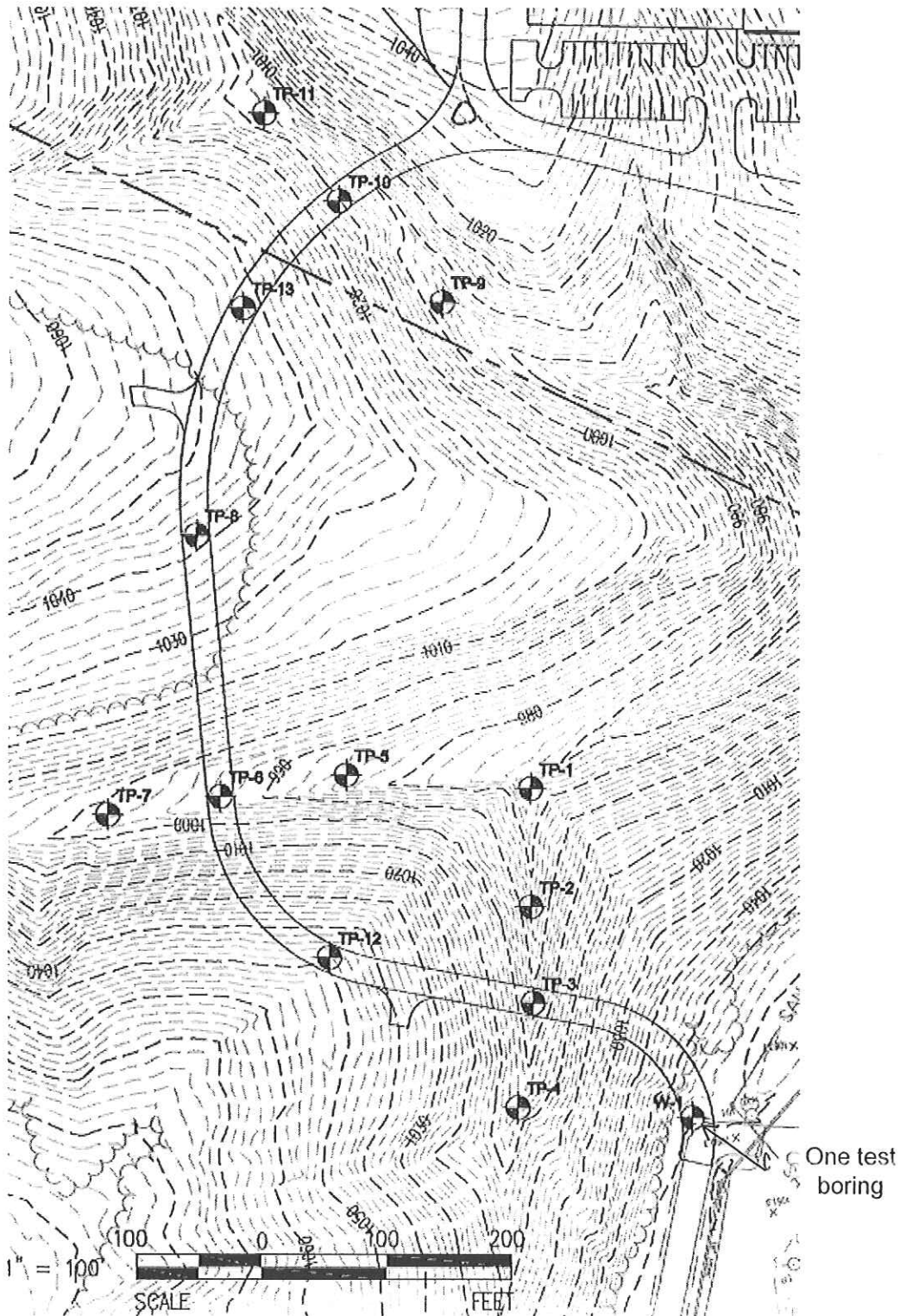


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT
INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	YSR
Drawn by:	YSR
Checked by:	TAG
Approved by:	YSR
Project No.	N2105071
Scale:	As Shown
File Name:	BLP
Date:	07/01/2011

Terracon
Consulting Engineers & Scientists
912 Morris Street Charleston, West Virginia 25301
PH (304) 344-0821 FAX (304) 342-4711

HAND AUGER LOCATION PLAN
HARDY COUNTY COMPLEX ACCESS ROAD
CAPITOL ENGINEERING, INC.
MOOREFIELD, WEST VIRGINIA

EXHIBIT
A-1

LOG OF HAND AUGER NO. TP-1

Page 1 of 1



CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.1 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
<div> <div>▽ NE</div> <div>WD</div> <div>▽</div> </div>								BORING COMPLETED 1-13-11			
<div> <div>▽</div> <div></div> <div>▽</div> </div>								RIG		FOREMAN TAG	
								LOGGED		JOB # N2105071	

EXHIBIT A-2

LOG OF HAND AUGER NO. TP-2

Page 1 of 1

CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.1 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
<div style="display: flex; justify-content: space-between;"> NE WD </div>								BORING COMPLETED 1-13-11			
<div style="display: flex; justify-content: space-between;"> </div>								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

REVISED BORING LOGS MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

LOG OF HAND AUGER NO. TP-3

Page 1 of 1



CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.1 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
<div> <div>▽ NE</div> <div>WD</div> <div>▽</div> </div>								BORING COMPLETED 1-13-11			
<div> <div>▽</div> <div>▽</div> </div>								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

EXHIBIT A-4

LOG OF HAND AUGER NO. TP-4

Page 1 of 1

CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.1 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ NE WD ▽ </div>								BORING COMPLETED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ ▽ </div>								RIG		FOREMAN TAG	
								LOGGED		JOB # N2105071	

REVISED BORING LOGS: MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

LOG OF HAND AUGER NO. TP-5

Page 1 of 1

CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan		DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
	DESCRIPTION				NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf
	0.7	<u>SILTY CLAY</u> , brown, medium stiff to stiff									
	0.8	<u>SHALE</u> , brown, laminated, soft									
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft				Terracon				BORING STARTED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ NE WD ▽ </div>								BORING COMPLETED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ ▽ </div>								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

REVISED BORING LOGS MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

LOG OF HAND AUGER NO. TP-6

Page 1 of 1


CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	1.4		CL	1	BAG						
	1.5		ML								
DESCRIPTION											
SILTY CLAY, brown, medium stiff to stiff											
SHALE, brown, laminated, soft											
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
NE WD								BORING COMPLETED 1-13-11			
								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

EXHIBIT A-7

LOG OF HAND AUGER NO. TP-7

Page 1 of 1

CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.9 SILTY CLAY , brown, medium stiff to stiff	1									
	1 SHALE , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft				Terracon				BORING STARTED 1-13-11			
<div> <div>▽ NE</div> <div>WD</div> <div>▽</div> </div>								BORING COMPLETED 1-13-11			
<div> <div>▽</div> <div>▽</div> </div>								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

REVISED BORING LOGS: MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

EXHIBIT A-8

LOG OF HAND AUGER NO. TP-8

Page 1 of 1

CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan		DEPTH, ft.	USCS SYMBOL	SAMPLES			TESTS			
	DESCRIPTION				NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf
	0.2	SILTY CLAY , brown, medium stiff to stiff		CL	1	BAG					
	1.3	SHALE , brown, laminated, soft		ML							

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

NE WD

Terracon

BORING STARTED 1-13-11
BORING COMPLETED 1-13-11
RIG FOREMAN TAG
LOGGED JOB # N2105071

LOG OF HAND AUGER NO. TP-9

Page 1 of 1



CLIENT Capitol Engineering, Inc.											
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan		DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
	DESCRIPTION				NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf
	0.7	SILTY CLAY , brown, medium stiff to stiff									
	0.8	SHALE , brown, laminated, soft									
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft			Terracon				BORING STARTED 1-13-11				
<div> <div>NE</div> <div>WD</div> </div>							BORING COMPLETED 1-13-11				
<div> <div></div> <div></div> </div>							RIG FOREMAN TAG				
							LOGGED JOB # N2105071				

EXHIBIT A-10

REVISED BORING LOGS MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

LOG OF HAND AUGER NO. TP-10

Page 1 of 1

CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	2.2 <u>SILTY CLAY</u> , brown, medium stiff to stiff	1	CL ML	1	BAG						
	2.3 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
NE WD								BORING COMPLETED 1-13-11			
								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

Page 1 of 1

Terracon

LOG OF HAND AUGER NO. TP-12

Page 1 of 1


CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS			
	DESCRIPTION			NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf	
	0.1 <u>SHALE</u> , brown, laminated, soft										
<p>The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.</p>											
WATER LEVEL OBSERVATIONS, ft								BORING STARTED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ NE WD ▽ </div>								BORING COMPLETED 1-13-11			
<div style="display: flex; justify-content: space-between;"> ▽ ▽ </div>								RIG FOREMAN TAG			
								LOGGED JOB # N2105071			

EXHIBIT A-13

REVISED BORING LOGS: MOOREFIELD AFRC ACCESS ROAD TEST PITS.GPJ TERRACON.GDT 1/30/11

LOG OF HAND AUGER NO. TP-13

Page 1 of 1

CLIENT		Capitol Engineering, Inc.									
SITE		Moorefield, West Virginia									
PROJECT		Hardy County Complex Access Road									
GRAPHIC LOG	Boring Location: As presented on Test Pit Location Plan	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS		
					NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	UNCONFINED STRENGTH, psf
	0.4	<u>SILTY CLAY</u> , brown, medium stiff to stiff									
	0.5	<u>SHALE</u> , brown, laminated, soft									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

NE	WD

Terracon

BORING STARTED	1-13-11
BORING COMPLETED	1-13-11
RIG	FOREMAN TAG
LOGGED	JOB # N2105071

LOG OF BORING NO. W-1

Page 1 of 1

CLIENT Capitol Engineering, Inc.									
SITE Moorefield, West Virginia		PROJECT Hardy County Complex Access Road							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES				TESTS	
				NUMBER	TYPE	RECOVERY, in.	SPT - N** BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf
	0.3 0.8		GC	1	SS	6	6		
			GC	2	SS	18	9		
	6	5	GC	3	SS	18	50/6"		
				4	SS	0	50/4"		
	10.2	10		5	SS	1	50/2"		
BORING COMPLETE									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**CME 140H SPT automatic hammer

WATER LEVEL OBSERVATIONS, ft

▽ N/E	WD	▽	AB
▽		▽	

BORING STARTED		9-21-10	
BORING COMPLETED		9-21-10	
RIG	CME-45C	FOREMAN	J.W.
LOGGED	J.R.B.	JOB #	N2105071

APPENDIX B
SUPPORTING INFORMATION

Geotechnical Engineering Report
Hardy County Complex Access Road ■ Moorefield, WV
July 13, 2011 ■ Terracon Project No. N2105071

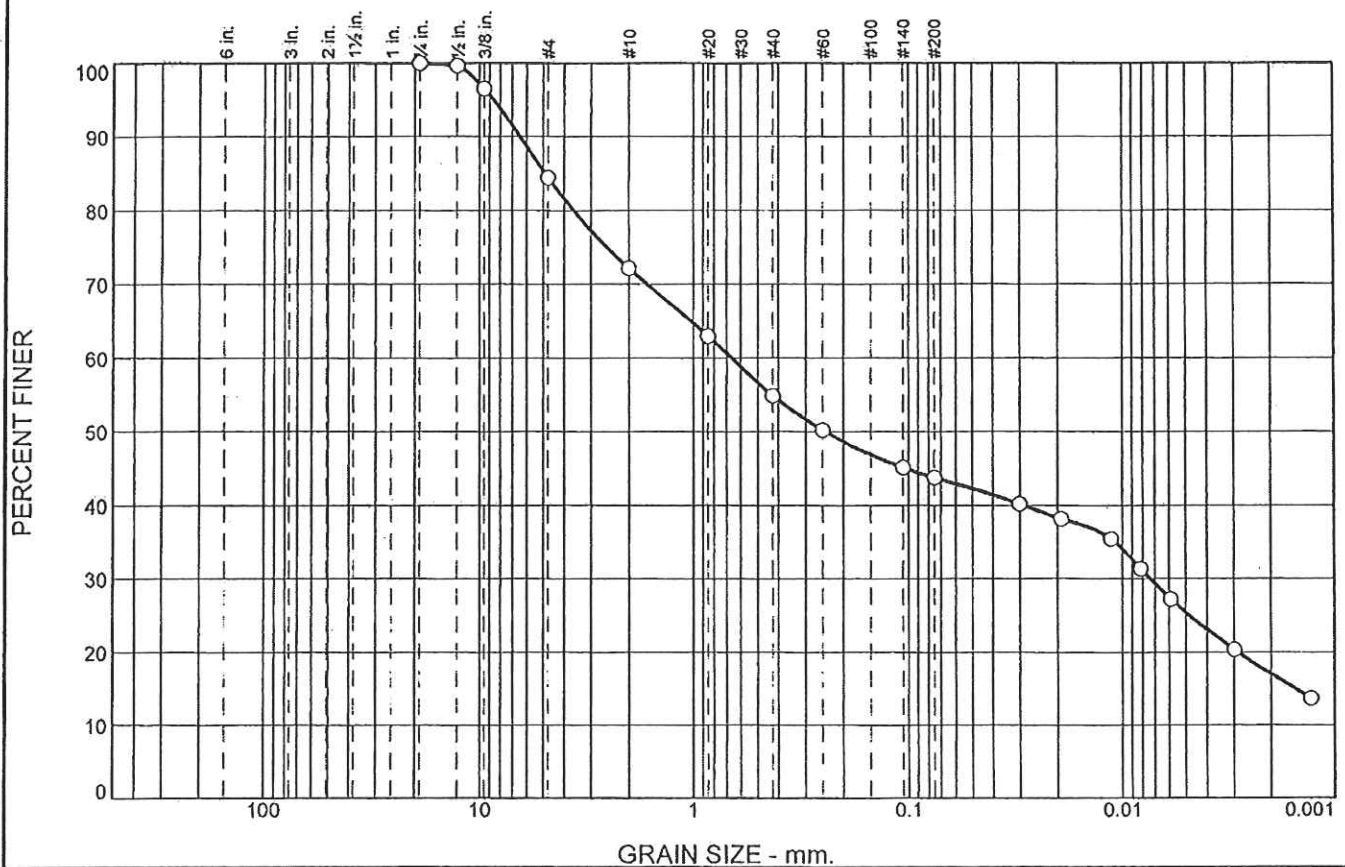


Laboratory Testing Description

Natural moisture content tests were performed on samples in the laboratory. In addition grain size distribution tests (sieve analyses and hydrometer testing), Atterberg Limits, liquid and plastic limit tests, triaxial compression tests, standard Proctor tests, and California bearing ratio tests (CBR), were performed on selected samples.

As a part of the laboratory testing program, the soil samples were classified in the laboratory based on visual observation, texture, and the limited laboratory testing described above. The soil and rock descriptions presented on the boring logs for native soils and bedrock are in accordance with our attached General Notes, General Notes – Description of Rock Properties, and Unified Soil Classification System (USCS). The estimated group symbol for the USCS is also shown on the boring logs, and a brief description of the Unified System is included in this report.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.6	12.3	17.2	11.1	18.4	25.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	99.7		
.375	96.6		
#4	84.4		
#10	72.1		
#20	63.0		
#40	54.9		
#60	50.2		
#140	45.1		
#200	43.8		

Material Description

Brown Clayey sand with gravel

PL= 22

Atterberg Limits

$$LL = 37$$

$P1 = 15$

$$D_{90} = 6.4526$$

Coefficients

$$D_{85} = 4.9053$$
$$D_{60} = 0.6620$$
$$D_{50} = 0.2429$$
$$D_{30} = 0.0074$$
$$D_{15} = 0.0015$$
$$D_{10}^{50} =$$
$$C_{411}$$
 $C_{C=O}$

Classification

USCS= SC

AASHTO= A-6(3)

Remarks

* (no specification provided)

Source of Sample: 10359
Sample Number: B-5

Depth: 10-15'

Date: 10-13-10

H.C. Nutting

A Terracon Company
Cincinnati, Ohio

Client: CAPITOL ENGINEERING

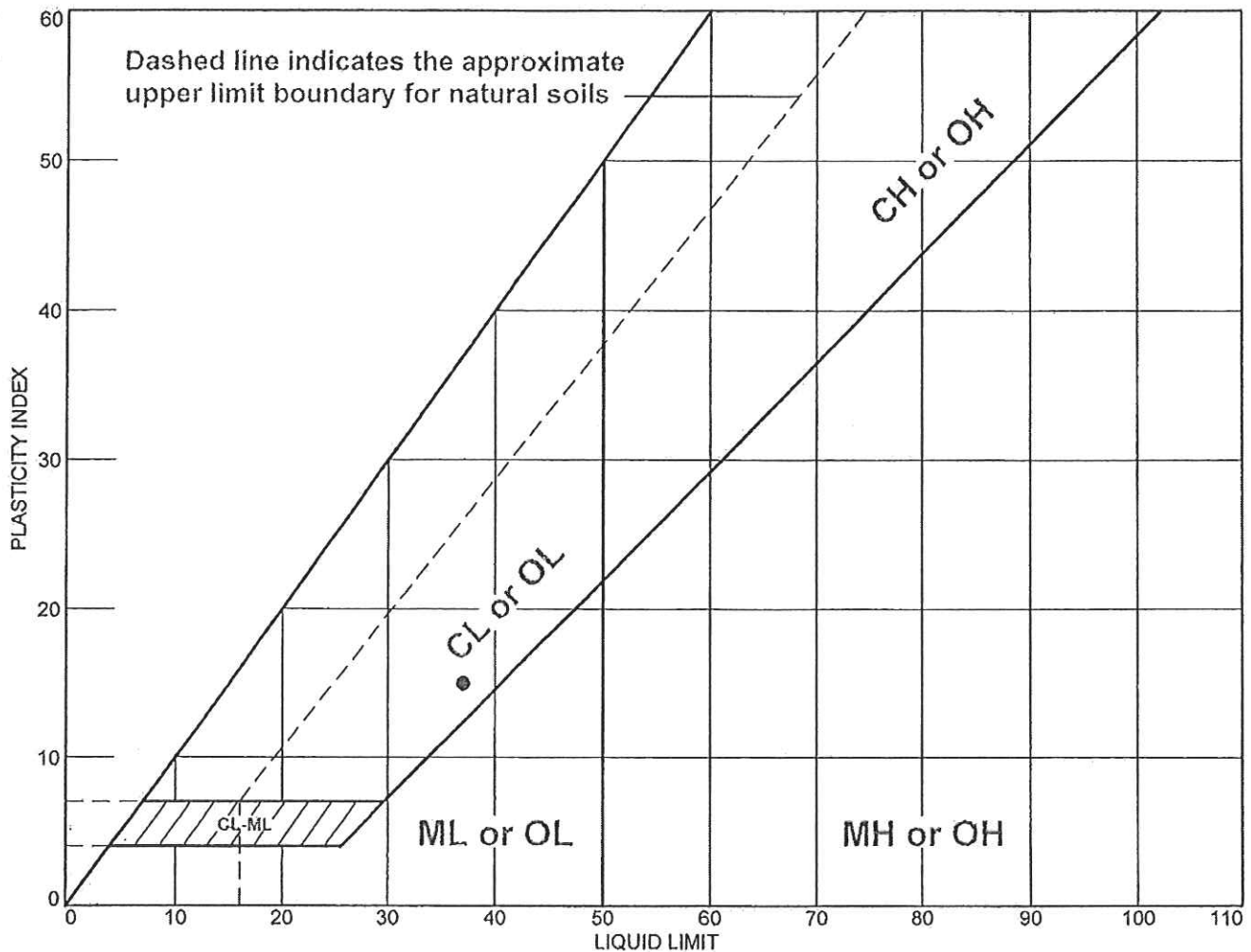
Project: HARDY COUNTY COMPLEX ACCESS ROAD

Project No: N2105071

Figure

EXHIBIT B-2

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
•	Brown Clayey sand with gravel	37	22	15	54.9	43.8	SC

Project No. N2105071 Client: CAPITOL ENGINEERING

Project: HARDY COUNTY COMPLEX ACCESS ROAD

• Source of Sample: 10359 Depth: 10-15' Sample Number: B-5

Remarks:

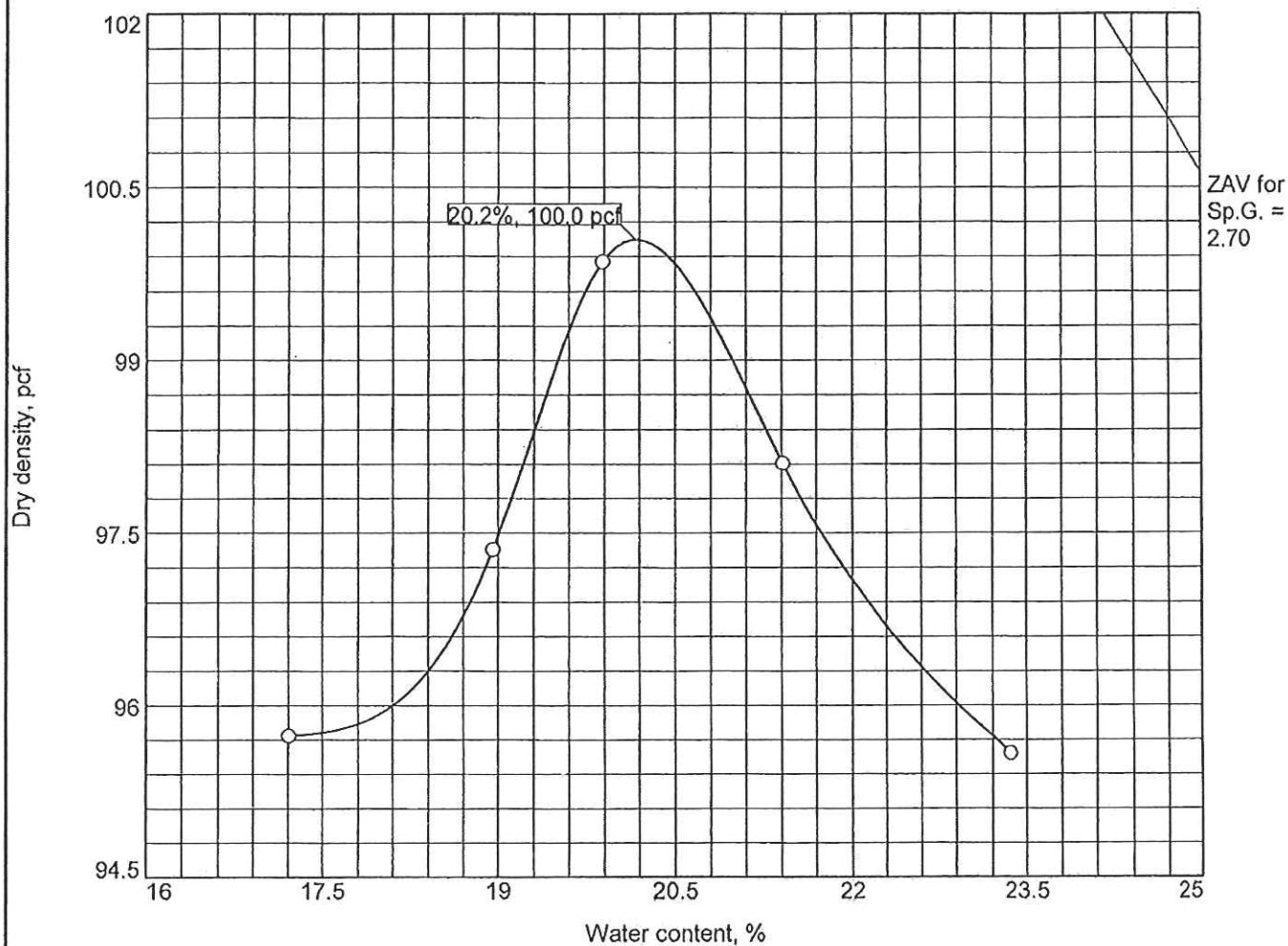
• 10359

H.C. Nutting
A Terracon Company
Cincinnati, Ohio

Figure

EXHIBIT B-3

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
10-15'	SC	A-6(3)		2.70	37	15	15.6	43.8

TEST RESULTS			MATERIAL DESCRIPTION
Maximum dry density = 100.0 pcf			Brown Clayey sand with gravel
Optimum moisture = 20.2 %			
Project No. N2105071 Client: CAPITOL ENGINEERING Project: HARDY COUNTY COMPLEX ACCESS ROAD			Remarks: Lab No. 10359
○ Source of Sample: 10359 Depth: 10-15' Sample Number: B-5			
<div>H.C. Nutting A Terracon Company Cincinnati, Ohio</div>			

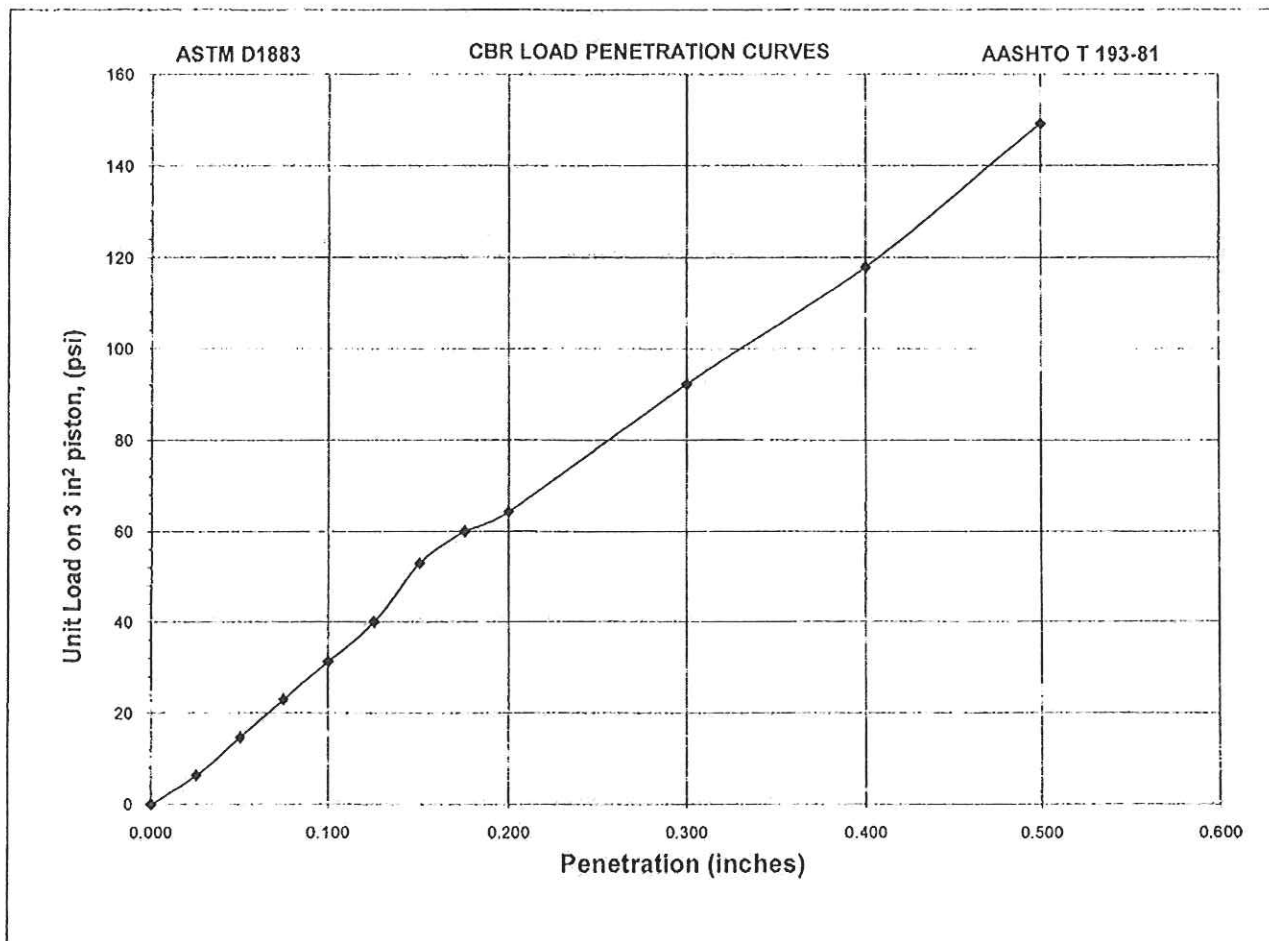
Figure

Tested By: KD Checked By: GS

EXHIBIT B-4


H. C. NUTTING
A Terracon COMPANY

HCN Division Office
611 Lunken Park Drive
Cincinnati, Ohio 45226
Phone 513.321.5816
Fax 513.321.0294
www.hcnutting.com
www.terracon.com


TERRACON
611 Lunken Park Dr., Cincinnati, Ohio 42226
513-321-5816

Client: Capitol Engineering
W.O.# N2105071
Boring: B-5 Depth: 10-15'
Sample: _____

Project: HARDY COUNTY COMPLEX ACCESS ROAD

Description: Br Clayey Sand w/gravel
Lab Number: 10359

Date: 10-26-10

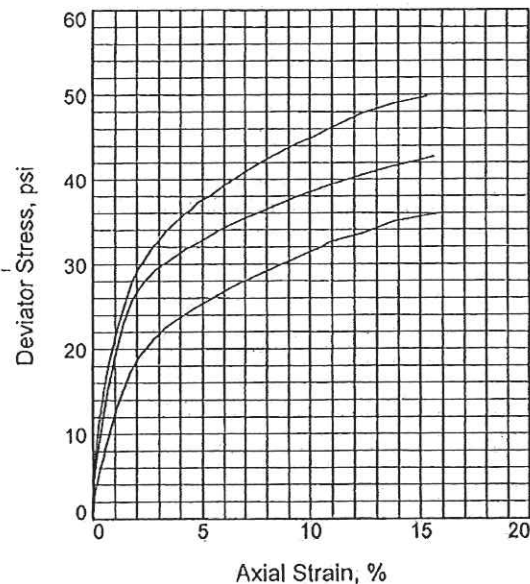
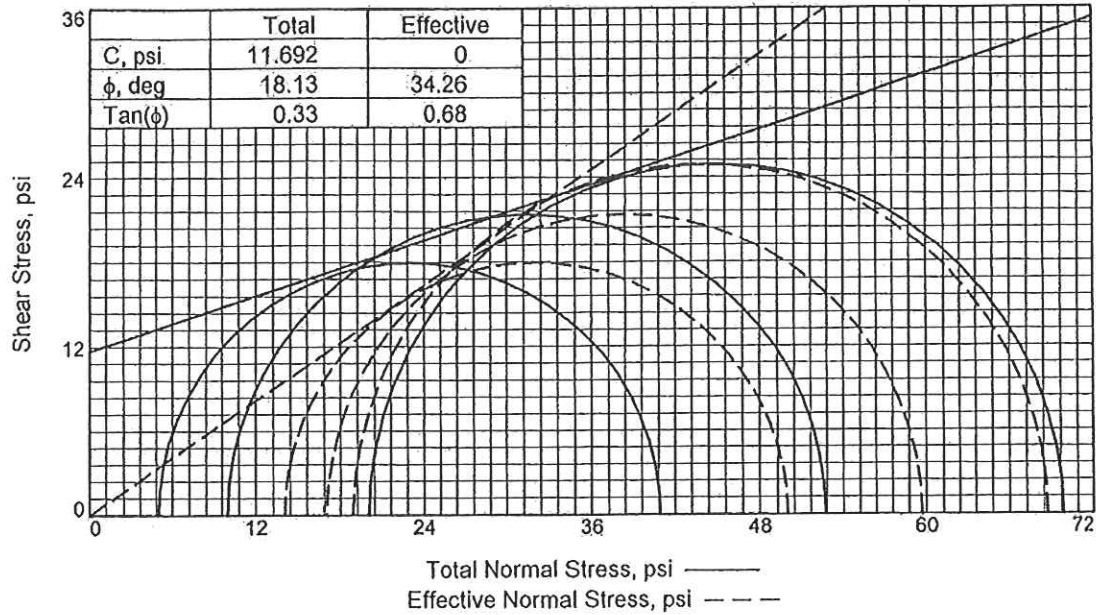
ASTM D1883

AASHTO T 193-81

Sample	Blows	Before Soaking				After Soaking	%Swell	CBR @ 0.1 inches	CBR @ 0.2 inches
		Wet Unit Weight (pcf)	Wet Unit Weight (kN/m³)	% Moisture	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m³)			
1	56	118.1	18.5	20.2%	98.3	15.4	21.0%	3.1	4.3

Surcharge Weight: 20LB

Figure No. _____



Sample No.		1	2	3
Initial	Water Content, %	20.2	20.2	20.2
	Dry Density, pcf	97.5	97.7	98.0
	Saturation, %	75.1	75.4	75.9
	Void Ratio	0.7281	0.7248	0.7201
	Diameter, in.	2.780	2.780	2.780
	Height, in.	5.500	5.500	5.500
At Test	Water Content, %	26.3	26.1	25.6
	Dry Density, pcf	98.6	98.8	99.6
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.7093	0.7060	0.6920
	Diameter, in.	2.770	2.770	2.765
	Height, in.	5.480	5.480	5.470
Strain rate, in./min.		0.001	0.001	0.001
Back Pressure, psi		60.00	60.00	60.00
Cell Pressure, psi		65.00	70.00	80.00
Fail. Stress, psi		35.91	42.70	49.79
Total Pore Pr., psi		51.00	53.00	61.10
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		49.91	59.70	68.69
$\bar{\sigma}_3$ Failure, psi		14.00	17.00	18.90

Type of Test:

CU with Pore Pressures

Sample Type: Remolded

Description: Brown Clayey sand with gravel

LL= 37 PL= 22 PI= 15

Assumed Specific Gravity= 2.70

Remarks: Lab No. 10359

Client: CAPITOL ENGINEERING**Project:** HARDY COUNTY COMPLEX ACCESS ROAD**Source of Sample:** 10359**Depth:** 10-15'**Sample Number:** B-5**Proj. No.:** N2105071**Date Sampled:** 10-13-10

TRIAXIAL SHEAR TEST REPORT

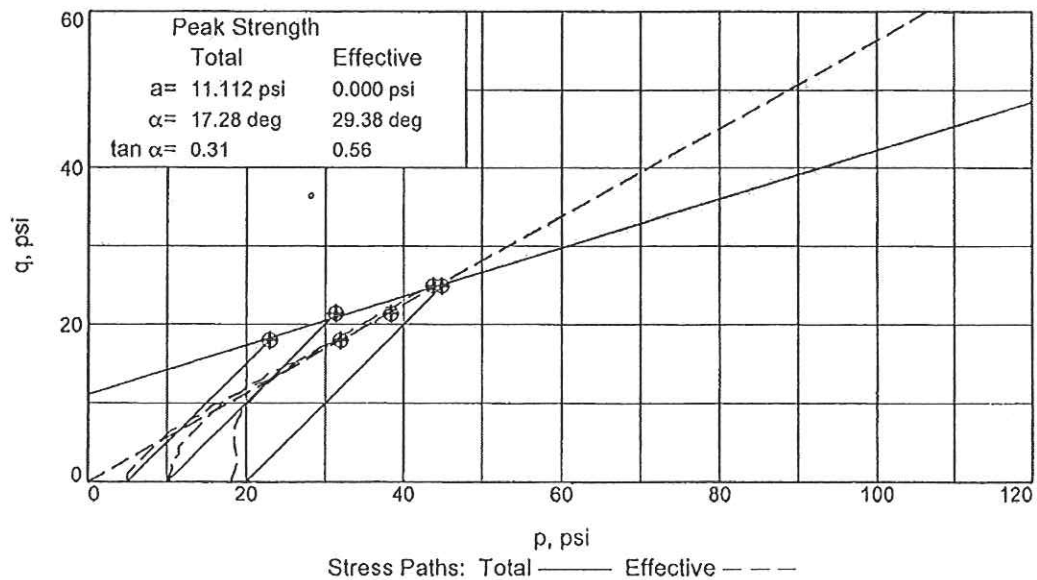
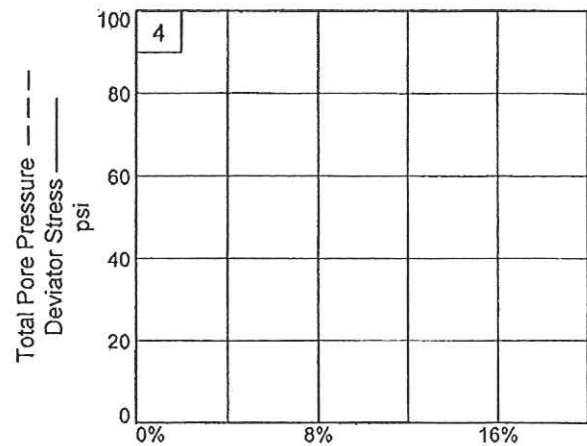
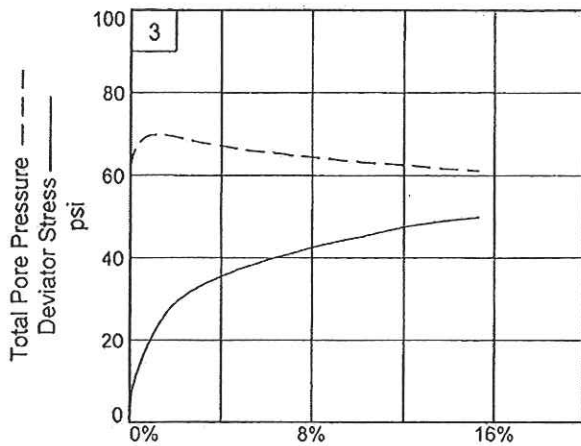
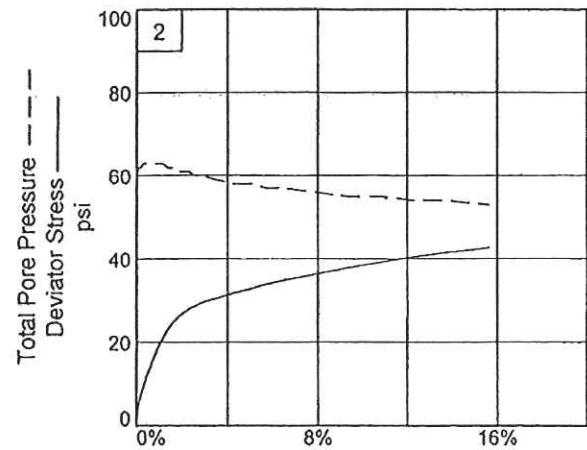
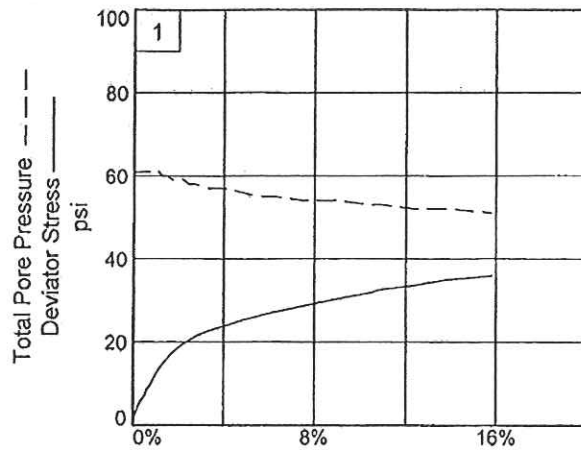
H.C. Nutting
A Terracon Company

Figure _____

Tested By: FCE

Checked By: GS

EXHIBIT B-6



Client: CAPITOL ENGINEERING

Project: HARDY COUNTY COMPLEX ACCESS ROAD

Source of Sample: 10359

Depth: 10-15'

Sample Number: B-5

Project No.: N2105071

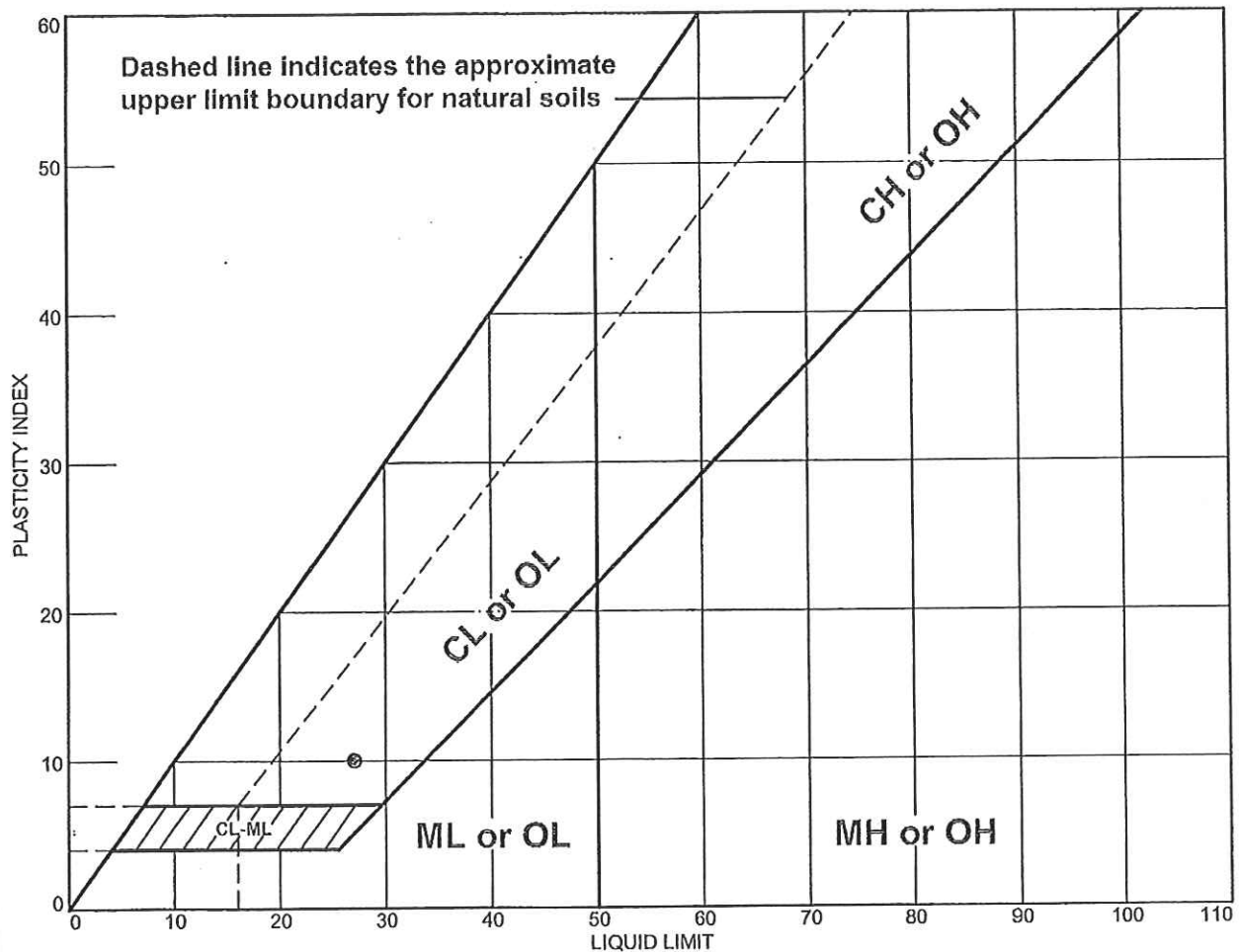
Figure _____

H.C. Nutting - A Terracon Company

Tested By: FCE _____ Checked By: GS _____

EXHIBIT B-7

LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
• brown silty clay	27	17	10			
•						

Project No. N2105072 Client: Capitol Engineering Inc.

Project: Moorefield Armed Forces Reserve Center

• Source of Sample: B-6 Depth: 20-25' Sample Number: BAG

H.C. Nutting
A Terracon Company
Charleston, West Virginia

Remarks:

Figure

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods.

Tested By: JF

Checked By: JLS

EXHIBIT B-8

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
20-25'				2.70	27	10	2	

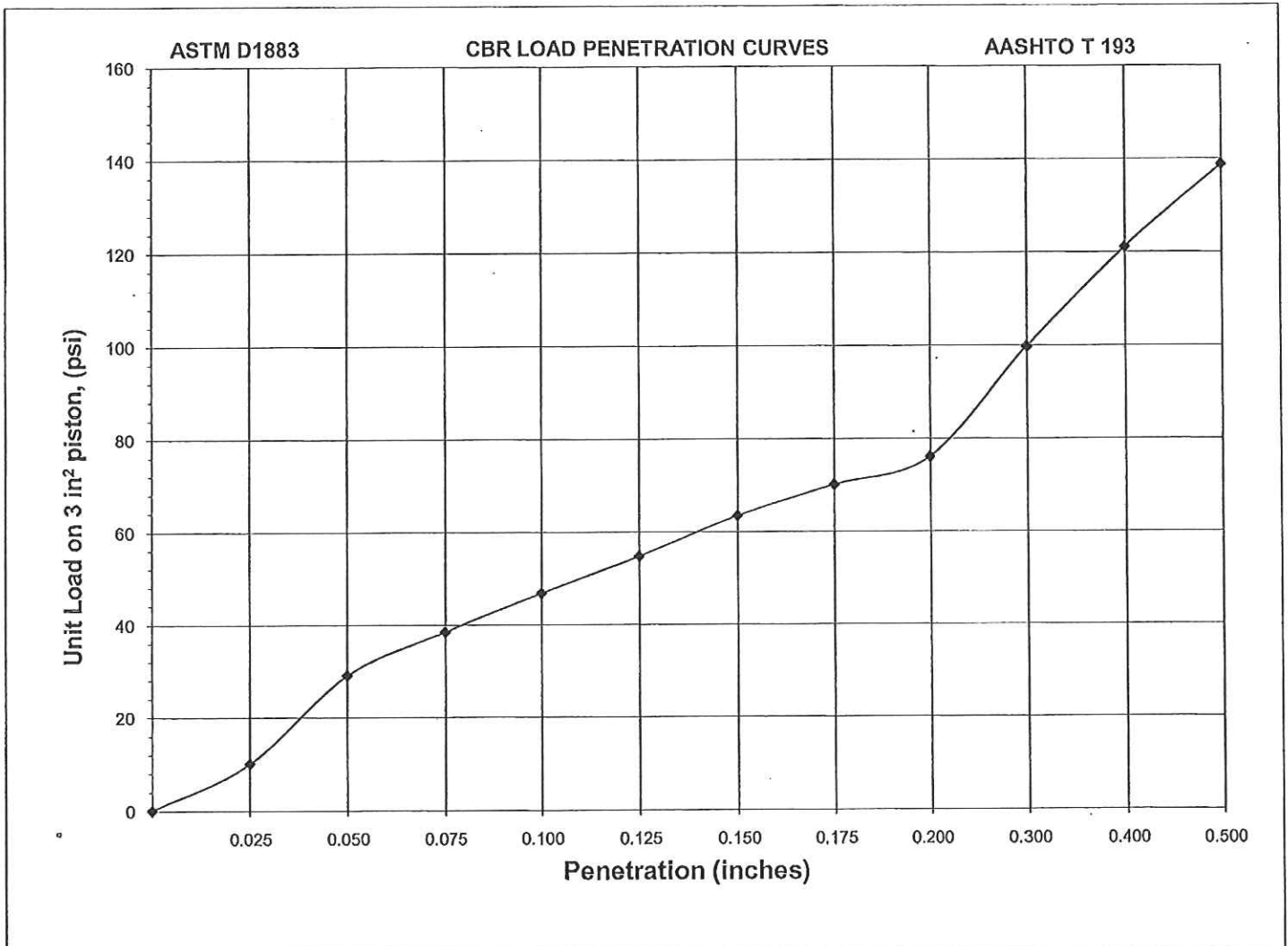
TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 132.3 pcf Optimum moisture = 9.0 %		brown silty clay
Project No. N2105072 Client: Capitol Engineering Inc. Project: Moorefield Armed Forces Reserve Center ○ Sample Source: B-6 Depth: 20-25' Sample No.: BAG		Remarks: Tested 10/18/10

Tested By: RB Checked By: JLS

EXHIBIT B-9


H. C. NUTTING
A Terracon COMPANY

HCN Division Office
912 Morris Street
Charleston, WV 25301
P: 304.344.0821
F: 304.342.4711
www.hcnutting.com
www.terracon.com



Report Date: 10/25/2010

Report No. -

Project No. N2105072

Client: Capitol Engineering, Inc.

Project: Moorefield Armed Forces Reserve Center

Boring: B-6

Sample: Bag

Depth: 20.0'-25.0'

Material Description: brown silty clay

USCS Classification: -

AASHTO Classification: -

Sample Trial #	Blows	Before Soaking					After Soaking % Moisture Top 1"	%Swell	CBR @ 0.1 inches	CBR @ 0.2 inches
		Wet Unit Weight (pcf) (kN/m³)		% Moisture	Dry Unit Weight (pcf) (kN/m³)					
1	35	136.7	21.5		8.9	125.4	19.7	14.9	1.72	4.7

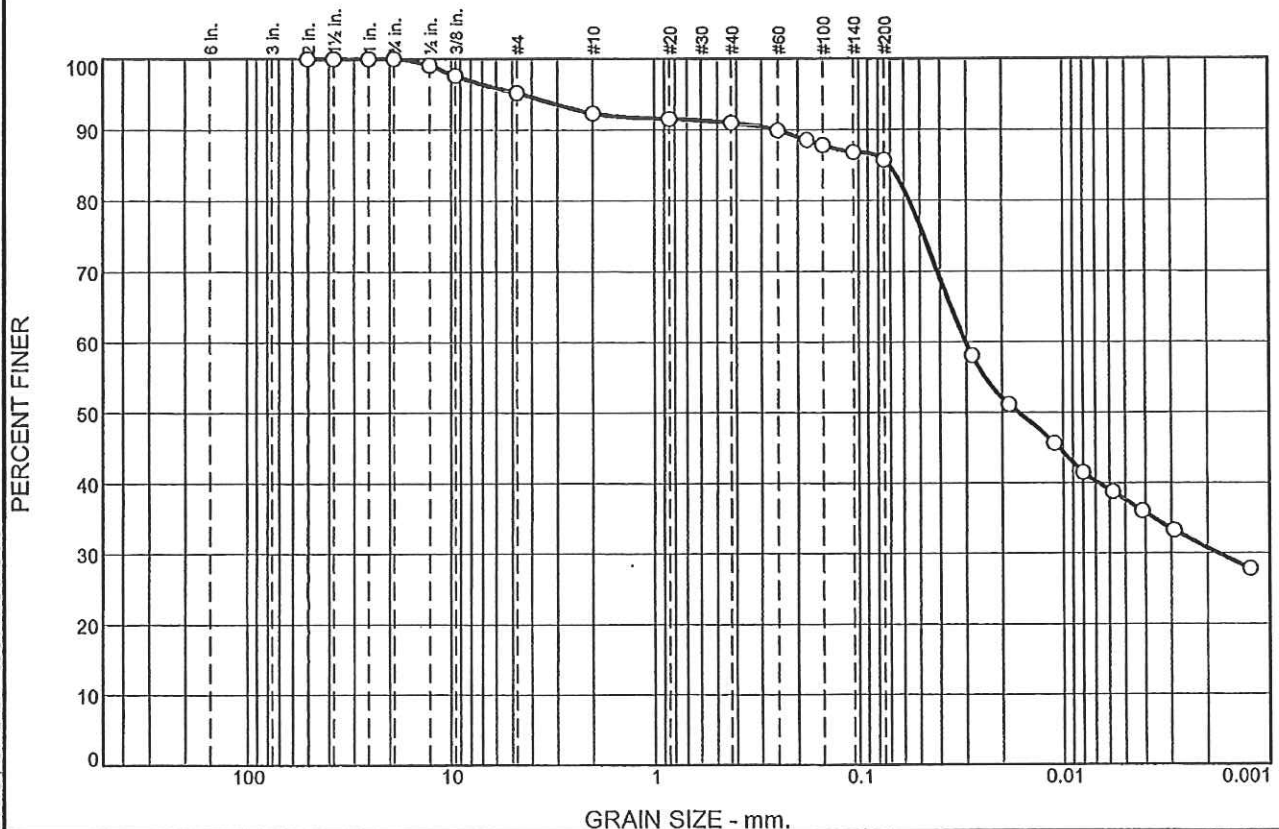
Surcharge Weight (lbs) 20.0

EXHIBIT B-10

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.8	2.9	1.3	5.2	48.2	37.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	99.0		
3/8"	97.6		
#4	95.2		
#10	92.3		
#20	91.6		
#40	91.0		
#60	89.9		
#80	88.6		
#100	87.8		
#140	86.8		
#200	85.8		

* (no specification provided)

Material Description		
lean clay		
Atterberg Limits		
PL = 17	LL = 35	PI = 18
Coefficients		
D ₉₀ = 0.2559	D ₈₅ = 0.0708	D ₆₀ = 0.0302
D ₅₀ = 0.0167	D ₃₀ = 0.0018	D ₁₅ =
D ₁₀ =	C _u =	C _c =
Classification		
USCS = CL	AASHTO = A-6(15)	
Remarks		

Source of Sample: B-13
Sample Number: 1

Depth: 8-12'

Date: 10/21/10

H.C. Nutting

A Terracon Company
Charleston, West Virginia

Client: Capitol Engineering Inc.
Project: Moorefield Armed Forces Reserve Center

Project No: N2105072

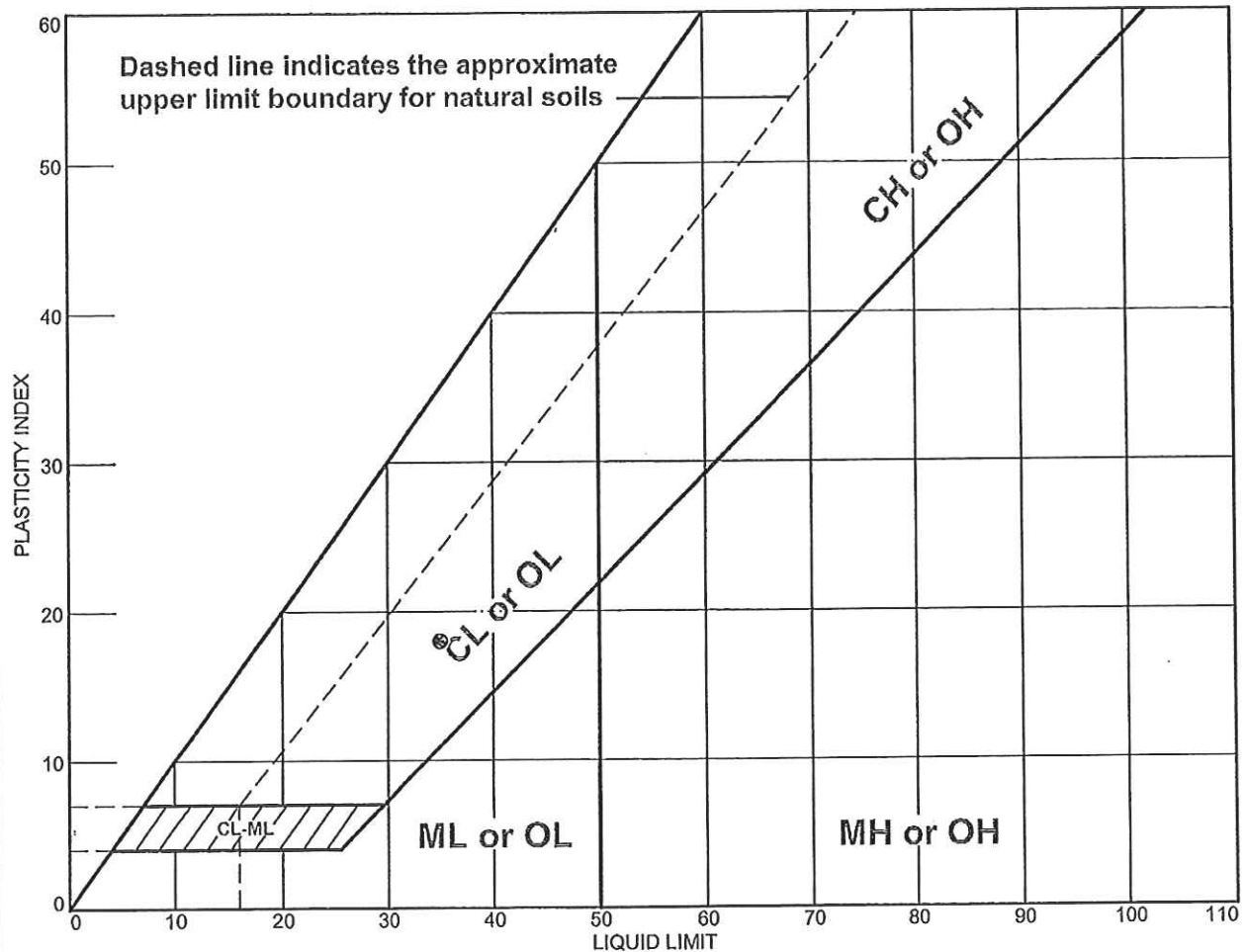
Figure

Tested By: JF

Checked By: JLS

EXHIBIT B-11

LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
lean clay	35	17	18	91.0	85.8	CL

Project No. N2105072 Client: Capitol Engineering Inc.

Project: Moorefield Armed Forces Reserve Center

Source of Sample: B-13 Depth: 8-12' Sample Number: 1

H.C. Nutting
A Terracon Company
Charleston, West Virginia

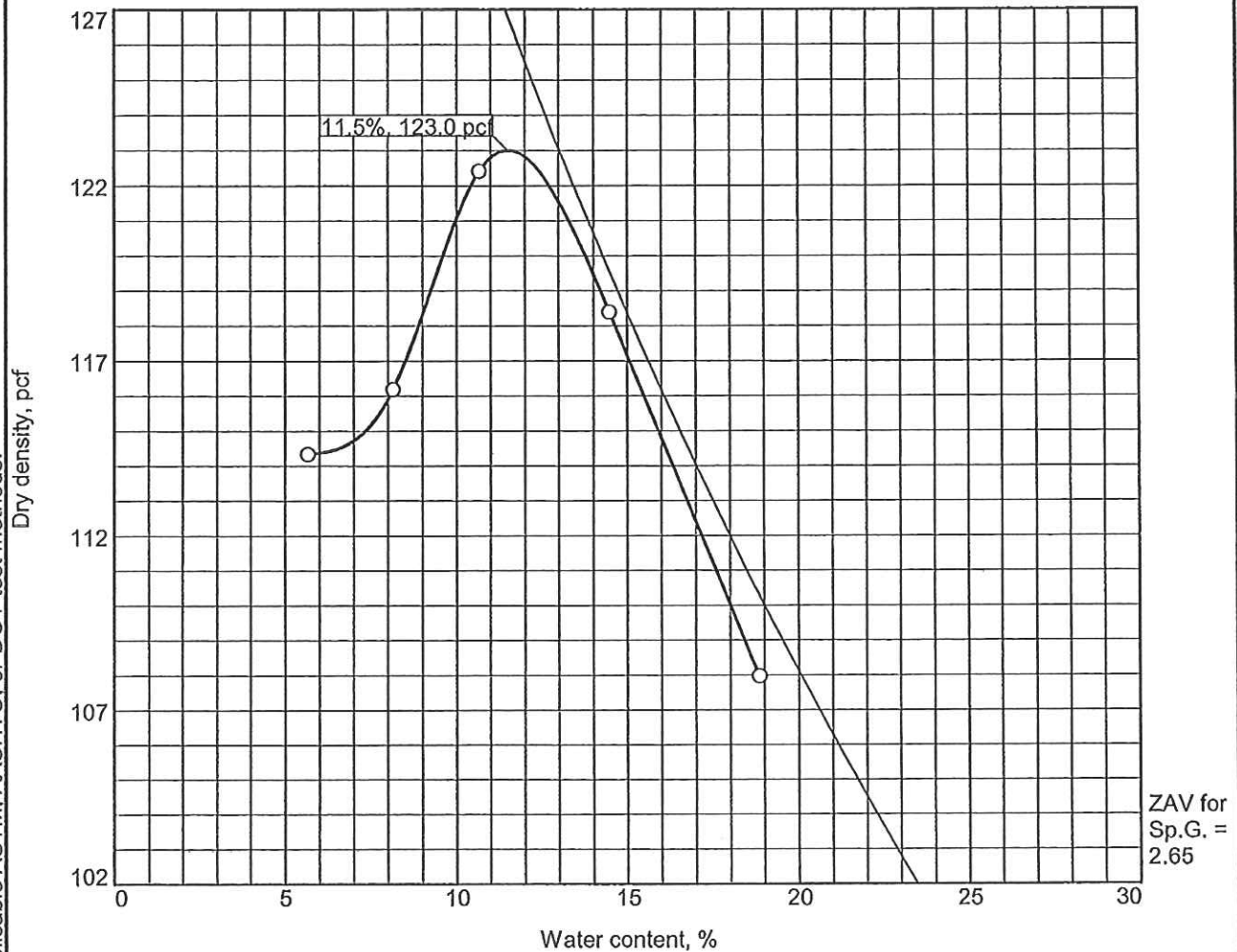
Remarks:

Figure

Tested By: JF Checked By: JLS

EXHIBIT B-12

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
8-12'	CL	A-6(15)		2.65	35	18	0.0	85.8

TEST RESULTS			MATERIAL DESCRIPTION
Maximum dry density = 123.0 pcf			lean clay
Optimum moisture = 11.5 %			
Project No. N2105072 Client: Capitol Engineering Inc. Project: Moorefield Armed Forces Reserve Center			Remarks: Tested 10/18/10
O Source of Sample: B-13 Depth: 8-12' Sample Number: 1			
H.C. Nutting A Terracon Company Charleston, West Virginia			

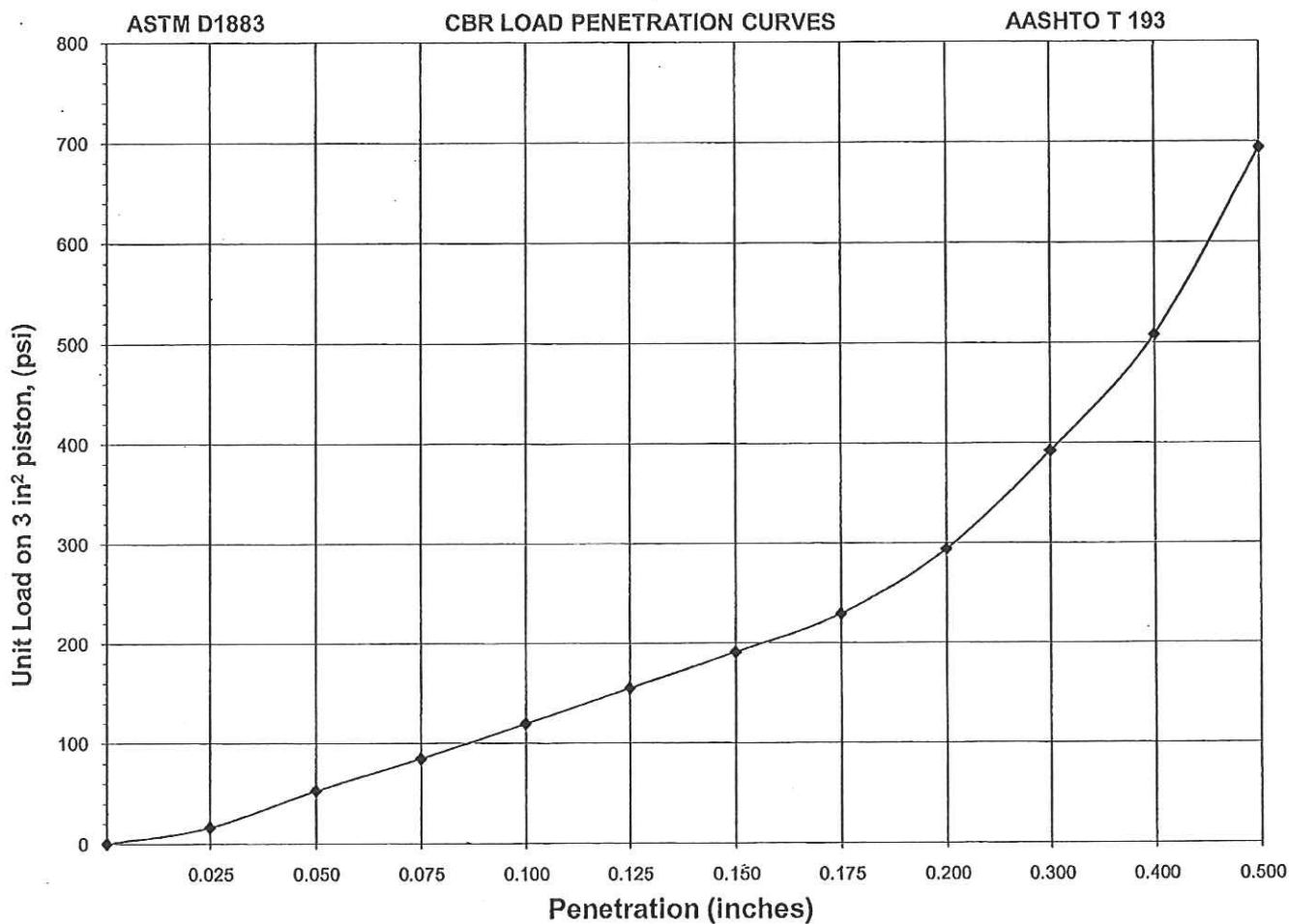
Figure

Tested By: Ray Bowman Checked By: _____

EXHIBIT B-13


H. C. NUTTING
A Terracon COMPANY

HCN Division Office
 912 Morris Street
 Charleston, WV 25301
 P: 304.344.0821
 F: 304.342.4711
 www.hcnutting.com
 www.terracon.com



Report Date: 10/25/2010

Boring: B-13

Report No. -

Sample: Bag

Project No. N2105072

Depth: 8.0'-12.0'

Client: Capitol Engineering, Inc.

Material Description: lean clay

Project: Moorefield Armed Forces Reserve Center

USCS Classification: CL

AASHTO Classification: A-6(15)

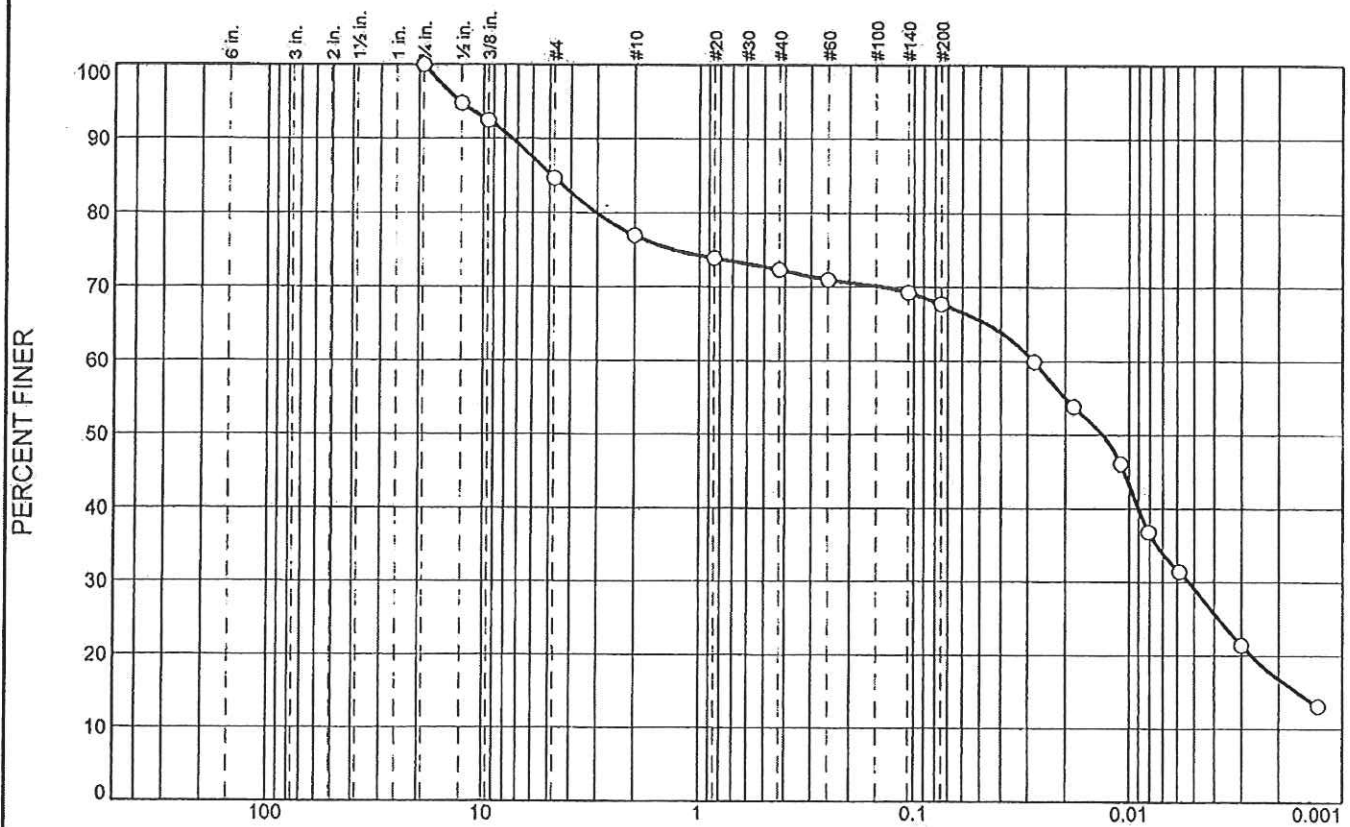
Sample Trial #	Blows	Before Soaking				After Soaking	%Swell	CBR @ 0.1 inches	CBR @ 0.2 inches	
		Wet Unit Weight		% Moisture	Dry Unit Weight					% Moisture Top 1"
		(pcf)	(kN/m³)		(pcf)	(kN/m³)				
1	50	130.0	20.4	11.4	116.6	18.3	21.0	4.94	11.9	19.6

 Surcharge Weight (lbs) 20.0

EXHIBIT B-14

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.3	7.7	4.7	4.6	38.5	29.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	94.8		
.375	92.5		
#4	84.7		
#10	77.0		
#20	73.9		
#40	72.3		
#60	71.0		
#140	69.3		
#200	67.7		

* (no specification provided)

Material Description

Brown Sandy silt with gravel

Atterberg Limits

PL= 26

LL= 32

PI= 6

Coefficients

D₉₀= 7.4309

D₈₅= 4.8859

D₆₀= 0.0280

D₅₀= 0.0133

D₃₀= 0.0053

D₁₅= 0.0016

D₁₀=

C_u=

C_c=

Classification

USCS= ML

AASHTO= A-4(3)

Remarks

LAB NO. 10358

Source of Sample: 10358
Sample Number: B-17

Depth: 0.3-1.0'

Date: 10-13-10

H.C. Nutting

A Terracon Company
Cincinnati, Ohio

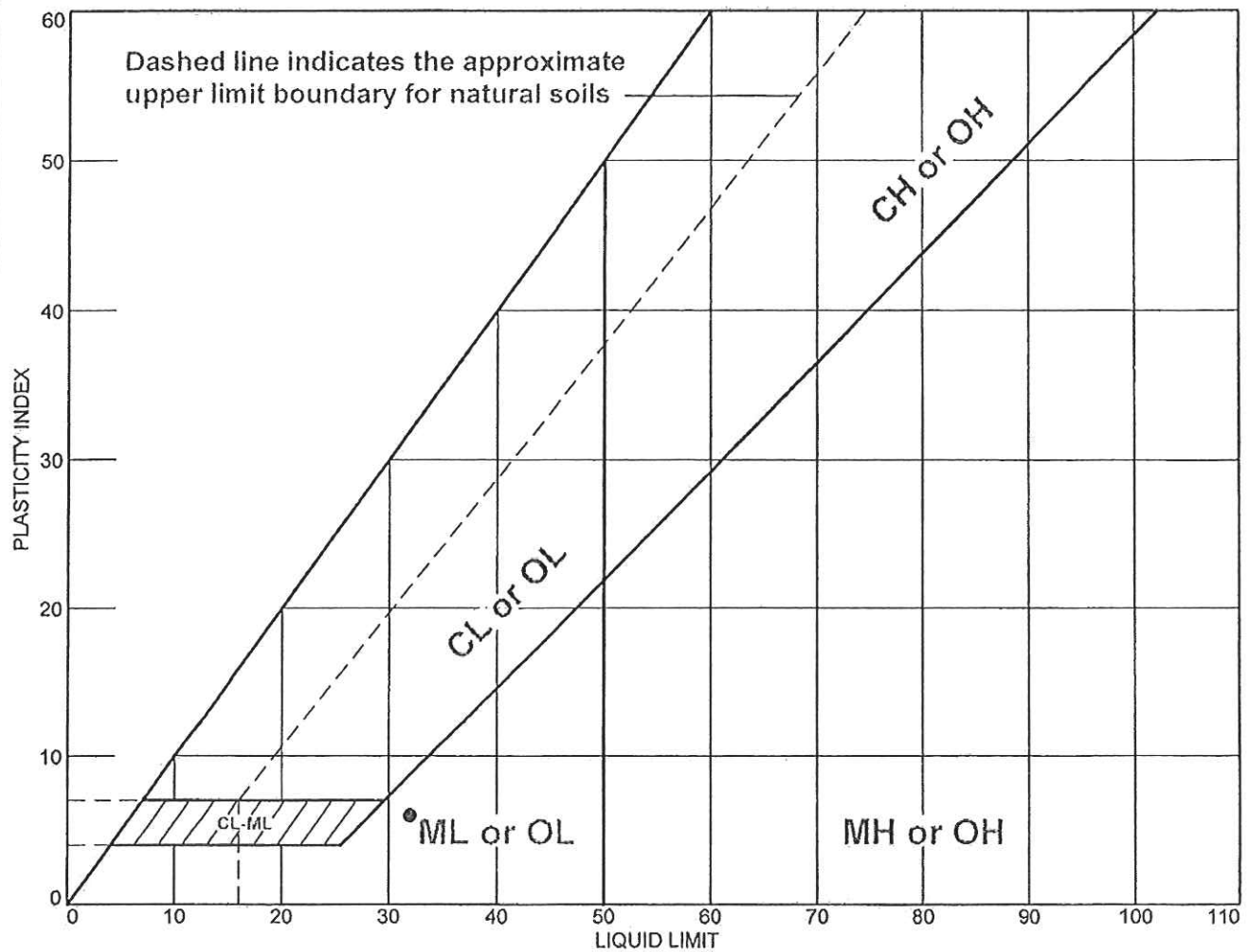
Client: CAPITOL ENGINEERING

Project: HARDY COUNTY COMPLEX ACCESS ROAD

Project No: N2105071

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
•	Brown Sandy Silt with gravel	32	26	6	72.3	67.7	ML

Project No. N2105071 Client: CAPITOL ENGINEERING

Project: HARDY COUNTY COMPLEX ACCESS ROAD

• Source of Sample: 10358 Depth: 0.3-1.0' Sample Number: B-17

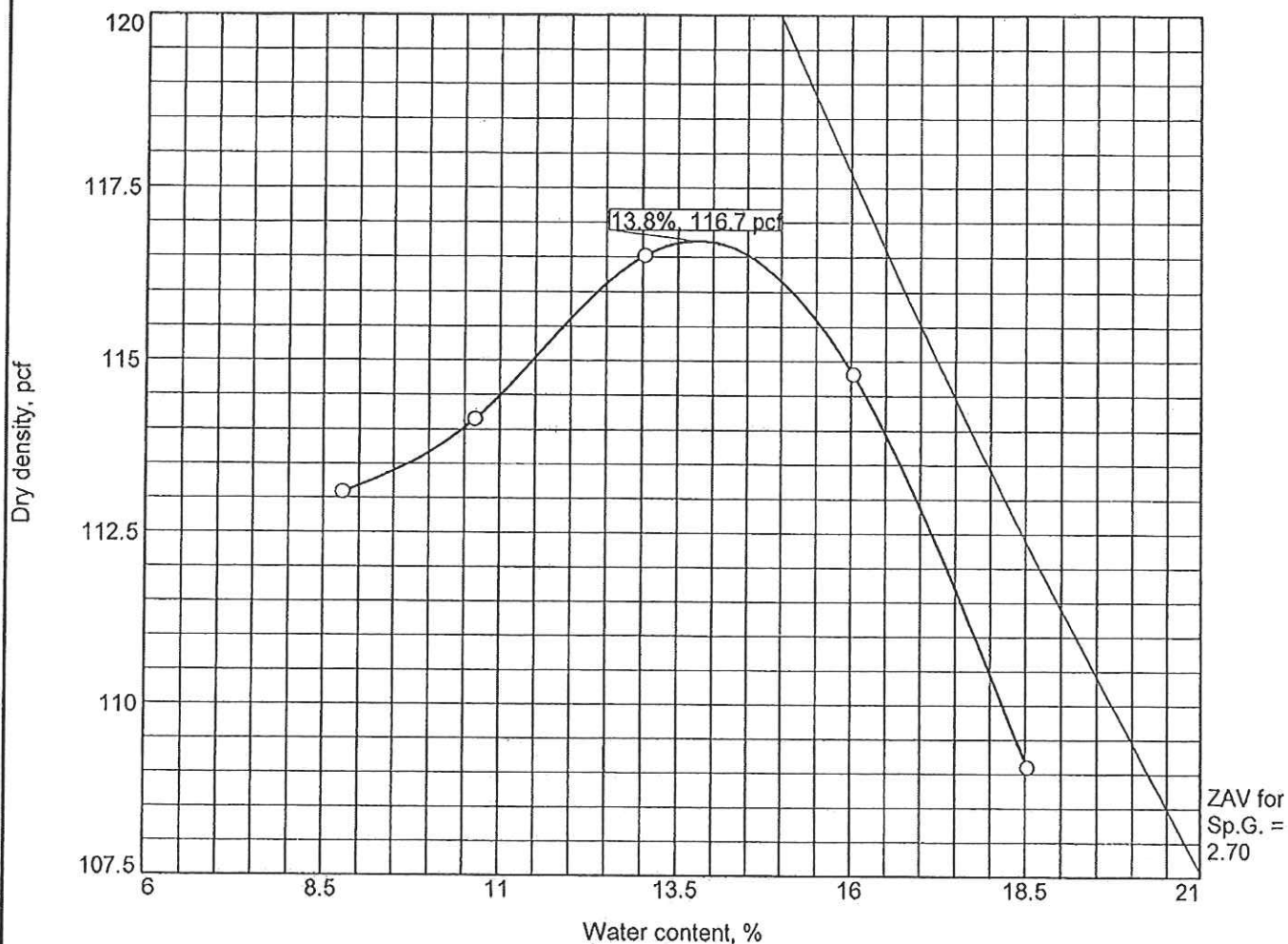
Remarks:

H.C. Nutting
A Terracon Company
Cincinnati, Ohio

Figure ,10359

EXHIBIT B-16

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
0.3-1.0'	ML	A-4(3)		2.70	32	6	15.3	67.7

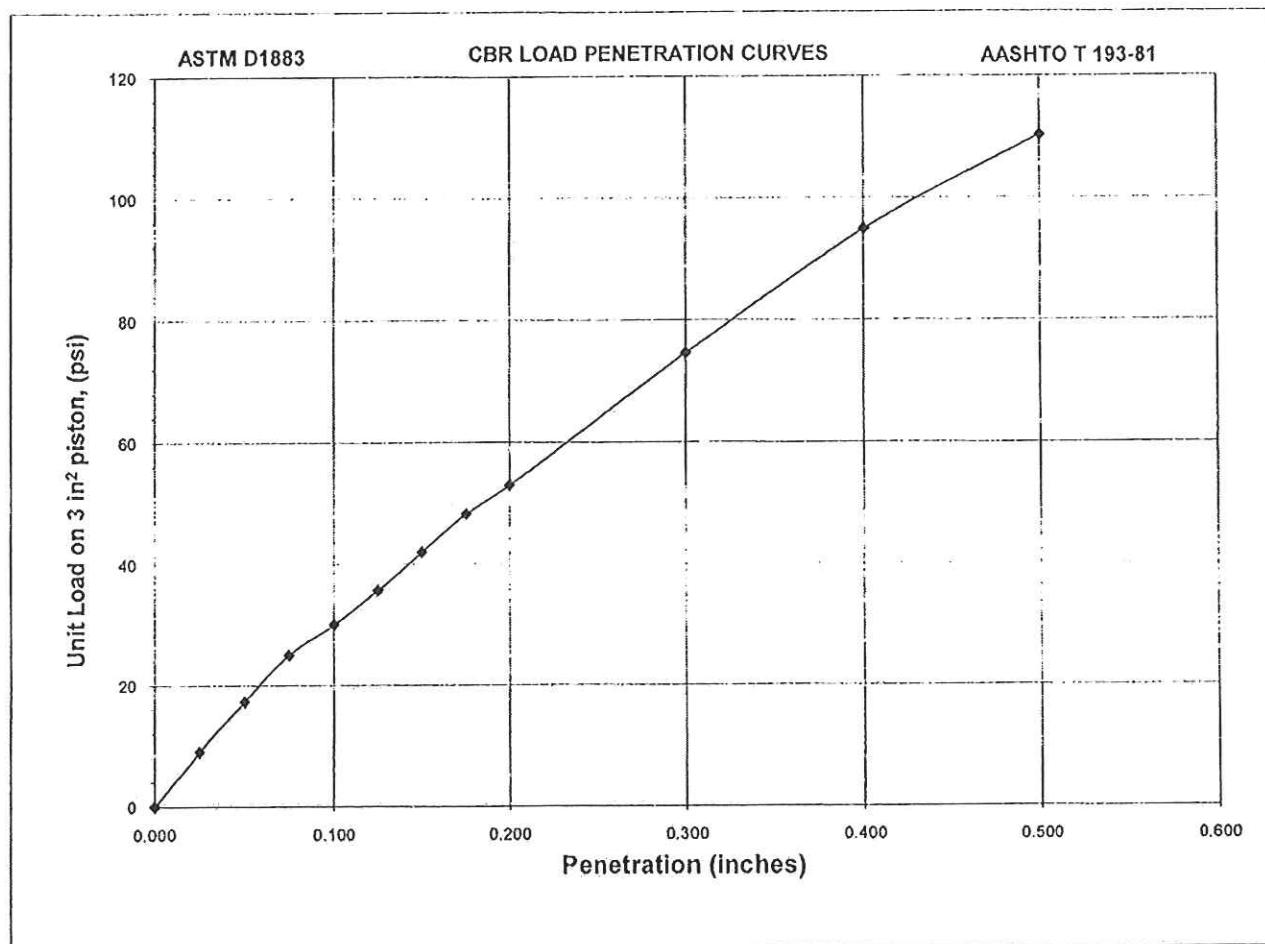
TEST RESULTS			MATERIAL DESCRIPTION
Maximum dry density = 116.7 pcf			Brown Sandy silt with gravel
Optimum moisture = 13.8 %			
Project No. N2105071 Client: CAPITOL ENGINEERING Project: HARDY COUNTY COMPLEX ACCESS ROAD			Remarks: Lab No. 10358
o Sample Source: 10358 Depth: 0.3-1.0' Sample No.: B-17			
<div>H.C. Nutting A Terracon Company Cincinnati, Ohio</div>			
			Figure

Tested By: KD Checked By: GS

EXHIBIT B-17


H. C. NUTTING
A Terracon COMPANY

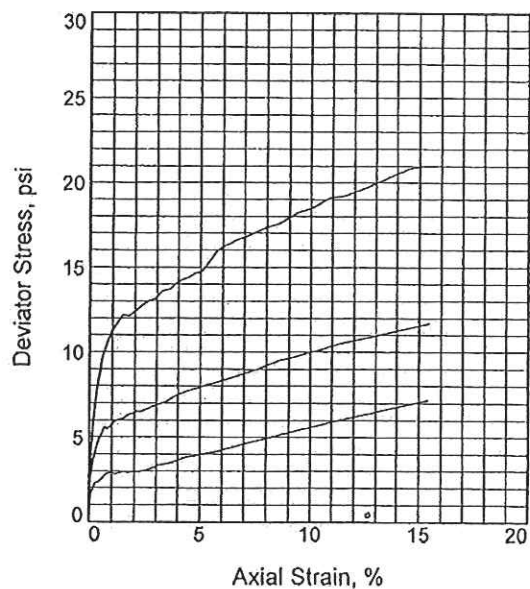
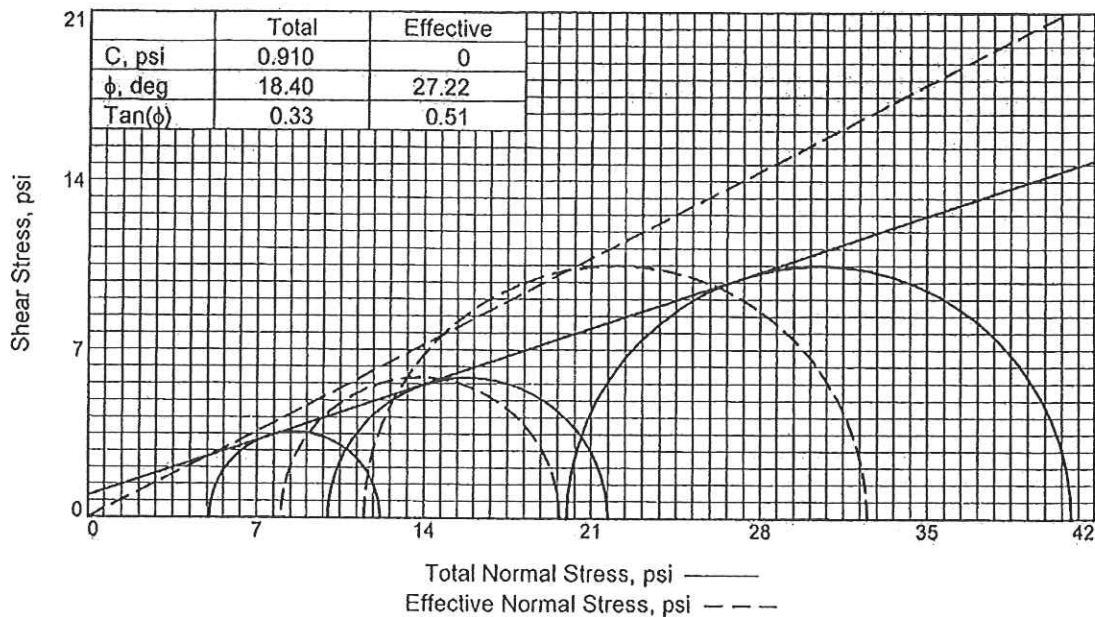
HCN Division Office
611 Lunken Park Drive
Cincinnati, Ohio 45226
Phone 513.321.5816
Fax 513.321.0294
www.hcnutting.com
www.terracon.com


TERRACON
611 Lunken Park Dr., Cincinnati, Ohio 45226
513-321-5816
Client: Capitol Engineering
Project: HARDY COUNTY COMPLEX ACCESS ROAD
W.O.# N2105071
Boring: B-17 **Depth:** 0.3-1.0
Description: Br Sandy Silt w/gravel
Sample: _____

Lab Number: 10358
Date: 10-26-10
ASTM D1883
AASHTO T 193-81

Sample	Blows	Before Soaking				After Soaking	%Swell	CBR @ 0.1 inches	CBR @ 0.2 inches
		Wet Unit Weight (pcf)	Wet Unit Weight (kN/m³)	% Moisture	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m³)			
1	56	130.8	20.5	13.8%	114.9	18.0	18.0%	1.4	3.0

Surcharge Weight: 20LB
Figure No. _____



Sample No.		1	2	3
Initial	Water Content, %	13.9	13.9	13.9
	Dry Density, pcf	114.5	114.5	114.5
	Saturation, %	79.2	79.2	79.2
	Void Ratio	0.4721	0.4722	0.4721
	Diameter, in.	2.780	2.780	2.780
	Height, in.	5.500	5.500	5.500
At Test	Water Content, %	17.2	16.9	16.3
	Dry Density, pcf	115.1	115.8	117.0
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.4641	0.4562	0.4401
	Diameter, in.	2.775	2.770	2.760
	Height, in.	5.490	5.480	5.460
Strain rate, in./min.		0.001	0.001	0.001
Back Pressure, psi		70.00	70.00	70.00
Cell Pressure, psi		75.00	80.00	90.00
Fail. Stress, psi		7.18	11.69	21.00
Total Pore Pr., psi		70.00	72.00	78.50
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		12.18	19.69	32.50
$\bar{\sigma}_3$ Failure, psi		5.00	8.00	11.50

Type of Test:

CU with Pore Pressures

Sample Type: Remolded

Description: Brown Sandy Silt with gravel

LL= 32 PL= 26 PI= 6

Assumed Specific Gravity= 2.70

Remarks: Lab No. 10,358

Client: CAPITOL ENGINEERING**Project:** HARDY COUNTY COMPLEX ACCESS ROAD**Source of Sample:** 10358**Depth:** 0.3-1.0'**Sample Number:** B-17**Proj. No.:** N2105071**Date Sampled:** 10-13-10

TRIAXIAL SHEAR TEST REPORT

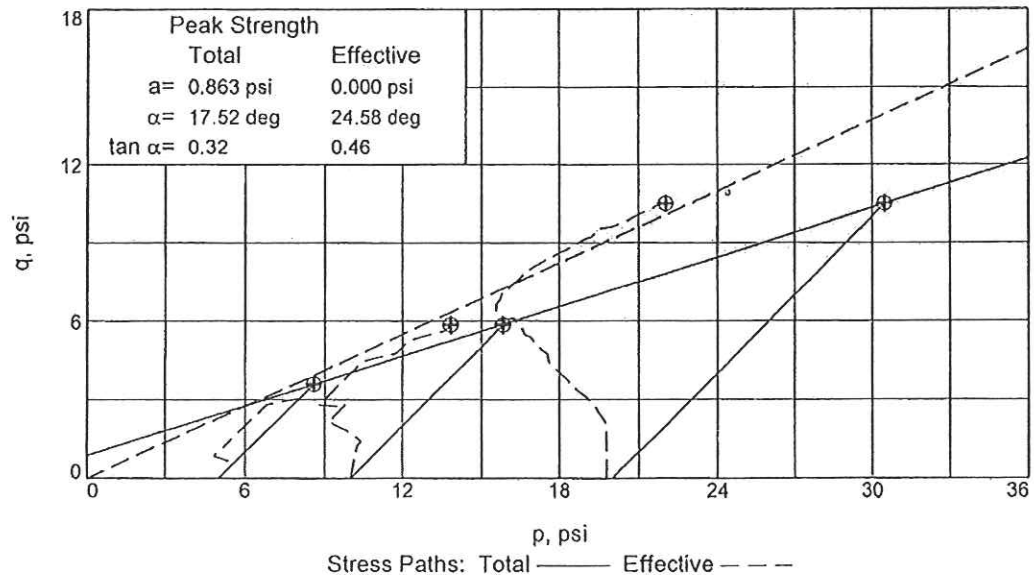
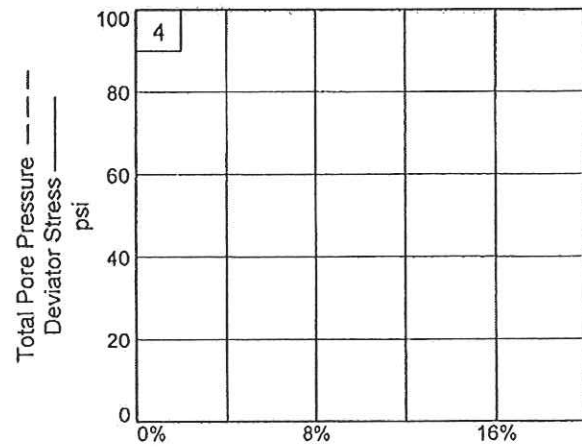
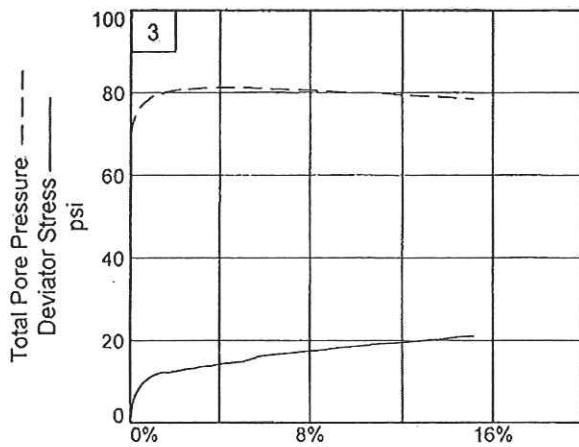
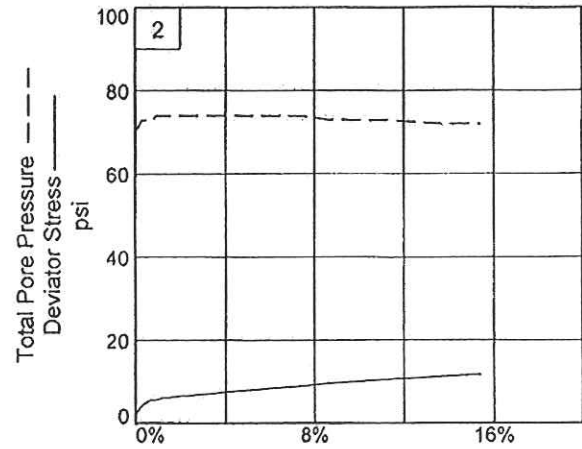
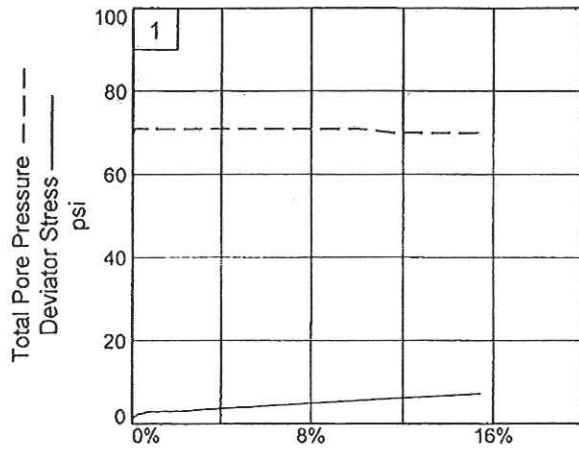
H.C. Nutting
A Terracon Company

Figure _____

Tested By: FCE

Checked By: GS

EXHIBIT B-19



Client: CAPITOL ENGINEERING

Project: HARDY COUNTY COMPLEX ACCESS ROAD

Source of Sample: 10358

Depth: 0.3-1.0'

Sample Number: B-17

Project No.: N2105071

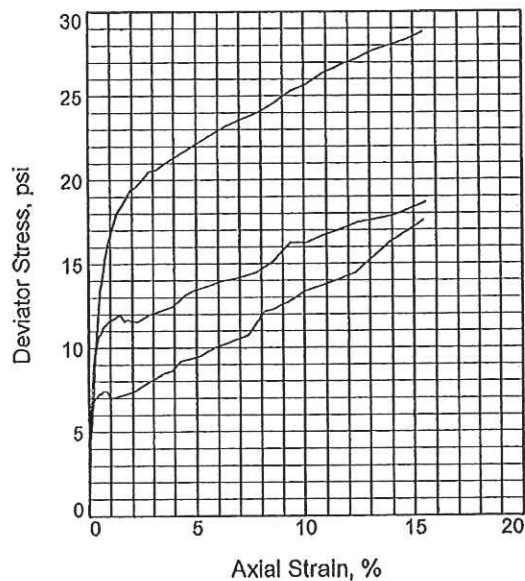
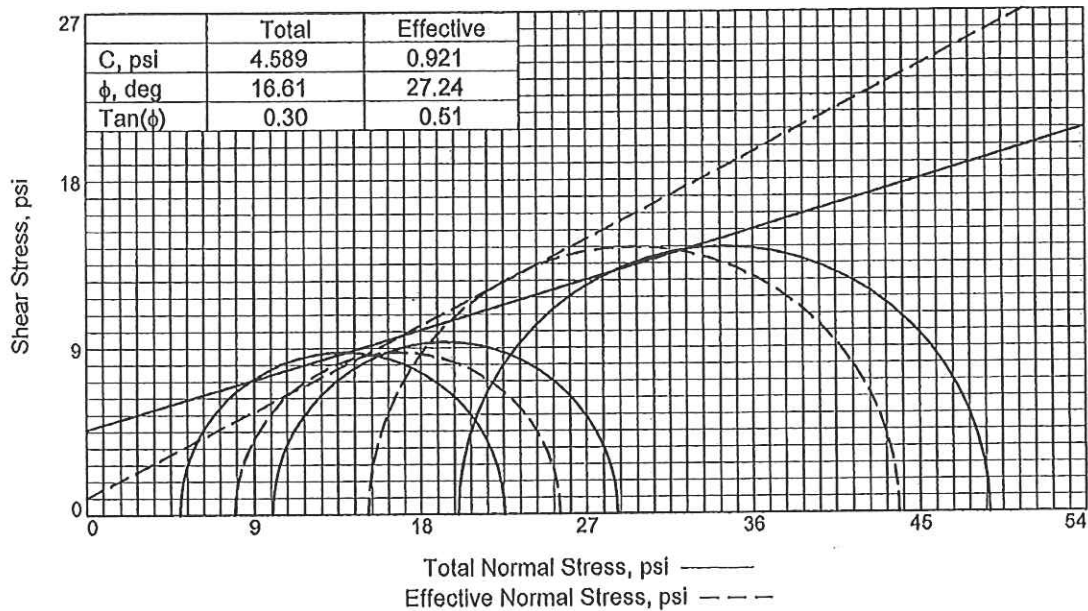
Figure _____

H.C. Nutting - A Terracon Company

Tested By: FCE _____

Checked By: GS _____

EXHIBIT B-20



Sample No.		1	2	3
Initial	Water Content, %	20.3	20.3	20.3
	Dry Density, pcf	103.1	103.4	103.6
	Saturation, %	86.2	86.9	87.3
	Void Ratio	0.6347	0.6298	0.6269
	Diameter, in.	2.780	2.780	2.780
	Height, in.	5.500	5.500	5.490
At Test	Water Content, %	22.8	22.7	22.6
	Dry Density, pcf	104.2	104.6	104.7
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.6169	0.6120	0.6092
	Diameter, in.	2.770	2.770	2.770
	Height, in.	5.480	5.480	5.470
Strain rate, in./min.		0.001	0.001	0.001
Back Pressure, psi		70.00	70.00	70.00
Cell Pressure, psi		75.00	80.00	90.00
Fail. Stress, psi		17.54	18.64	28.77
Total Pore Pr., psi		67.00	70.00	74.90
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		25.54	28.64	43.87
$\bar{\sigma}_3$ Failure, psi		8.00	10.00	15.10

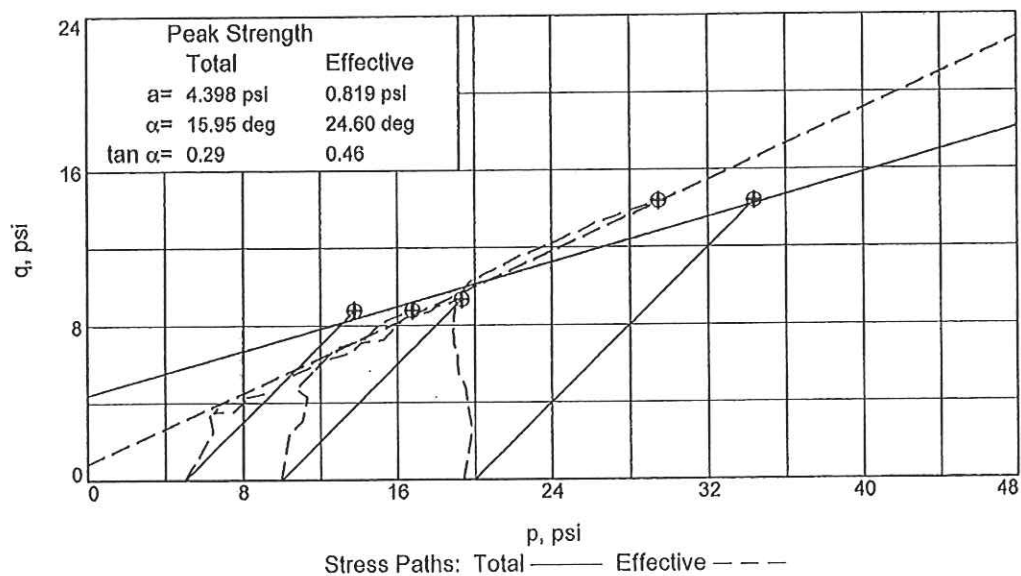
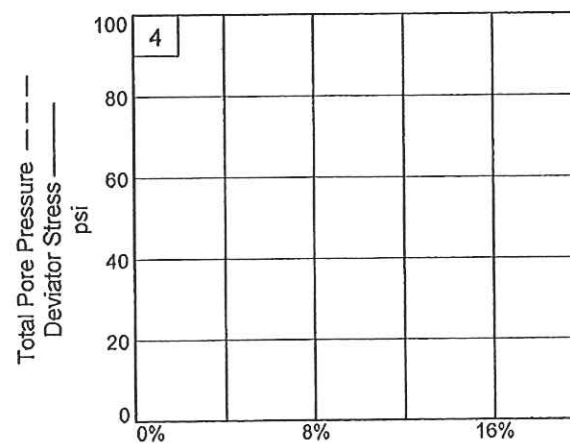
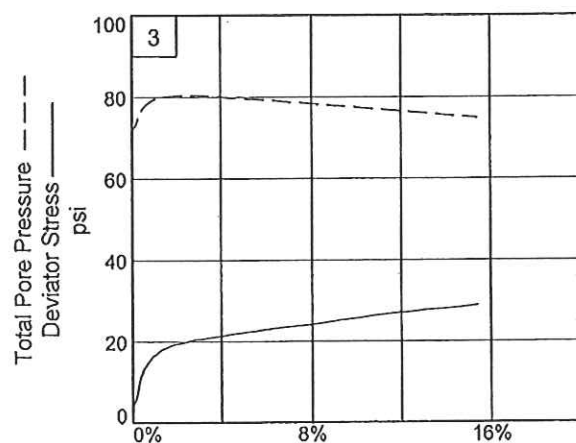
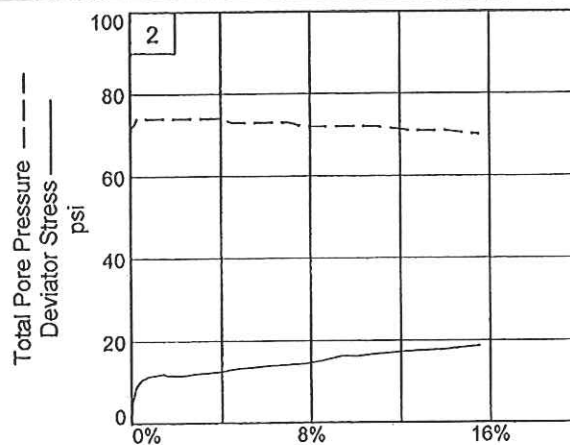
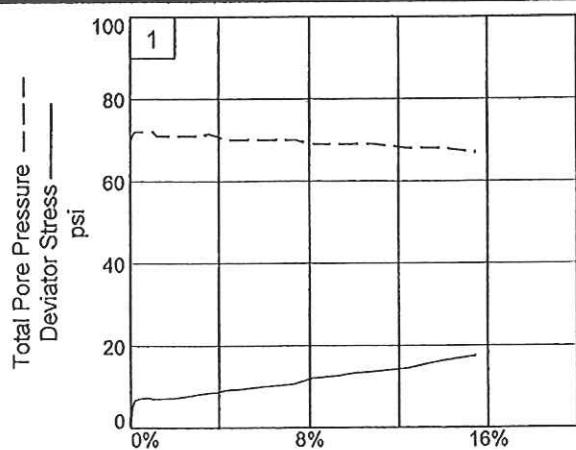
Type of Test:

CU with Pore Pressures

Sample Type: Remolded @ 95% pcf, 20.0% omc**Description:** RED BROWN LEAN CLAY**Assumed Specific Gravity=** 2.70**Remarks:** Lab No. 10211**Client:** CAPITOL ENGINEERING**Project:** HARDY COUNTY COMPLEX ACCESS ROAD**Source of Sample:** B-23**Depth:** 1-7'**Proj. No.:** N2105072**Date Sampled:** 10-14-10

TRIAXIAL SHEAR TEST REPORT

H.C. Nutting
 A Terracon Company
Figure _____**Tested By:** FCE**Checked By:** GS



Client: CAPITOL ENGINEERING

Project: |HARDY COUNTY COMPLEX ACCESS ROAD

Source of Sample: B-23

Depth: 1-7'

Project No.: N2105072

Figure _____

H.C. Nutting - A Terracon Company

Tested By: FCE

Checked By: GS

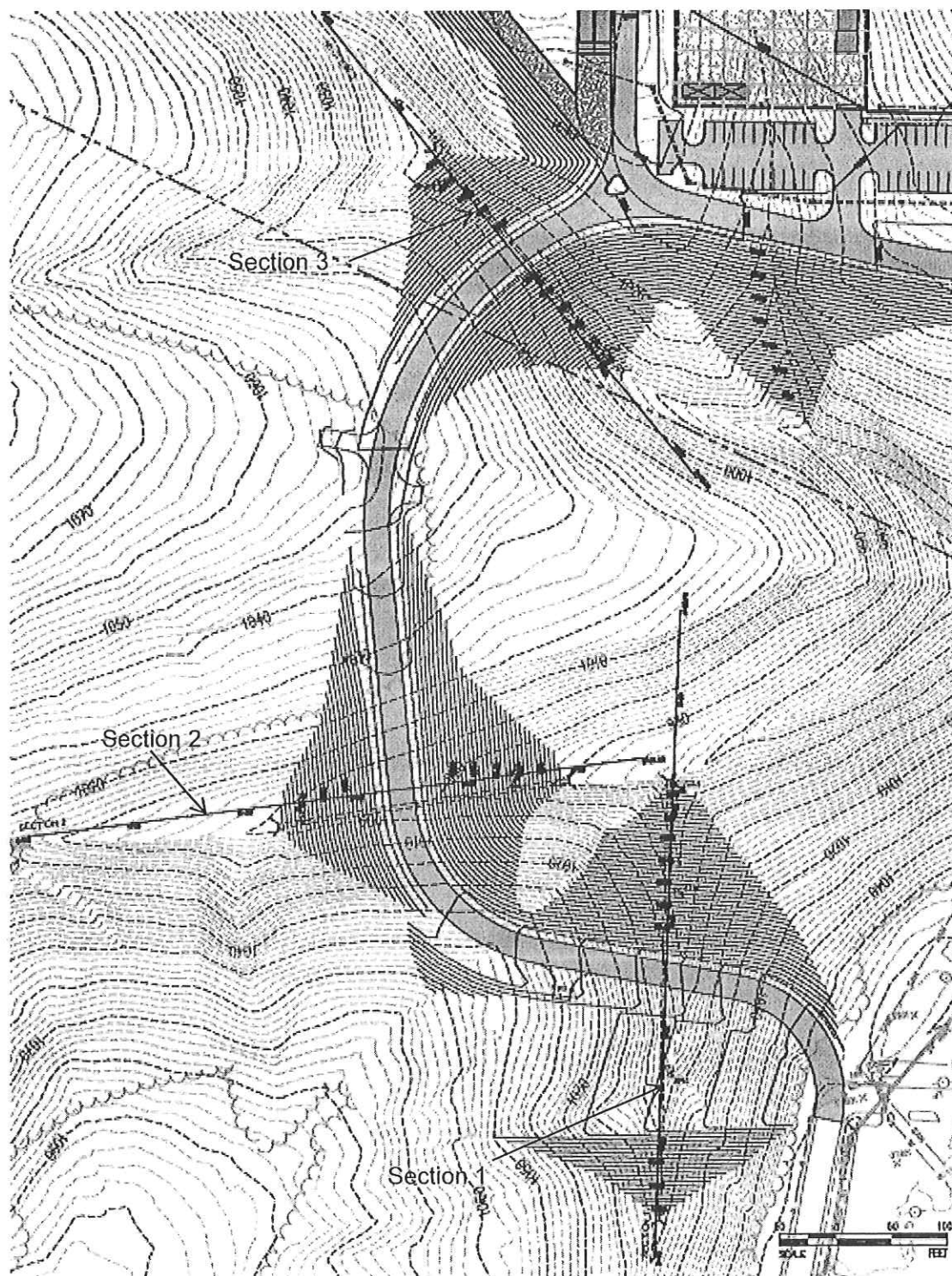


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT
INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	YSR	Project No.	N2105071
Drawn by:	YSR	Scale:	As Shown
Checked by:	TAG	File Name:	Sections
Approved by:	YSR	Date:	07/01/2011

Terracon
Consulting Engineers & Scientists

912 Morris Street Charleston, West Virginia 25301
PH. (304) 344-0821 FAX. (304) 342-4711

SLOPE STABILITY SECTION LOCATIONS

HARDY COUNTY COMPLEX ACCESS ROAD
CAPITOL ENGINEERING, INC.
MOOREFIELD, WEST VIRGINIA

EXHIBIT

B-23

Capitol Engineering

Hardy County Complex Access Road

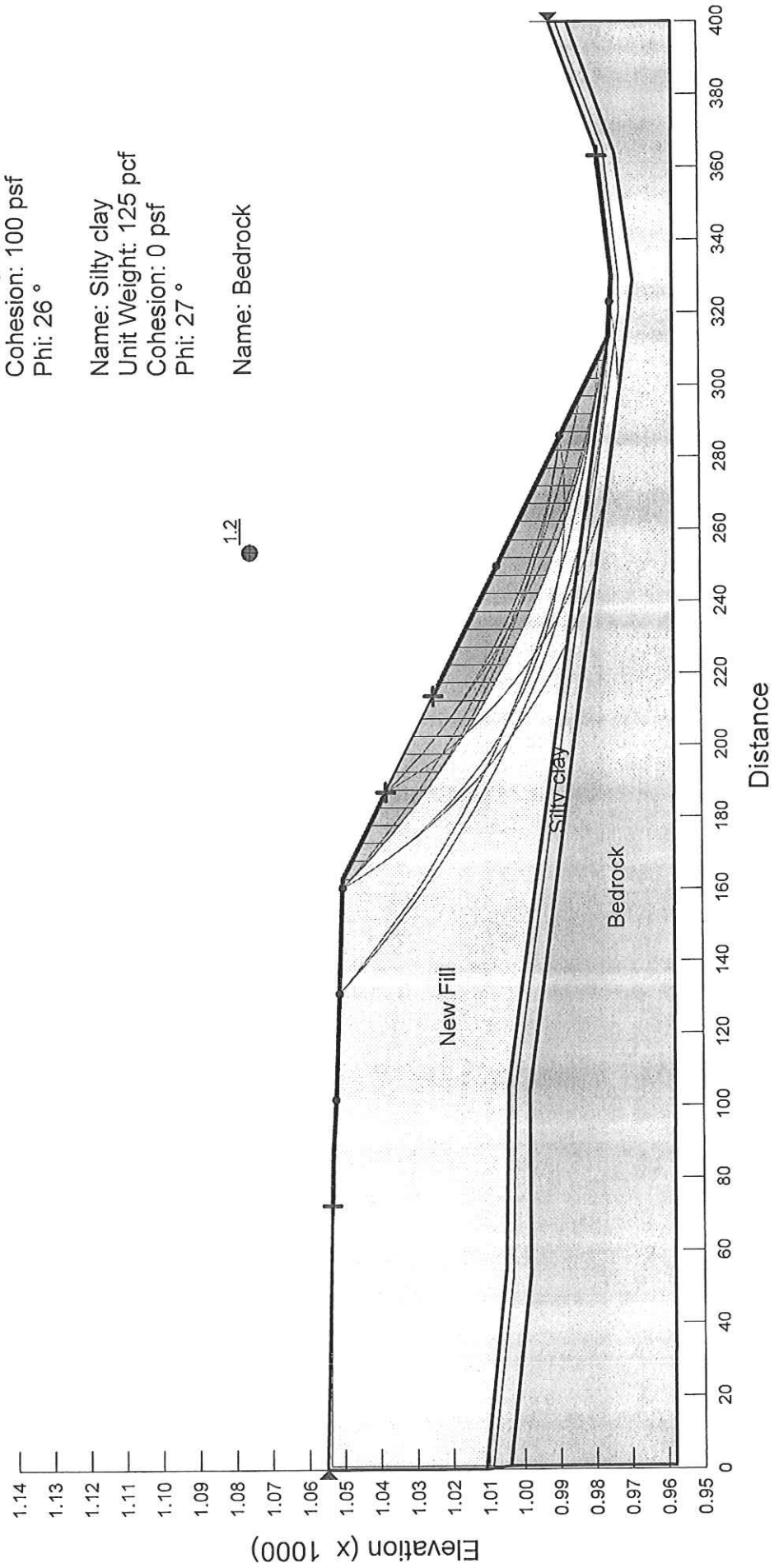
Section 1

Case: As Proposed

Name: New Fill
 Unit Weight: 125 pcf
 Cohesion: 100 psf
 Phi: 26 °

Name: Silty clay
 Unit Weight: 125 pcf
 Cohesion: 0 psf
 Phi: 27 °

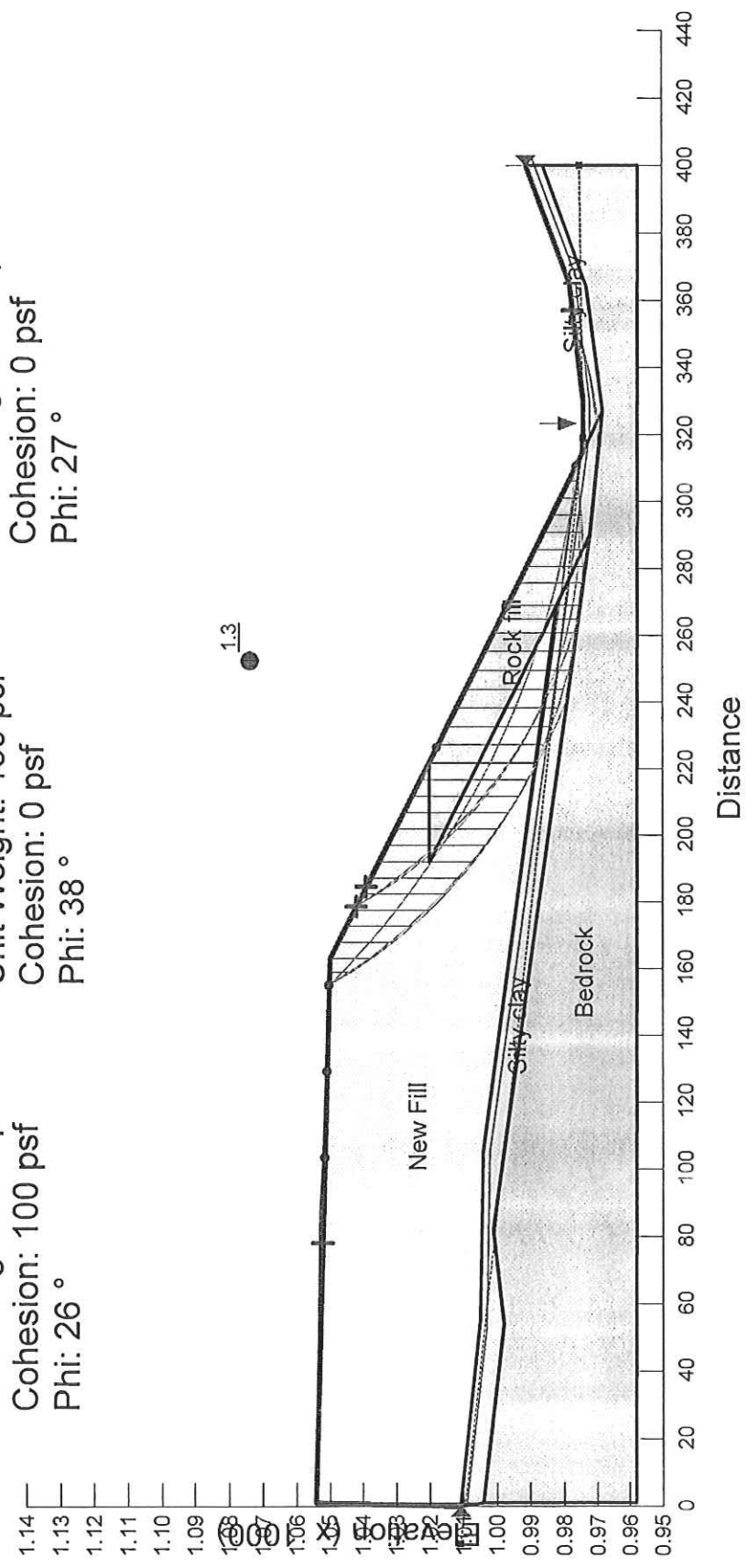
Name: Bedrock



Capitol Engineering
Hardy County Complex Access Road
Section 1

Case: 30' wide rock fill face to 30 feet below top

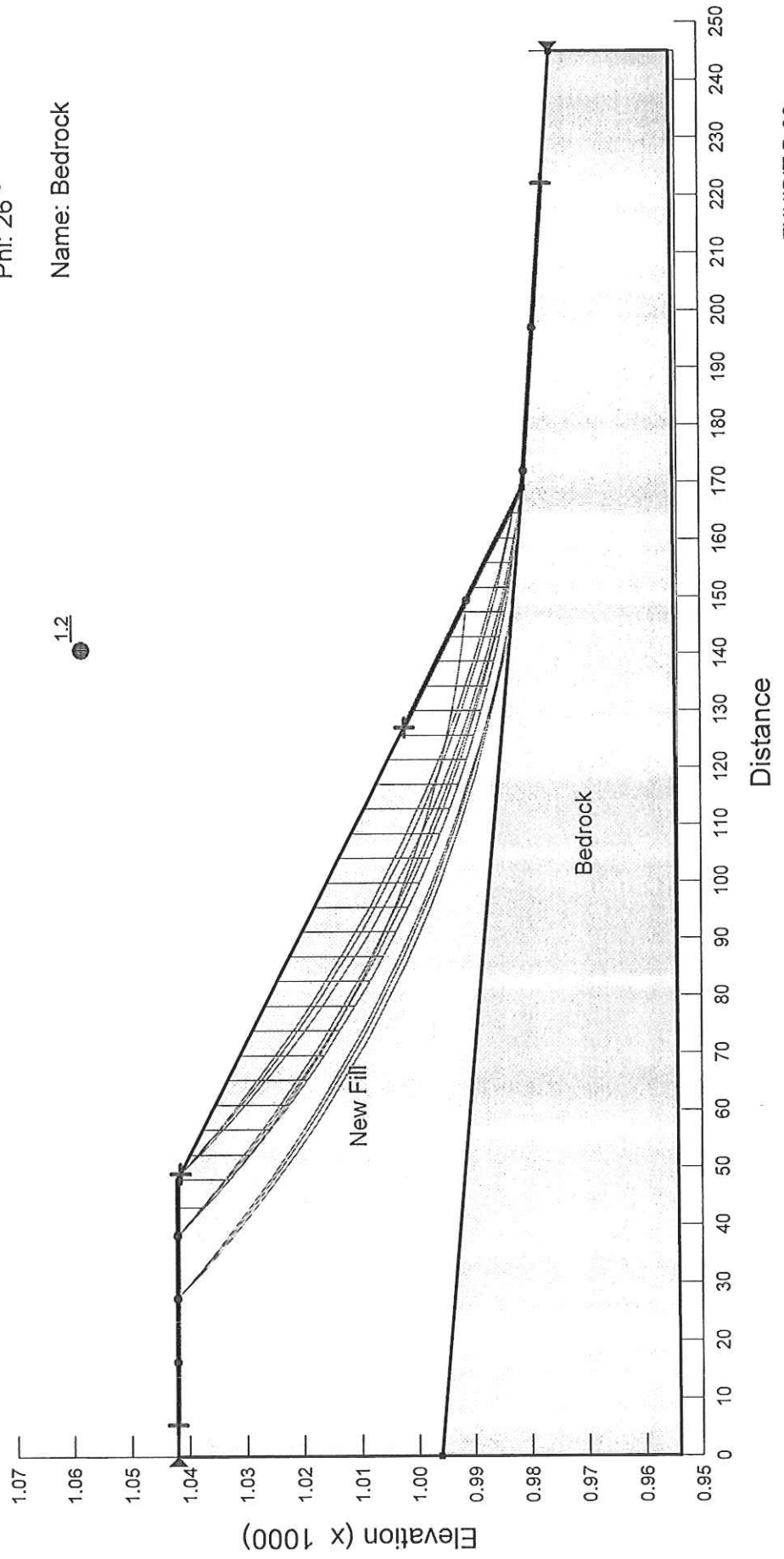
- | | | |
|--|---|--|
| Name: New Fill
Unit Weight: 125 pcf
Cohesion: 100 psf
Phi: 26 ° | Name: Rock fill
Unit Weight: 130 pcf
Cohesion: 0 psf
Phi: 38 ° | Name: Silty clay
Unit Weight: 125 pcf
Cohesion: 0 psf
Phi: 27 ° |
|--|---|--|



Capitol Engineering Hardy County Complex Access Road Section 2 Case: As proposed

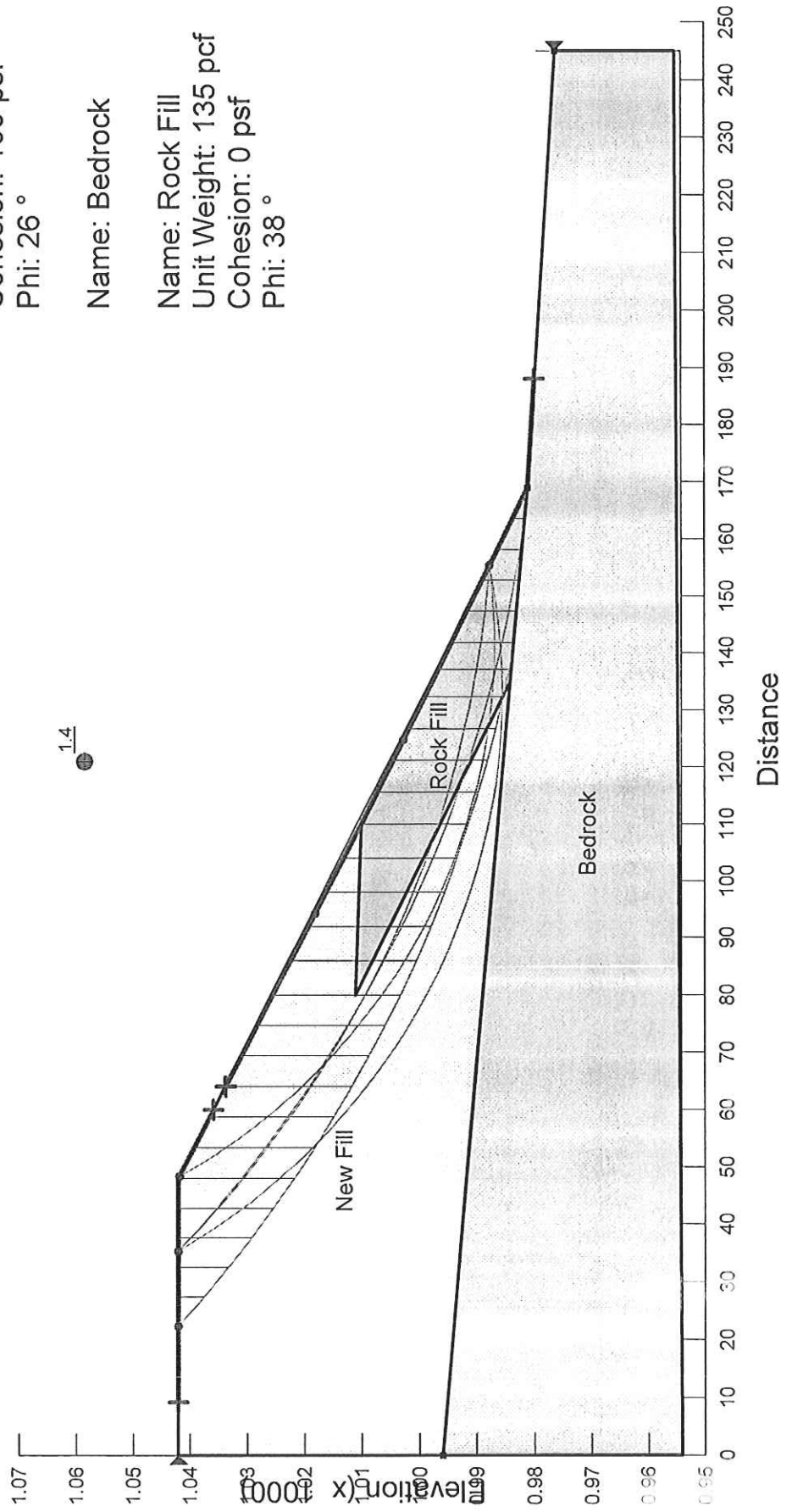
Name: New Fill
Unit Weight: 125 pcf
Cohesion: 100 psf
Phi: 26 °

Name: Bedrock



Capitol Engineering
Hardy County Complex Access Road
Section 2

Case: With 30' wide rock face to 30' below top



Name: New Fill
Unit Weight: 125 pcf
Cohesion: 100 psf
Phi: 26 °

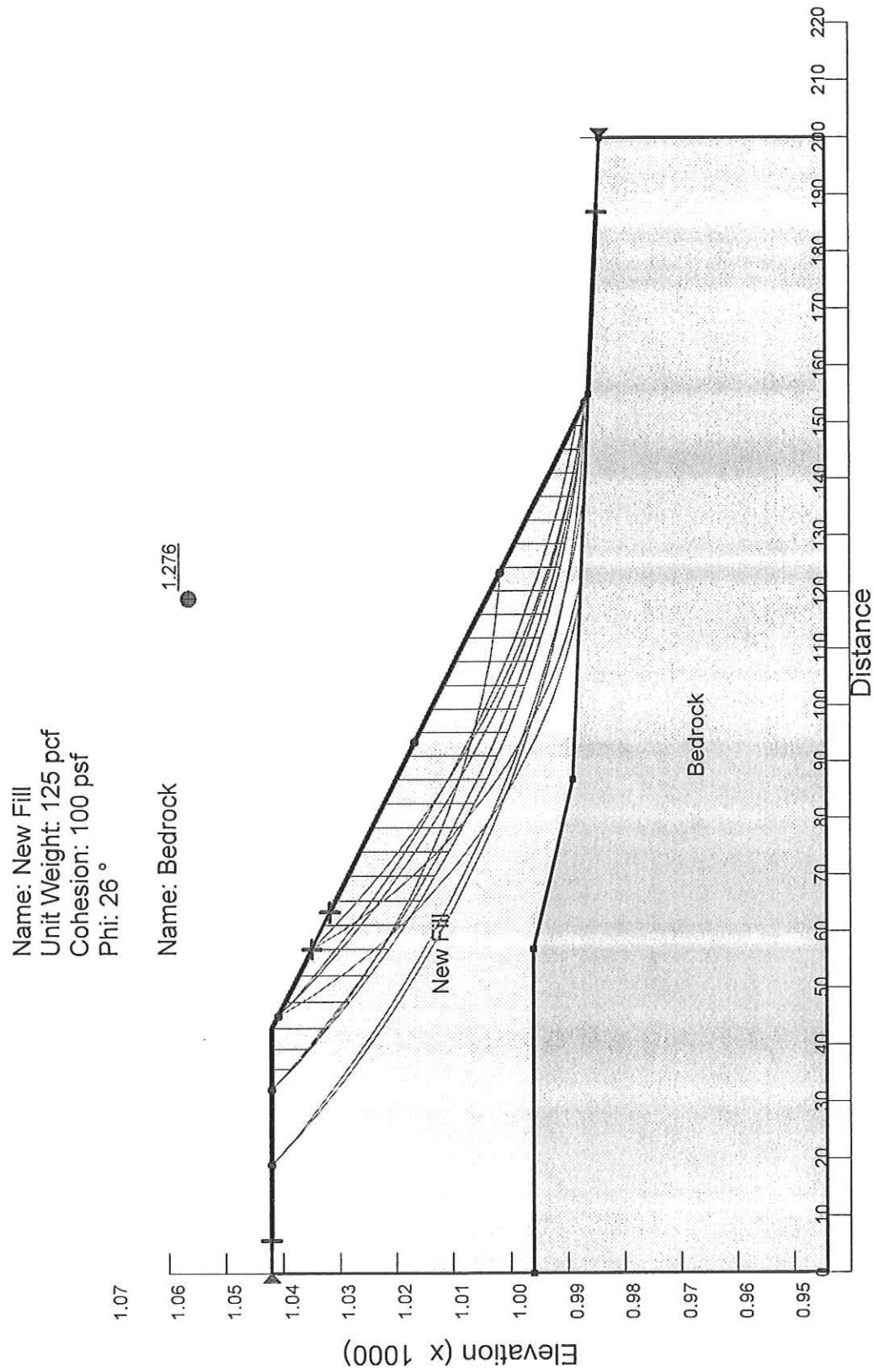
Name: Bedrock

Name: Rock Fill
Unit Weight: 135 pcf
Cohesion: 0 psf
Phi: 38 °

Capitol Engineering - Hardy County Complex Access Road

Section 3

Case: As proposed



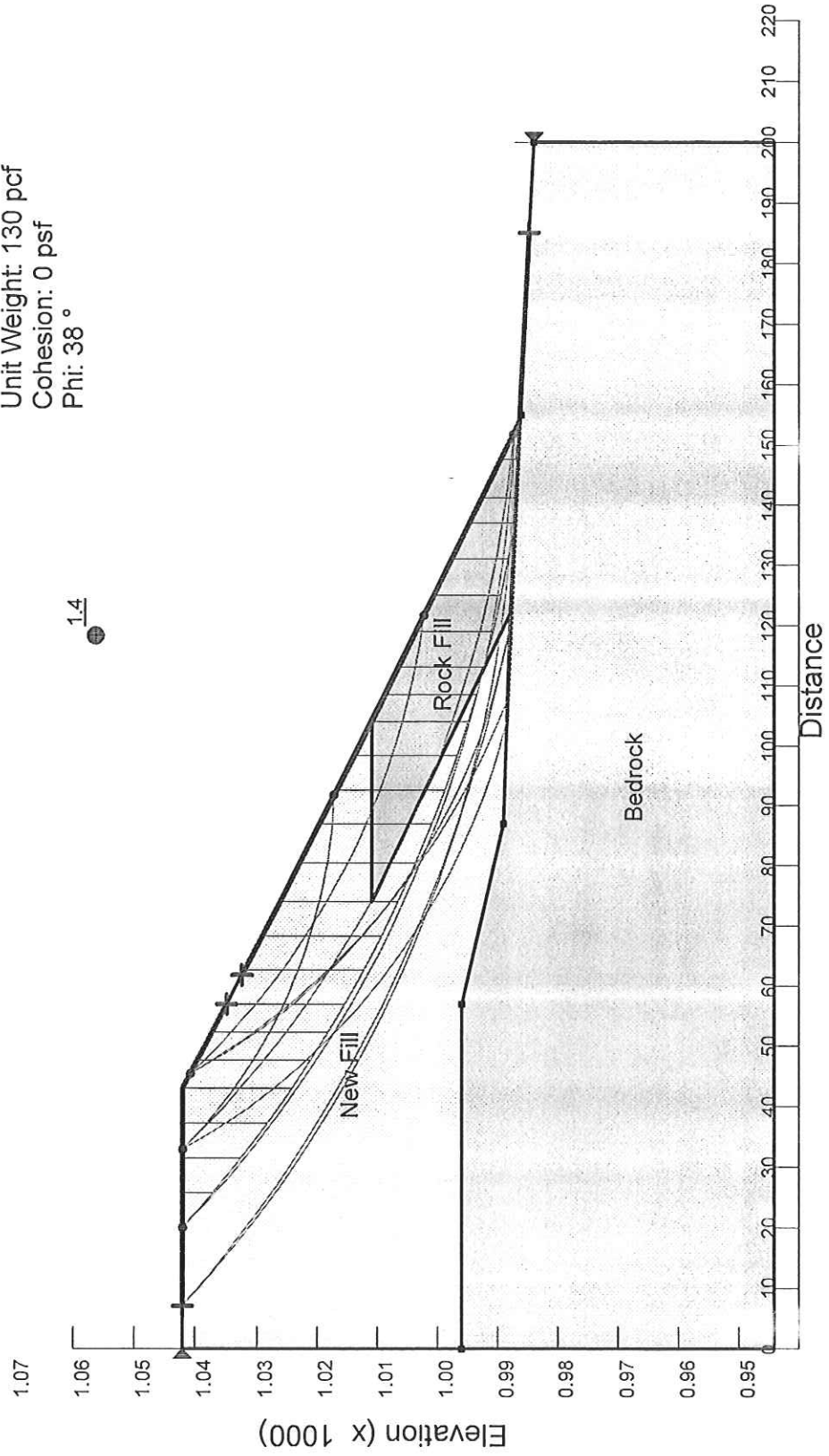
Capitol Engineering - Hardy County Complex Access Road Section 3

Case: With 30 feet rock face to 30 feet below top

Name: New Fill
Unit Weight: 125 pcf
Cohesion: 100 psf
Phi: 26 °

Name: Bedrock

Name: Rock Fill
Unit Weight: 130 pcf
Cohesion: 0 psf
Phi: 38 °



APPENDIX C
SUPPORTING DOCUMENTS

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon - 1- ³ / ₈ " I.D., 2" O.D., unless otherwise noted	HS:	Hollow Stem Auger
ST:	Thin-Walled Tube - 2" O.D., 3" O.D., unless otherwise noted	PA:	Power Auger (Solid Stem)
RS:	Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA:	Hand Auger
DB:	Diamond Bit Coring - 4", N, B	RB:	Rock Bit
BS:	Bulk Sample or Auger Sample	WB:	Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value".

WATER LEVEL MEASUREMENT SYMBOLS:

WL:	Water Level	WS:	While Sampling	BCR:	Before Casing Removal
WCI:	Wet Cave in	WD:	While Drilling	ACR:	After Casing Removal
DCI:	Dry Cave in	AB:	After Boring	N/E:	Not Encountered

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION: Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

CONSISTENCY OF FINE-GRAINED SOILS

<u>Unconfined Compressive Strength, Qu, psf</u>	<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Consistency</u>
< 500	0 - 1	Very Soft
500 - 1,000	2 - 4	Soft
1,000 - 2,000	4 - 8	Medium Stiff
2,000 - 4,000	8 - 15	Stiff
4,000 - 8,000	15 - 30	Very Stiff
8,000+	> 30	Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS

<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Relative Density</u>
0 - 3	Very Loose
4 - 9	Loose
10 - 29	Medium Dense
30 - 50	Dense
> 50	Very Dense

RELATIVE PROPORTIONS OF SAND AND GRAVEL

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 15
With	15 - 29
Modifier	≥ 30

GRAIN SIZE TERMINOLOGY

<u>Major Component of Sample</u>	<u>Particle Size</u>
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75 to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

<u>Term</u>	<u>Plasticity Index</u>
Non-plastic	0
Low	1-10
Medium	11-30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests^A

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification	
					Group Symbol	Group Name ^B
Coarse Grained Soils More than 50% retained on No. 200 sieve S	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E	GW W	ell-graded gravel ^F	
			Cu < 4 and/or 1 > Cc > 3 ^E	GP	Poorly graded gravel ^F	
		Gravels with Fines More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F,G,H}	
			Fines classify as CL or CH	GC	Clayey gravel ^{F,G,H}	
	ands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines ^O	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E	SW W	ell-graded sand ^I	
			Cu < 6 and/or 1 > Cc > 3 ^E	SP	Poorly graded sand ^I	
		Sands with Fines More than 12% fines ^O	Fines classify as ML or MH	SM	Silty sand ^{G,H,I}	
			Fines Classify as CL or CH	SC	Clayey sand ^{G,H,I}	
	Fine-Grained Soils 50% or more passes the No. 200 sieve	Sils and Clays Liquid limit less than 50	inorganic	PI > 7 and plots on or above "A" line ^J	CL Lean	clay ^{K,L,M}
				PI < 4 or plots below "A" line ^J	ML Silt	^{K,L,M}
organic			Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K,L,M,N}
			Liquid limit - not dried			Organic silt ^{K,L,M,O}
Sils and Clays Liquid limit 50 or more		inorganic	PI plots on or above "A" line	CH	Fat clay ^{K,L,M}	
			PI plots below "A" line	MH	Elastic Silt ^{K,L,M}	
		organic	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K,L,M,P}
			Liquid limit - not dried			Organic silt ^{K,L,M,Q}
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat	

^ABased on the material passing the 3-in. (75-mm) sieve

^BIf field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^CGravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^DSands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^FIf soil contains $\geq 15\%$ sand, add "with sand" to group name.

^GIf fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^HIf fines are organic, add "with organic fines" to group name.

^IIf soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^JIf Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^KIf soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^LIf soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

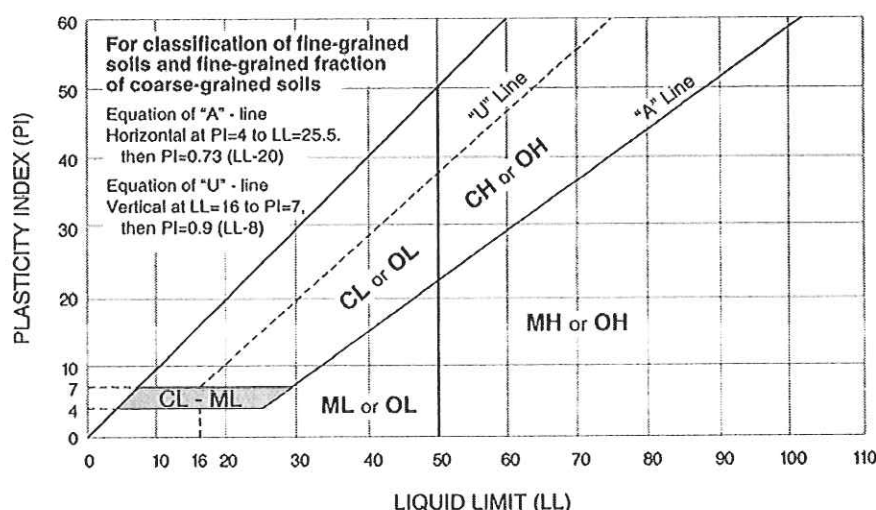
^MIf soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Terracon

EXHIBIT C-2

GENERAL NOTES

Description of Rock Properties

WEATHERING

Fresh	Rock fresh, crystals bright, few joints may show slight staining. Rock rings under hammer if crystalline.
Very slight	Rock generally fresh, joints stained, some joints may show thin clay coatings, crystals in broken face show bright. Rock rings under hammer if crystalline.
Slight	Rock generally fresh, joints stained, and discoloration extends into rock up to 1 in. Joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. Crystalline rocks ring under hammer.
Moderate	Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some show clayey. Rock has dull sound under hammer and shows significant loss of strength as compared with fresh rock.
Moderately severe	All rock except quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and majority show kaolinization. Rock shows severe loss of strength and can be excavated with geologist's pick.
Severe	All rock except quartz discolored or stained. Rock "fabric" clear and evident, but reduced in strength to strong soil. In granitoid rocks, all feldspars kaolinized to some extent. Some fragments of strong rock usually left.
Very severe	All rock except quartz discolored or stained. Rock "fabric" discernible, but mass effectively reduced to "soil" with only fragments of strong rock remaining.
Complete	Rock reduced to "soil". Rock "fabric" not discernible or discernible only in small, scattered locations. Quartz may be present as dikes or stringers.

HARDNESS (for engineering description of rock – not to be confused with Moh's scale for minerals)

Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. Gouges or grooves to ¼ in. deep can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 in. deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1-in. maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1-in. or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.

Joint, Bedding and Foliation Spacing in Rock^a

Spacing		Joints		Bedding/Foliation	
Less than 2 in.		Very close		Very thin	
2 in. – 1 ft.		Close		Thin	
1 ft. – 3 ft.		Moderately close		Medium	
3 ft. – 10 ft.		Wide		Thick	
More than 10 ft.		Very wide		Very thick	
Rock Quality Designator (RQD) ^b			Joint Openness Descriptors		
RQD, as a percentage		Diagnostic description	Openness		Descriptor
Exceeding 90		Excellent	No Visible Separation		Tight
90 – 75		Good	Less than 1/32 in.		Slightly Open
75 – 50		Fair	1/32 to 1/8 in.		Moderately Open
50 – 25		Poor	1/8 to 3/8 in.		Open
Less than 25		Very poor	3/8 in. to 0.1 ft.		Moderately Wide
			Greater than 0.1 ft.		Wide

a. Spacing refers to the distance normal to the planes, of the described feature, which are parallel to each other or nearly so.

b. RQD (given as a percentage) = length of core in pieces 4 in. and longer/length of run.

References: American Society of Civil Engineers. Manuals and Reports on Engineering Practice - No. 56. Subsurface Investigation for Design and Construction of Foundations of Buildings. New York: American Society of Civil Engineers, 1976.
U.S. Department of the Interior, Bureau of Reclamation, Engineering Geology Field Manual.

3. ALL LANDSOWN UTILITIES ARE SHOWN HEREON AS APPROXIMATE LOCATIONS AND ARE BASED ON UTILITY COMPANIES' MAPS, EXISTING STRUCTURE LOCATIONS AND PLANS INFORMATION PROVIDED BY OTHERS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS PRIOR TO CONSTRUCTION.

4. TOPOGRAPHIC SURVEYING CONDUCTED FOR THIS PROJECT WAS PERFORMED BY GEO TECH, INC. OF ROCKFORD, ILL. ON OR ABOUT JANUARY 24, 2007. THE "PROPOSED" DATA SHOWN HEREON WAS PROVIDED BY GEO TECH, INC. ON OR ABOUT JANUARY 24, 2007. THE "EXISTING" DATA SHOWN HEREON WAS PROVIDED BY GEO TECH, INC. ON OR ABOUT JANUARY 24, 2007.

5. PROPERTY LIESING IN A PORTION OF THE S.W. 1/4, T14N, R10E, S12E, FOR THE TOWNSHIP OF WEST VIRGINIA, ADJACENT TO THE TOWNSHIP OF WEST VIRGINIA, COUNTY OF WEST VIRGINIA, IS SHOWN HEREON. THE TOWNSHIP OF WEST VIRGINIA, COUNTY OF WEST VIRGINIA, IS SHOWN HEREON. THE TOWNSHIP OF WEST VIRGINIA, COUNTY OF WEST VIRGINIA, IS SHOWN HEREON.

LAYOUT NOTE KEY

- [illegible]

DOENIC

→ SLOPE INDICATION AS FLOW OR GATE OPENING DIRECTION (FOR REFERENCE ONLY)

C200	SITE LAYOUT	NEW FACILITIES FOR THE MOOREFIELD READINESS CENTER MOOREFIELD, WEST VIRGINIA
		CONSTRUCTION & FACILITIES MANAGEMENT OFFICE WEST VIRGINIA ARMY NATIONAL GUARD

C200

[illegible]

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RECEIVED BY	07-1-13
RECEIVED BY	00-2-11
RECEIVED BY	00-2-10

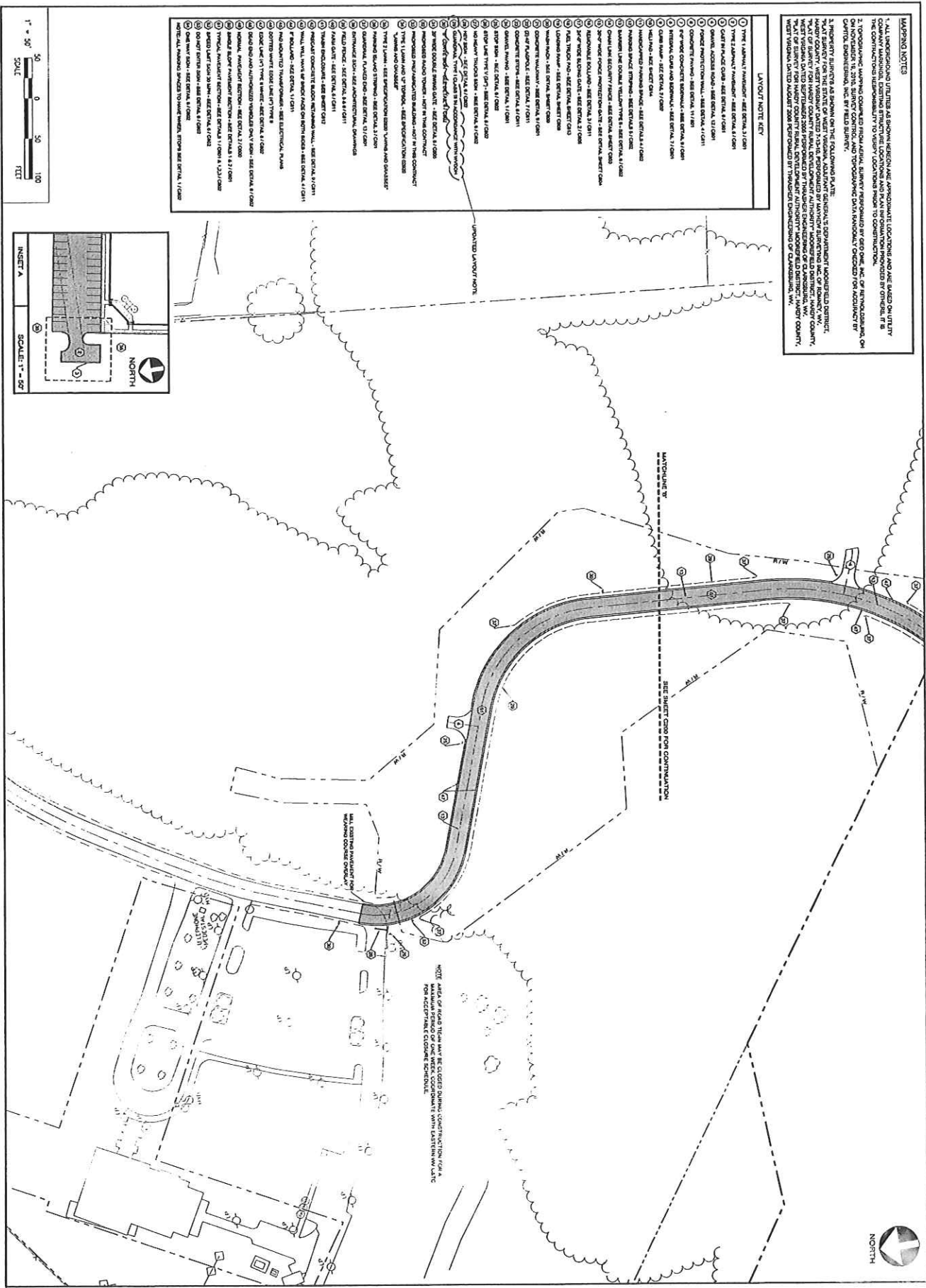
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DATE
02/20/00
BY
J. H. H. H.
CHECKED
J. H. H. H.
APPROVED
J. H. H. H.

PROJECT
NEW FACILITIES FOR THE MOOREFIELD READINESS CENTER
MOOREFIELD, WEST VIRGINIA
CONSTRUCTION & FACILITIES MANAGEMENT OFFICE
WEST VIRGINIA ARMY NATIONAL GUARD

C201
SITE LAYOUT
CONTINUED

[illegible]

PIPE CULVERTS						
LOCATION	SECTION	CORROLATED METAL PIPE			STRUCTURES	REMARKS
STATION	STATION	18"	36"	48"		
D+0+00	D+0+07	50'				
D+0+00	D+0+13		261'	263'		
D+0+00	D+0+26					
D+0+00	D+0+120	452'			ADDITIONAL SOLID 60" PIPE	

SIGNING QUANTITIES									
SIGN NAME	SIGN NUMBER	SHEET NO.	WIDTH	HEIGHT	FLAT SHEET		ROLL SHEET		POST REMOVAL REUSE E. SFTS.
					SQ.	LBS.	SQ.	LBS.	
STOP SIGN	RT-1	C200 & C201	30"	30"		42.5	34.3		
S CURVE	W-1	C201	30"	30"	14.60				
DO NOT ENTER	W-1	C200 & C201	24"	30"	10.00		25.0		
DO NOT ENTER	RS-1	C200 & C201	30"	30"	4.55		12.5	13.0	
STREET NAME	C200	C201	30"	30"	10.00				
STREET NAME	DS-1	C201	24"	18"					
DECEASED PEDESTRIAN	C200	C201	30"	30"	15.00				
DIRECTIONAL ARROW	MA-1	C202	30"	21"	6.75				

RIGHT OF WAY MARKERS			STATION	OFFSET		REMARKS
LEFT	RIGHT					
			144+00	145		
			140+10	140		
			140+20	250		
			140+30	262		
			225+01.70	110		
			225+01.70	97		
			225+01.70	97		
			225+01.10	140		
			225+01.10	200		
			225+01.10	07		
			225+01.00	10		
			04+00.00	20		
			11+00.20	47		
			14+00.00	45		
			14+00.00	20		
			20+00.00	10		
			21+00.00	27		
			22+00.14	132		
			22+00.71	132		
			22+00.71	132		
			22+00.71	30		
			22+00.71	30		
			27+00.00	27		
			27+00.00	220		
			30+00.00	130		
			30+00.00	05		
			30+00.00	05		
			30+00.00	122		
			31+00.00	210		
			31+00.00	200		
			31+00.00	200		
			31+00.00	200		
			31+00.00	130		
			31+00.00	130		
			32+00.00	97		
			32+00.00	22		
			32+00.00	22		

Capital Engineering, Inc.
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addition, construction of all telecommunications facilities, except those for cellular mobile radio, must be subject to a public hearing and notice of the hearing must be published in a newspaper of general circulation in the community in which the facilities are to be located. The notice must be published at least 15 days before the hearing. The hearing must be held at a public place, such as a city hall or library, and must be open to the public. The hearing must be held at a time and place convenient to the public. The hearing must be held at a time and place convenient to the public. The hearing must be held at a time and place convenient to the public.

NEW FACILITIES FOR THE
MOOREFIELD READINESS CENTER
MOOREFIELD, WEST VIRGINIA
CONSTRUCTION & FACILITIES MANAGEMENT OFFICE
WEST VIRGINIA ARMY NATIONAL GUARD

C205

BEFORE	ON	END
15-42.0	15-42.0	16-12.0
17-42.0	17-27.0	17-39.0
20-40.2	21-16.2	21-40.2
25-44.7	26-17.7	26-46.7
27-50.0	27-18.0	28-46.0

NOTE: TRANSITION AT 0.1' PER 100 FEET

FORMS HAVING STRUCTURAL SCHEME (BASED ON ONLY 1)				
Sl. No.	MODEL	INVENTOR	INVENTOR	INVENTOR
1	1041	1042	1043	1044
2	1045	1046	1047	1048
3	1049	1050	1051	1052
4	1053	1054	1055	1056
5	1058	1059	1060	1061
6	1063	1064	1065	1066
7	1068	1069	1070	1071
8	1073	1074	1075	1076
9	1078	1079	1080	1081
10	1083	1084	1085	1086
11	1088	1089	1090	1091
12	1093	1094	1095	1096
13	1098	1099	1100	1101
14	1103	1104	1105	1106
15	1108	1109	1110	1111
16	1113	1114	1115	1116
17	1118	1119	1120	1121
18	1123	1124	1125	1126
19	1128	1129	1130	1131
20	1133	1134	1135	1136
21	1138	1139	1140	1141
22	1143	1144	1145	1146
23	1148	1149	1150	1151
24	1153	1154	1155	1156
25	1158	1159	1160	1161
26	1163	1164	1165	1166
27	1168	1169	1170	1171
28	1173	1174	1175	1176
29	1178	1179	1180	1181
30	1183	1184	1185	1186
31	1188	1189	1190	1191
32	1193	1194	1195	1196
33	1198	1199	1200	1201
34	1203	1204	1205	1206
35	1208	1209	1210	1211
36	1213	1214	1215	1216
37	1218	1219	1220	1221
38	1223	1224	1225	1226
39	1228	1229	1230	1231
40	1233	1234	1235	1236
41	1238	1239	1240	1241
42	1243	1244	1245	1246
43	1248	1249	1250	1251
44	1253	1254	1255	1256
45	1258	1259	1260	1261
46	1263	1264	1265	1266
47	1268	1269	1270	1271
48	1273	1274	1275	1276
49	1278	1279	1280	1281
50	1283	1284	1285	1286
51	1288	1289	1290	1291
52	1293	1294	1295	1296
53	1298	1299	1300	1301
54	1303	1304	1305	1306
55	1308	1309	1310	1311
56	1313	1314	1315	1316
57	1318	1319	1320	1321
58	1323	1324	1325	1326
59	1328	1329	1330	1331
60	1333	1334	1335	1336
61	1338	1339	1340	1341
62	1343	1344	1345	1346
63	1348	1349	1350	1351
64	1353	1354	1355	1356
65	1358	1359	1360	1361
66	1363	1364	1365	1366
67	1368	1369	1370	1371
68	1373	1374	1375	1376
69	1378	1379	1380	1381
70	1383	1384	1385	1386
71	1388	1389	1390	1391
72	1393	1394	1395	1396
73	1398	1399	1400	1401
74	1403	1404	1405	1406
75	1408	1409	1410	1411
76	1413	1414	1415	1416
77	1418	1419	1420	1421
78	1423	1424	1425	1426
79	1428	1429	1430	1431
80	1433	1434	1435	1436
81	1438	1439	1440	1441
82	1443	1444	1445	1446
83	1448	1449	1450	1451
84	1453	1454	1455	1456
85	1458	1459	1460	1461
86	1463	1464	1465	1466
87	1468	1469	1470	1471
88	1473	1474	1475	1476
89	1478	1479	1480	1481
90	1483	1484	1485	1486
91	1488	1489	1490	1491
92	1493	1494	1495	1496
93	1498	1499	1500	1501
94	1503	1504	1505	1506
95	1508	1509	1510	1511
96	1513	1514	1515	1516
97	1518	1519	1520	1521
98	1523	1524	1525	1526
99	1528	1529	1530	1531
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112	1593	1594	1595	1596
113	1598	1599	1600	1601
114	1603	1604	1605	1606
115	1608	1609	1610	1611
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131	1688	1689	1690	1691
132	1693	1694	1695	1696
133	1698	1699	1700	1701
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135	1708	1709	1710	1711
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144	1753	1754	1755	1756
145	1758	1759	1760	1761
146	1763	1764	1765	1766
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259	2328	2329	2330</	

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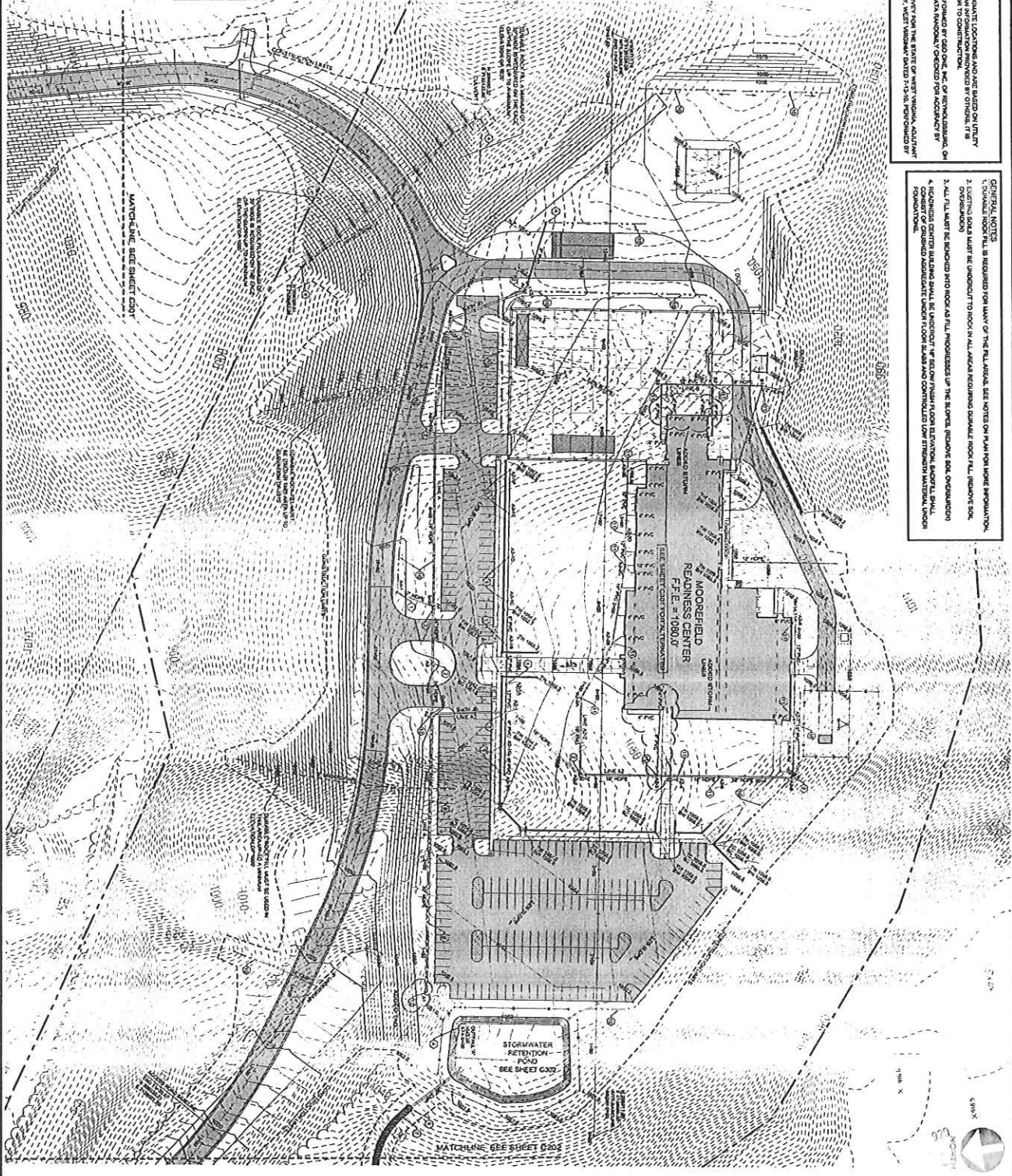
→ SLOPE INDICATION ARROW ON GATE OPENING
DIRECTION (FOR REFERENCE ONLY)

17. TRUE OR FALSE
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GENERAL NOTES:

1. CRITICAL NOTES ARE REQUIRED FOR MANY OF THE ITEMS. SEE NOTES ON PLAN FOR MORE INFORMATION.
2. EXISTING DATA MUST BE UNOBTAIN TO ROCK IN ALL AREAS REQUIRING DRAINAGE, ROCK PILE, REMOVAL, ETC.
3. ALL PILE CAPS MUST BE REINFORCED WITH ROCK AND PILE PROCEEDS UP THE SLOPE, BEHIND ROCK OVERLAPMENT
4. REINFORCED CONCRETE BULKHEAD WALLS ARE UNOBTAIN IN SLOPE PILES IN SLOPE, BEHIND ROCK OVERLAPMENT, BRILL, CONCRETE OF CONCRETE REINFORCED UNDER FLOOR SLABS AND CONTROLLING LOW FLOODING MATERIAL UNDER FLOOR SLABS.



	B&H B&H Building & Hardware 3800 Augustine Street, Richmond, VA 23220 FAX (804) 246-3187	CEI Capital Equipment, Inc. 200 Lumbard Rd E. Clarksburg, WV 26302		<p> Name: Mr. J. Edgar Title: General Manager Phone: (304) 725-1111 Fax: (304) 725-1111 Address: P.O. Box 1111 City: Martinsburg, WV 26155 </p>		<p> Name: Mr. J. Edgar Title: General Manager Phone: (304) 725-1111 Fax: (304) 725-1111 Address: P.O. Box 1111 City: Martinsburg, WV 26155 </p>	<p> NEW FACILITIES FOR THE MOOREFIELD READINESS CENTER MOOREFIELD, WEST VIRGINIA CONSTRUCTION & FACILITIES MANAGEMENT OFFICE WEST VIRGINIA ARMY NATIONAL GUARD </p>	<p>C300</p>	<p>GRAVING AND DRAINAGE PLAN</p>
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MAPPING NOTES

1. ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE LOCATIONS AND ARE BASED ON UTILITY COMPANY RECORDS. EXISTING STRUCTURE LOCATIONS AND PLANS WERE OBTAINED FROM THE CITY OF WEST VIRGINIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
2. TOPOGRAHY WAS OBTAINED FROM THE WEST VIRGINIA STATE DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION. THE DATA WAS OBTAINED FROM THE WEST VIRGINIA STATE DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION. THE DATA WAS OBTAINED FROM THE WEST VIRGINIA STATE DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION.
3. PROPERTY SURVEY AS SHOWN ON THE PLAT TITLED "PLAT SURVEY FOR THE STATE OF WEST VIRGINIA, ADJUTANT GENERAL'S DEPARTMENT, MOOREFIELD CENTER, WEST VIRGINIA, DATED 11-18-1998, PROVIDED BY THE WEST VIRGINIA STATE DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION."

GENERAL NOTES

1. EXISTING ROCK FILL IS REQUIRED FOR ALL OF THE FILL AREAS. SEE NOTES ON PLANS FOR MORE INFORMATION.
2. EXISTING SOIL MUST BE REMOVED TO ROCK IN ALL AREAS REQUIRING CORRELATE ROCK FILL. EXISTING SOIL MUST NOT BE REUSED FOR ANY OTHER PURPOSE.
3. ALL FILL MUST BE COMPACTED WITH ROCK AS FILL. PROVIDE 15% OVERSIGHT FOR ALL FILL AREAS.
4. EXISTING CONCRETE FOUNDATION SHALL BE REMOVED AND REPLACED WITH NEW CONCRETE FOUNDATION. THE NEW FOUNDATION SHALL BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE DESIGNED TO SUPPORT THE NEW STRUCTURE.

- GRADING NOTES**
1. TYPE 1 GRASS
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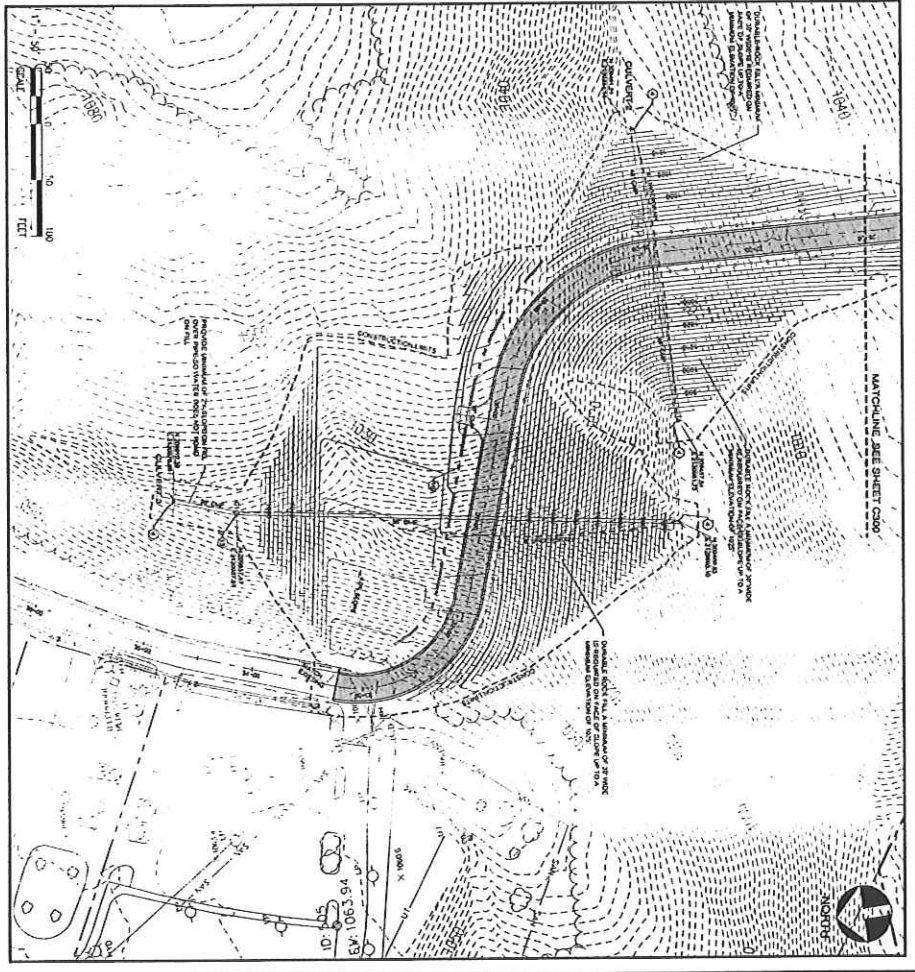
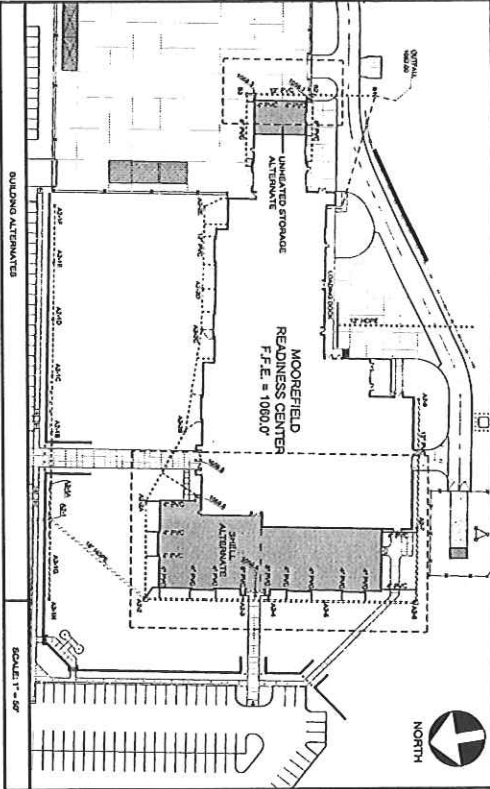
LEGEND

→ SEE NOTES FOR MORE INFORMATION

STORMWATER STRUCTURE SCHEDULE

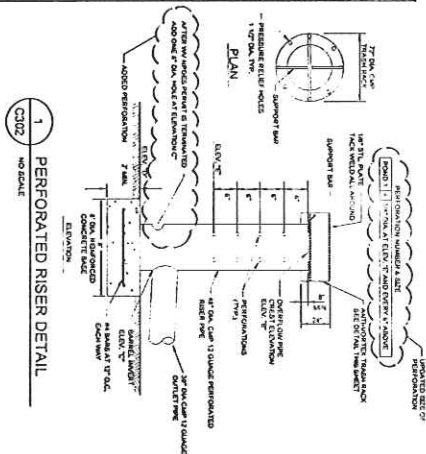
NO.	DESCRIPTION	INVERT	INVERT	INVERT	INVERT
1	18" DIA. MANHOLE	10.00	10.00	10.00	10.00
2	24" DIA. MANHOLE	10.00	10.00	10.00	10.00
3	30" DIA. MANHOLE	10.00	10.00	10.00	10.00
4	36" DIA. MANHOLE	10.00	10.00	10.00	10.00
5	42" DIA. MANHOLE	10.00	10.00	10.00	10.00
6	48" DIA. MANHOLE	10.00	10.00	10.00	10.00
7	54" DIA. MANHOLE	10.00	10.00	10.00	10.00
8	60" DIA. MANHOLE	10.00	10.00	10.00	10.00
9	66" DIA. MANHOLE	10.00	10.00	10.00	10.00
10	72" DIA. MANHOLE	10.00	10.00	10.00	10.00
11	78" DIA. MANHOLE	10.00	10.00	10.00	10.00
12	84" DIA. MANHOLE	10.00	10.00	10.00	10.00
13	90" DIA. MANHOLE	10.00	10.00	10.00	10.00
14	96" DIA. MANHOLE	10.00	10.00	10.00	10.00
15	102" DIA. MANHOLE	10.00	10.00	10.00	10.00
16	108" DIA. MANHOLE	10.00	10.00	10.00	10.00
17	114" DIA. MANHOLE	10.00	10.00	10.00	10.00
18	120" DIA. MANHOLE	10.00	10.00	10.00	10.00
19	126" DIA. MANHOLE	10.00	10.00	10.00	10.00
20	132" DIA. MANHOLE	10.00	10.00	10.00	10.00
21	138" DIA. MANHOLE	10.00	10.00	10.00	10.00
22	144" DIA. MANHOLE	10.00	10.00	10.00	10.00
23	150" DIA. MANHOLE	10.00	10.00	10.00	10.00
24	156" DIA. MANHOLE	10.00	10.00	10.00	10.00
25	162" DIA. MANHOLE	10.00	10.00	10.00	10.00
26	168" DIA. MANHOLE	10.00	10.00	10.00	10.00
27	174" DIA. MANHOLE	10.00	10.00	10.00	10.00
28	180" DIA. MANHOLE	10.00	10.00	10.00	10.00
29	186" DIA. MANHOLE	10.00	10.00	10.00	10.00
30	192" DIA. MANHOLE	10.00	10.00	10.00	10.00
31	198" DIA. MANHOLE	10.00	10.00	10.00	10.00
32	204" DIA. MANHOLE	10.00	10.00	10.00	10.00
33	210" DIA. MANHOLE	10.00	10.00	10.00	10.00
34	216" DIA. MANHOLE	10.00	10.00	10.00	10.00
35	222" DIA. MANHOLE	10.00	10.00	10.00	10.00
36	228" DIA. MANHOLE	10.00	10.00	10.00	10.00
37	234" DIA. MANHOLE	10.00	10.00	10.00	10.00
38	240" DIA. MANHOLE	10.00	10.00	10.00	10.00
39	246" DIA. MANHOLE	10.00	10.00	10.00	10.00
40	252" DIA. MANHOLE	10.00	10.00	10.00	10.00
41	258" DIA. MANHOLE	10.00	10.00	10.00	10.00
42	264" DIA. MANHOLE	10.00	10.00	10.00	10.00
43	270" DIA. MANHOLE	10.00	10.00	10.00	10.00
44	276" DIA. MANHOLE	10.00	10.00	10.00	10.00
45	282" DIA. MANHOLE	10.00	10.00	10.00	10.00
46	288" DIA. MANHOLE	10.00	10.00	10.00	10.00
47	294" DIA. MANHOLE	10.00	10.00	10.00	10.00
48	300" DIA. MANHOLE	10.00	10.00	10.00	10.00
49	306" DIA. MANHOLE	10.00	10.00	10.00	10.00
50	312" DIA. MANHOLE	10.00	10.00	10.00	10.00
51	318" DIA. MANHOLE	10.00	10.00	10.00	10.00
52	324" DIA. MANHOLE	10.00	10.00	10.00	10.00
53	330" DIA. MANHOLE	10.00	10.00	10.00	10.00
54	336" DIA. MANHOLE	10.00	10.00	10.00	10.00
55	342" DIA. MANHOLE	10.00	10.00	10.00	10.00
56	348" DIA. MANHOLE	10.00	10.00	10.00	10.00
57	354" DIA. MANHOLE	10.00	10.00	10.00	10.00
58	360" DIA. MANHOLE	10.00	10.00	10.00	10.00
59	366" DIA. MANHOLE	10.00	10.00	10.00	10.00
60	372" DIA. MANHOLE	10.00	10.00	10.00	10.00
61	378" DIA. MANHOLE	10.00	10.00	10.00	10.00
62	384" DIA. MANHOLE	10.00	10.00	10.00	10.00
63	390" DIA. MANHOLE	10.00	10.00	10.00	10.00
64	396" DIA. MANHOLE	10.00	10.00	10.00	10.00
65	402" DIA. MANHOLE	10.00	10.00	10.00	10.00
66	408" DIA. MANHOLE	10.00	10.00	10.00	10.00
67	414" DIA. MANHOLE	10.00	10.00	10.00	10.00
68	420" DIA. MANHOLE	10.00	10.00	10.00	10.00
69	426" DIA. MANHOLE	10.00	10.00	10.00	10.00
70	432" DIA. MANHOLE	10.00	10.00	10.00	10.00
71	438" DIA. MANHOLE	10.00	10.00	10.00	10.00
72	444" DIA. MANHOLE	10.00	10.00	10.00	10.00
73	450" DIA. MANHOLE	10.00	10.00	10.00	10.00
74	456" DIA. MANHOLE	10.00	10.00	10.00	10.00
75	462" DIA. MANHOLE	10.00	10.00	10.00	10.00
76	468" DIA. MANHOLE	10.00	10.00	10.00	10.00
77	474" DIA. MANHOLE	10.00	10.00	10.00	10.00
78	480" DIA. MANHOLE	10.00	10.00	10.00	10.00
79	486" DIA. MANHOLE	10.00	10.00	10.00	10.00
80	492" DIA. MANHOLE	10.00	10.00	10.00	10.00
81	498" DIA. MANHOLE	10.00	10.00	10.00	10.00
82	504" DIA. MANHOLE	10.00	10.00	10.00	10.00
83	510" DIA. MANHOLE	10.00	10.00	10.00	10.00
84	516" DIA. MANHOLE	10.00	10.00	10.00	10.00
85	522" DIA. MANHOLE	10.00	10.00	10.00	10.00
86	528" DIA. MANHOLE	10.00	10.00	10.00	10.00
87	534" DIA. MANHOLE	10.00	10.00	10.00	10.00
88	540" DIA. MANHOLE	10.00	10.00	10.00	10.00
89	546" DIA. MANHOLE	10.00	10.00	10.00	10.00
90	552" DIA. MANHOLE	10.00	10.00	10.00	10.00
91	558" DIA. MANHOLE	10.00	10.00	10.00	10.00
92	564" DIA. MANHOLE	10.00	10.00	10.00	10.00
93	570" DIA. MANHOLE	10.00	10.00	10.00	10.00
94	576" DIA. MANHOLE	10.00	10.00	10.00	10.00
95	582" DIA. MANHOLE	10.00	10.00	10.00	10.00
96	588" DIA. MANHOLE	10.00	10.00	10.00	10.00
97	594" DIA. MANHOLE	10.00	10.00	10.00	10.00
98	600" DIA. MANHOLE	10.00	10.00	10.00	10.00
99	606" DIA. MANHOLE	10.00	10.00	10.00	10.00
100	612" DIA. MANHOLE	10.00	10.00	10.00	10.00

ADDED STORMWATER STRUCTURE SCHEDULE

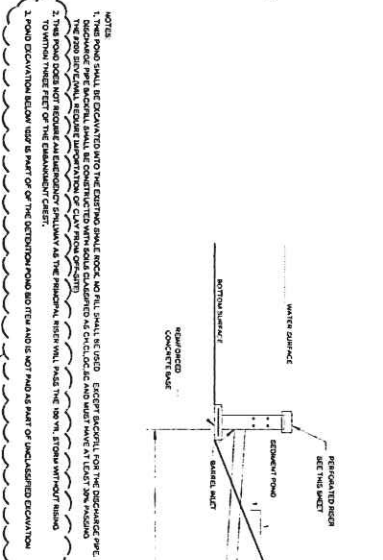


STORMWATER STRUCTURE SCHEDULE (BASE BID)					
NO.	MANHOLE	INVERT IN	INVERT IN	INVERT OUT	
28	18" DIA.	10.01	10.01	10.01	10.01

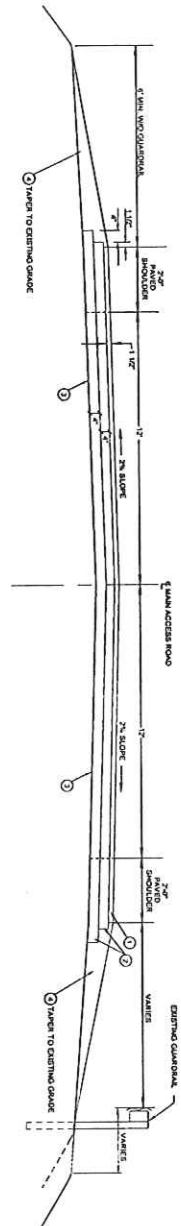
* STORE ANY ETC. ITEMS NOT SELECTED ON COMPLETE BILL



2 ANTI-VORTEX TRASH RACK
C302 NOT TO SCALE

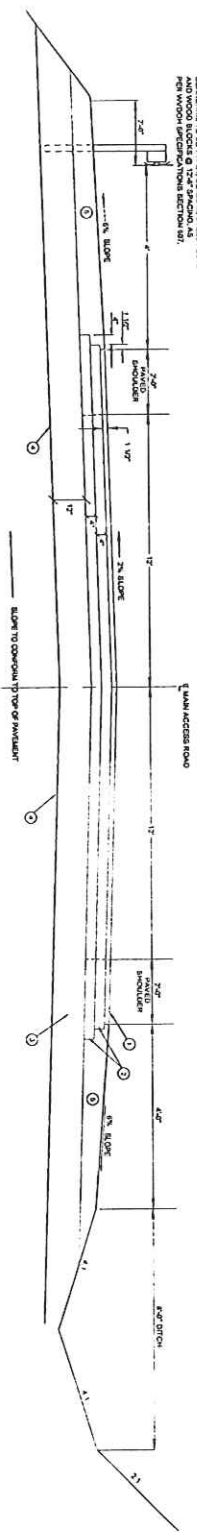


DETENTION POND CHART					
DESCRIPTION	ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. F
POND #1	1071.0	1067.0	1041.0	1048.0	1032.0
					25 YEAR ELEVATION
					1041.00



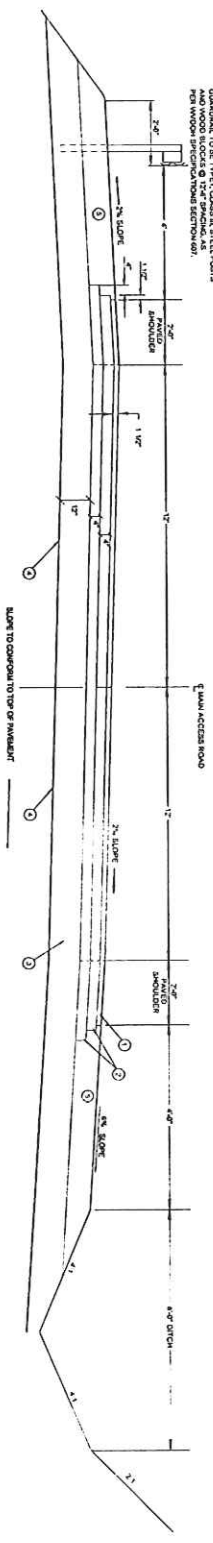
- DESCRIPTION
- ① FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ② FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ③ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
 - ④ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
- REFERENCE WHICH SPECIFICATIONS 318

1 0+00 TO 9+00 NORMAL SECTION
C600 N.E.



- DESCRIPTION
- ① FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ② FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ③ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
 - ④ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
- REFERENCE WHICH SPECIFICATIONS 318

2 9+00 - 21+50 NORMAL SECTION
C600 N.E.



- DESCRIPTION
- ① FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ② FILL 4250-4400 MARSHALL NOT AS ASPHALT AND RESISTANT PAVEMENT. MEDIAN PER TON
 - ③ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
 - ④ FILL 3750-3800 ADHESIVE BASE COURSE. CLAS 16 PER TON
- REFERENCE WHICH SPECIFICATIONS 318

3 9+00 - 21+50 CURVE RIGHT SECTION
C600 N.E.

UPDATED TYPICAL SECTIONS

ROADWAY
TYPICAL
SECTIONS

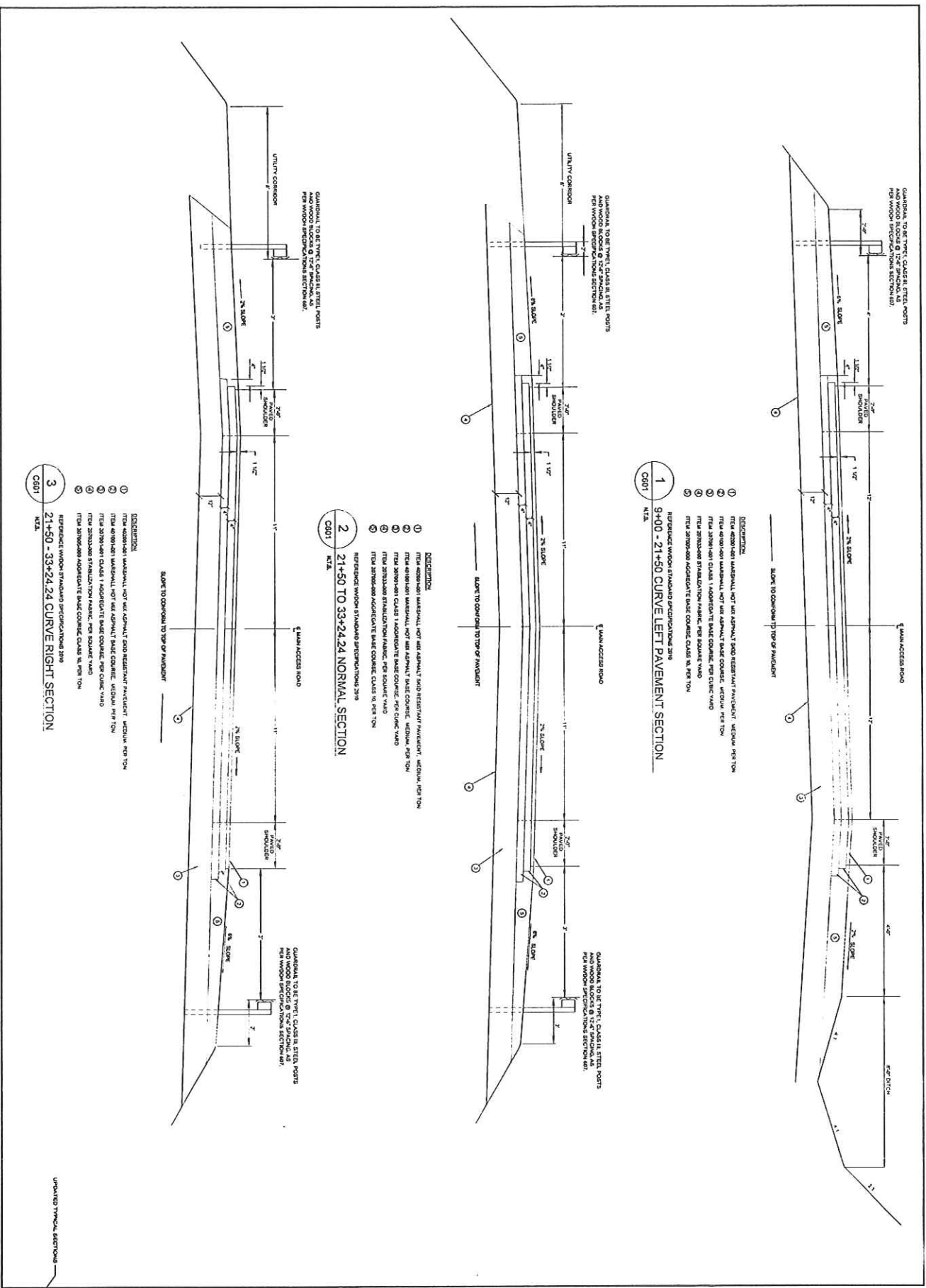
NEW FACILITIES FOR THE
MOOREFIELD READINESS CENTER
MOOREFIELD, WEST VIRGINIA
CONSTRUCTION & FACILITIES MANAGEMENT OFFICE
WEST VIRGINIA ARMY NATIONAL GUARD

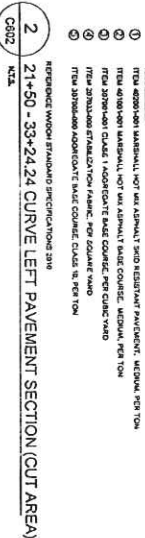
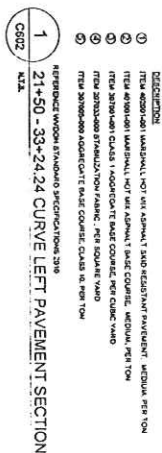
Barton & Harris
ARCHITECTS
1000 10th St. NW
Washington, DC 20004
(202) 462-1000
Fax: (202) 462-1001

CEI
Construction Engineering Inc.
1000 10th St. NW
Washington, DC 20004
(202) 462-1000
Fax: (202) 462-1001

CMA
Construction Management Associates
1000 10th St. NW
Washington, DC 20004
(202) 462-1000
Fax: (202) 462-1001

Seal of the West Virginia Army National Guard





C602 ROADWAY SECTIONS	NEW FACILITIES FOR THE MOOREFIELD READINESS CENTER MOOREFIELD, WEST VIRGINIA CONSTRUCTION & FACILITIES MANAGEMENT OFFICE WEST VIRGINIA ARMY NATIONAL GUARD
	(Empty cell)

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Page 10 00260

07-01-08

1

100% Satisfaction Guarantee

10

Dau/Heide, 17.00K

1706 Lincoln Blvd E
S. 10th Ave. Apt. 101

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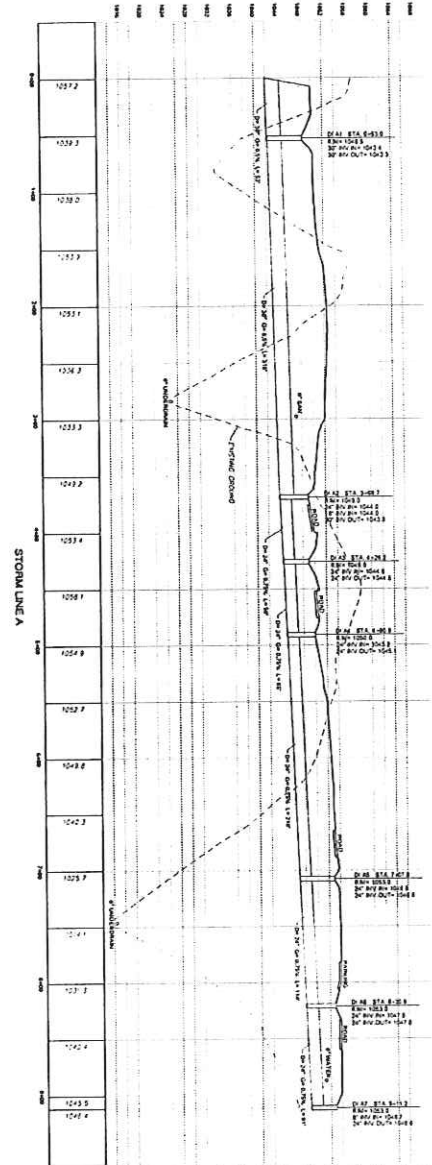
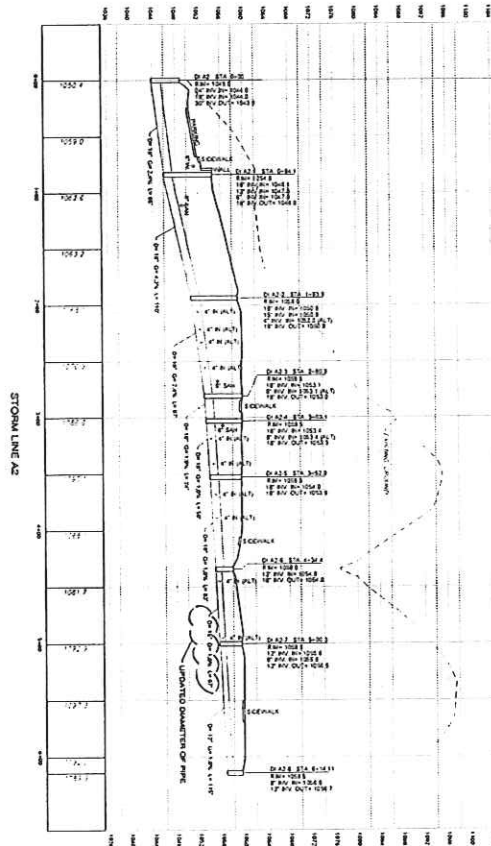
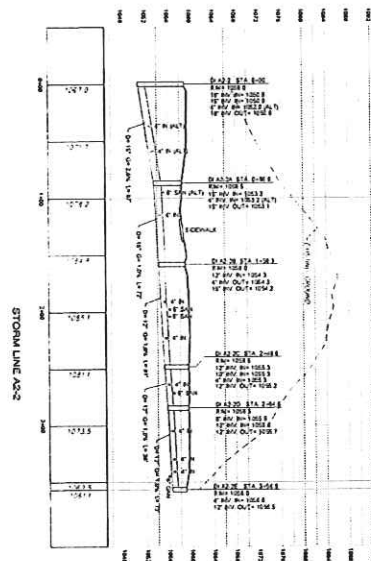
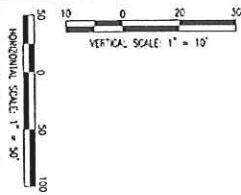
FAX (304) 342-2157

300 Bonanza Blvd
Suite 1200

DESIGN & BUILD

1

E



C700

STORM
PROFILES

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MOOREFIELD READINESS CENTER
MOOREFIELD, WEST VIRGINIA
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WEST VIRGINIA ARMY NATIONAL GUARD

DATE: 11/11/11

BY: [Signature]

11/11/11

11/11/11

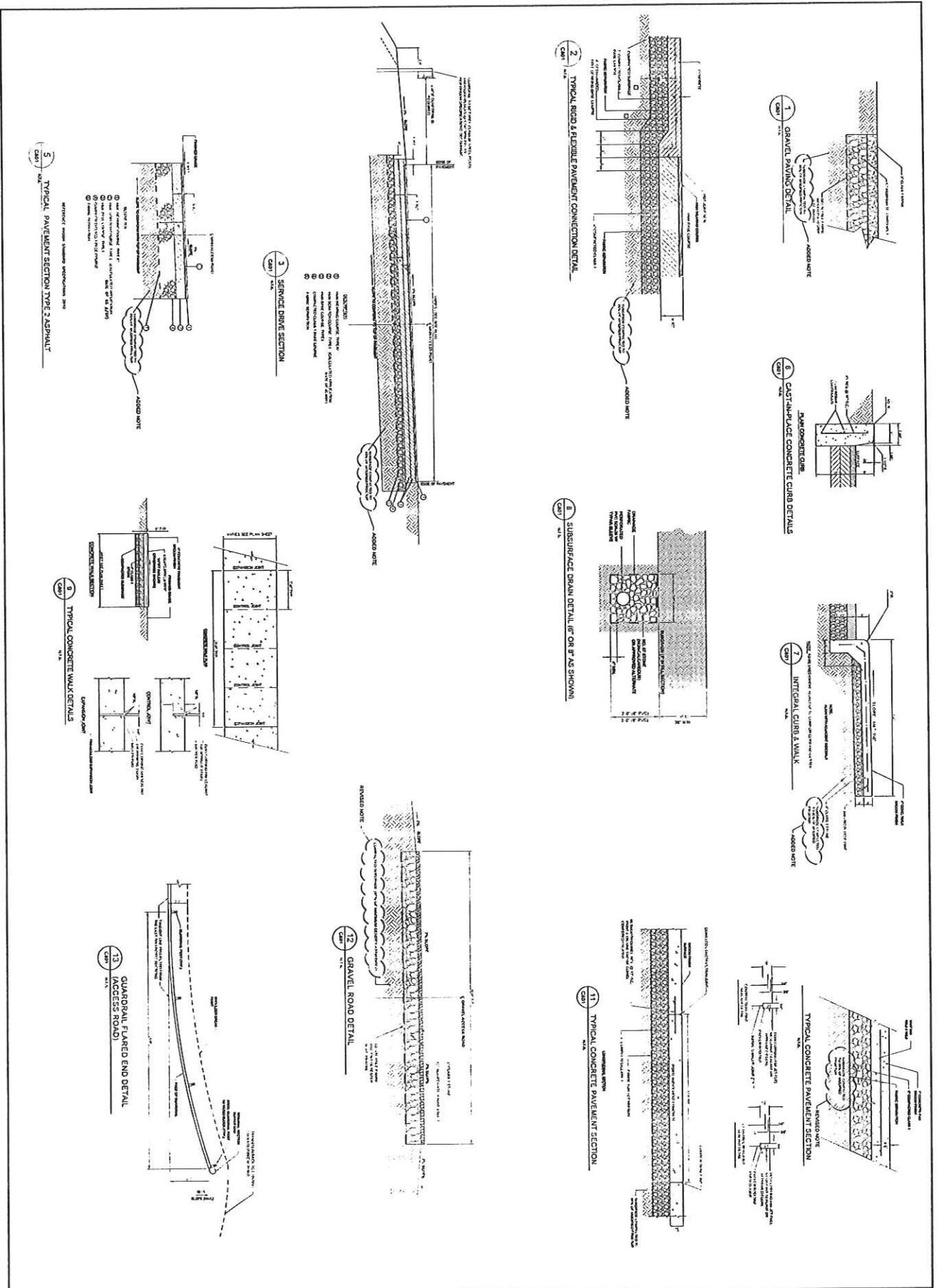
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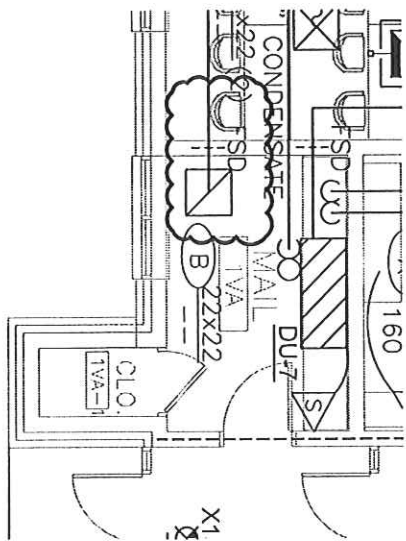
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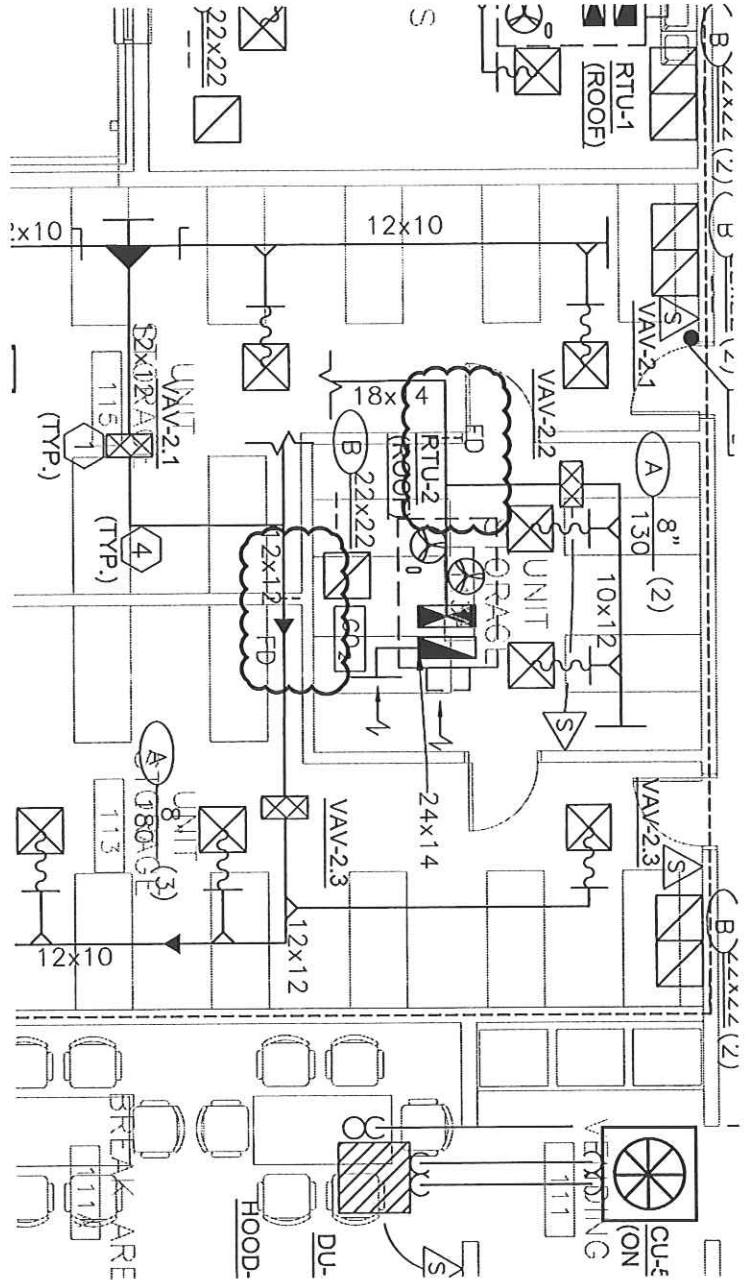
MAIL ROOM PART PLAN

SCALE: 1/8" = 1'-0"



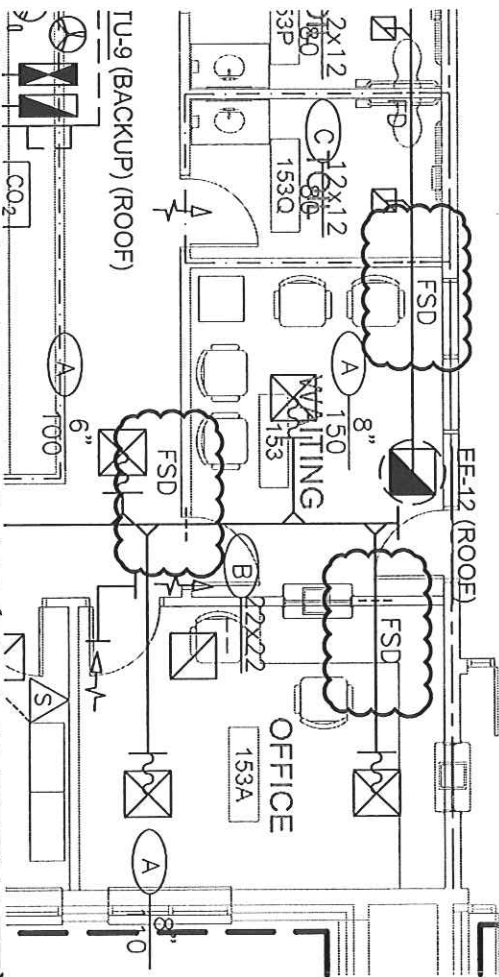
UNIT STORAGE PART PLAN

SCALE: 1/8" = 1'-0"



WAITING ROOM PART PLAN (PER ALTERNATE)

SCALE: 1/8" = 1'-0"



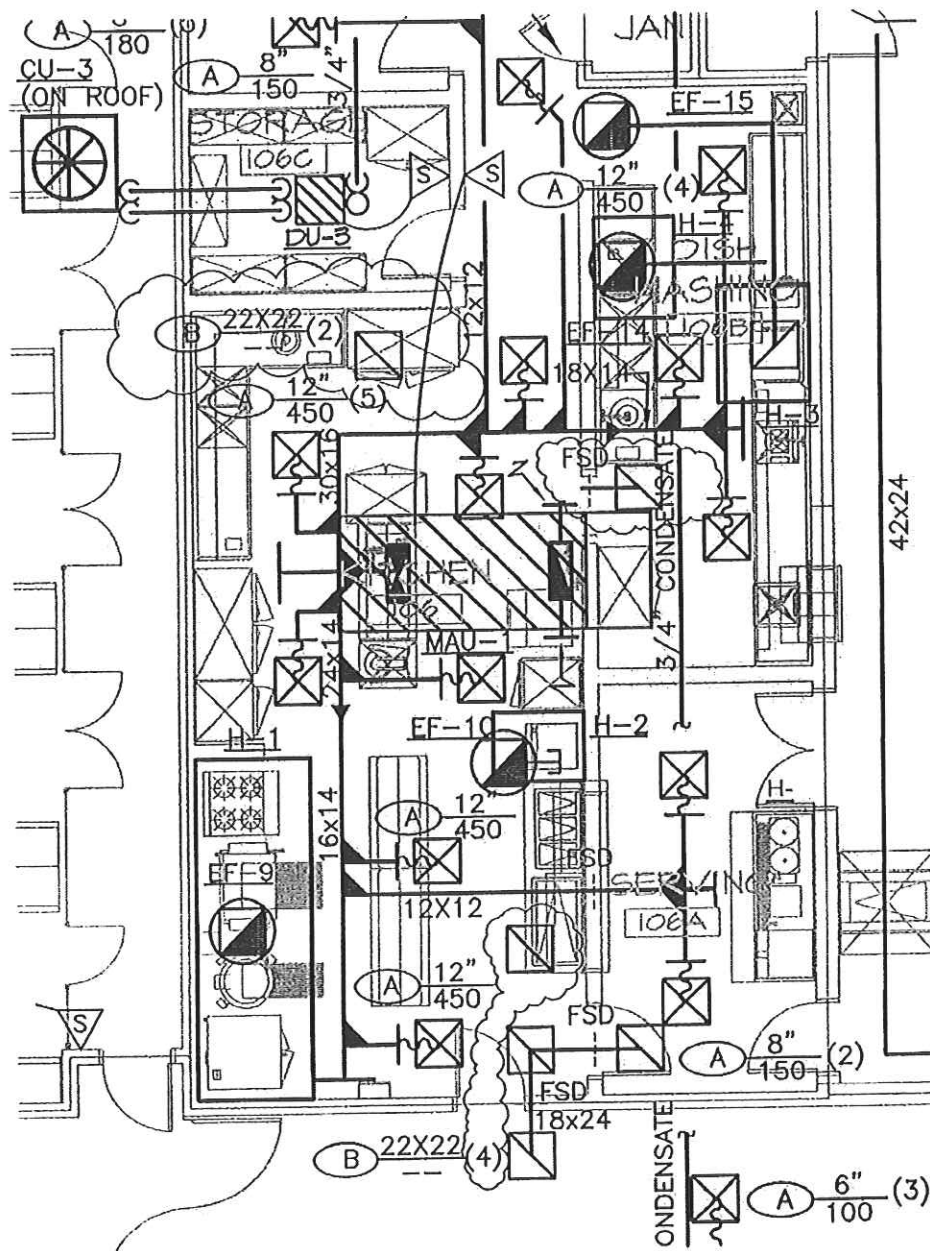
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READINESS CENTER**
MOOREFIELD, WV

DRAWN BY: MCC
CHECKED BY: TLC
DATE: 08/03/11

DWG. NO:
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Clingenpeel/McBrayer & Assoc. Inc.
824 CROSS LANES DRIVE
CHARLESTON, WV 25313
PHONE: (304) 343-0316
5 RIDDLE COURT
MORGANTOWN, WV 26505
PHONE: (304) 598-2558



PARTIAL FLOOR PLAN - AREA "B"

SCALE: $1/8" = 1'-0"$

**NEW FACILITIES FOR
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READINESS CENTER**
MOOREFIELD, WEST VIRGINIA

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M-102
DWG. NO.

SKM-2

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ENGINEERING

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