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	PAGE
DEFK9020	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
JOHN ABBOTT
304-558-2544

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

Thaxton Construction Co.,Inc.
P.O. Box 13279
Charleston,WV 25360

SHIP TO
DIV ENGINEERING & FACILITIES
CAMP DAWSON ARMY TRAINING SITE
240 ARMY ROAD

KINGWOOD, WV
26537-1077 304-329-4417

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/12/2009				

BID OPENING DATE: 04/15/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		962-73		$598,000.00

RECLAMATION: RESTORATION OF LAND & OTHER PROPERTIES

CONTRACT TO PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO REPAIR THE ROAD SLIP AT THE WV ARMY NATIONAL GUARD, CAMP DAWSON, KINGWOOD, WV, PER THE SPECIFICATIONS.

MANDATORY ON-SITE PRE-BID: CAMP DAWSON
240 ARMY ROAD
KINGWOOD, WV
3/30/2009; 1:30 PM

EXHIBIT 5

WEST VIRGINIA CODE 21-1D-5 PROVIDES THAT: ANY SOLICITATION FOR A PUBLIC IMPROVEMENT CONSTRUCTION CONTRACT REQUIRES EACH VENDOR THAT SUBMITS A BID FOR THE WORK TO SUBMIT AT THE SAME TIME AN AFFIDAVIT OF COMPLIANCE WIT THE BID. THE ENCLOSED DRUG-FREE WORKPLACE AFFIDAVIT MUST BE SIGNED AND SUBMITTED WITH THE BID AS EVIDENCE OF THE VENDOR'S COMPLIANCE WITH THE PROVISIONS OF ARTICLE 1D, CHAPTER 21 OF THE WEST VIRGINIA CODE. FAILURE TO SUBMIT THE SIGNED DRUG-FREE WORKPLACE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF SUCH BID.

NOTICE TO PROCEED: THIS CONTRACT IS TO BE PERFORMED WITHIN 60 CALENDAR DAYS AFTER THE NOTICE TO PROCEED IS RECEIVED. UNLESS OTHERWISE SPECIFIED, THE FULLY EXECUTED PURCHASE ORDER WILL BE CONSIDERED NOTICE TO PROCEED.

RECEIVED
2009 APR 22 PM 1:17
WV PURCHASING DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelley D. Thaxton	984-2299	4/22/09

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55-0743840	

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. All quotations are governed by the ***West Virginia Code*** and the ***Legislative Rules*** of the Purchasing Division.

4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required $125 fee.

5. 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.

6. Payment may only be made after the delivery and acceptance of goods or services.

7. Interest may be paid for late payment in accordance with the ***West Virginia Code***.

8. Vendor preference will be granted upon written request in accordance with the ***West Virginia Code***.

9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.

11. The laws of the State of West Virginia and the ***Legislative Rules*** of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.

12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.

13. BANKRUPTCY: In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.

14. HIPAA BUSINESS ASSOCIATE ADDENDUM: The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site **(http://www.state.wv.us/admin/purchase/vrc/hipaa.htm)** 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.

15. WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT: If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.

2. SPECIFICATIONS: 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. Complete all sections of the quotation form.

4. Unit prices shall prevail in case of discrepancy.

5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.

6. BID SUBMISSION: 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

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

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CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HERE IN.

WAGE RATES: THE CONTRACTOR OR SUBCONTRACTOR SHALL PAY THE HIGHER OF THE U.S. DEPARTMENT OF LABOR MINIMUM WAGE RATES AS ESTABLISHED FOR PRESTON COUNTY, PURSUANT TO WEST VIRGINIA CODE 21-5A, ET, SEQ. (PREVAILING WAGE RATES APPLY TO THIS PROJECT)

ARBITRATION: ANY REFERENCES MADE TO ARBITRATION OR INTEREST FOR PAYMENTS DUE (EXCEPT FOR ANY INTEREST REQUIRED BY STATE LAW) CONTAINED IN THIS CONTRACT OR IN ANY AMERICAN INSTITUTE OF ARCHITECTS DOCUMENTS PERTAINING TO THIS CONTRACT ARE HEREBY DELETED.

WORKERS' COMPENSATION: VENDOR IS REQUIRED TO PROVIDE A CERTIFICATE FROM WORKERS' COMPENSATION IF SUCCESSFUL.

ALL OF THE ITEMS CHECKED BELOW WILL BE A REQUIREMENT OF THIS CONTRACT:

(XX) INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF COMMERCIAL GENERAL LIABILITY INSURANCE PRIOR TO ISSUANCE OF CONTRACT. UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS, THE MINIMUM AMOUNT OF INSURANCE COVERAGE REQUIRED IS $250,000.

( ) BUILDERS RISK INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF BUILDERS RISK - ALL RISK INSURANCE IN AN AMOUNT EQUAL TO 100% OF THE AMOUNT OF THE CONTRACT.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

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(XX) BONDS: FIVE PERCENT (5%) OF THE TOTAL AMOUNT OF THE BID PAYABLE TO THE STATE OF WEST VIRGINIA, SHALL BE SUBMITTED WITH EACH BID AS A BID BOND. THE SUCCESSFUL BIDDER SHALL ALSO FURNISH A PERFORMANCE BOND AND LABOR/MATERIAL BOND FOR 100% OF THE AMOUNT OF THE CONTRACT. BONDS MAY BE PROVIDED IN THE FORM OF A CERTIFIED CHECK IRREVOCABLE LETTER OF CREDIT, OR BOND FURNISHED BY A SOLVENT SURETY COMPANY AUTHORIZED TO DO BUSINESS IN THE STATE OF WEST VIRGINIA. A LETTER OF CREDIT SUBMITTED IN LIEU OF A BOND WILL ONLY BE ALLOWED FOR PROJECTS UNDER $100,000. PERSONAL OR BUSINESS CHECKS ARE NOT ACCECPTABLE IN LIEU OF THE 5% BID BOND, PERFORMANCE BOND, OR LABOR AND MATERIAL BOND.

( ) MAINTENANCE BOND: A TWO (2) YEAR MAINTENANCE BOND COVERING THE ROOFING SYSTEM WILL BE A REQUIREMENT OF THE SUCCESSFUL VENDOR.

REV. 11/00

EXHIBIT 7

DOMESTIC ALUMINUM, GLASS & STEEL IN PUBLIC WORKS PROJECTS

IN ACCORDANCE WITH WEST VIRGINIA CODE 5-19-1 ET., SEQ., EVERY CONTRACT FOR CONSTRUCTION, RECONSTRUCTION, ALTERATION, REPAIR, IMPROVEMENT OR MAINTENANCE OF PUBLIC WORKS, WHERE THE COST IS MORE THAN $50,000 AND, IN THE CASE OF STEEL ONLY, WHERE THE COST OF STEEL IS MORE THAN $50,000 OR WHERE MORE THAN 10,000 POUNDS OF STEEL ARE REQUIRED, THE STATE WILL ACCEPT ONLY ALUMINUM GLASS, OR STEEL PRODUCTS PRODUCED IN THE UNITED STATES. IN ADDITION, ITEMS OF MACHINERY OR EQUIPMENT PURCHASED FOR USE AT THE SITE OF PUBLIC WORKS SHALL BE MADE OF

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DOMESTIC ALUMINUM, GLASS OR STEEL, UNLESS THE COST OF THE PRODUCT IS LESS THAN $50,000 OR LESS THAN 10,000 POUNDS OF STEEL ARE USED IN PUBLIC WORKS PROJECTS.

FOREIGN MADE ALUMINUM, GLASS OR STEEL PRODUCTS MAY BE ACCEPTED ONLY IF THE COST OF DOMESTIC PRODUCTS IS FOUN TO BE UNREASONABLE. SUCH COST IS UNREASONABLE IF IT IS 20% OR MORE HIGHER THAN THE BID PRICE FOR FOREIGN MADE PRODUCTS. IF THE DOMESTIC ALUMINUM, GLASS OR STEEL PRODUCTS TO BE SUPPLIED OR PRODUCED IN A "SUBSTANTIAL LABOR SURPLUS AREA", AS DEFINED BY THE UNITED STATES DEPARTMENT OF LABOR, FOREIGN PRODUCTS MAY BE SUPPLIED ONLY IF DOMESTIC PRODUCTS ARE 30% OR MORE HIGHER IN PRICE THAN THE FOREIGN MADE PRODUCTS.

IF, PRIOR TO THE AWARD OF A CONTRACT UNDER THE ABOVE PROVISIONS, THE SPENDING OFFICER OF THE SPENDING UNIT DETERMINES THAT THERE EXISTS A BID FOR LIKE FOREIGN ALUMINUM, GLASS OR STEEL THAT IS REASONABLE AND LOWER THAN THE LOWEST BID DOMESTIC PRODUCTS, THE SPENDING OFFICE MAY REQUEST, IN WRITING, A REEVALUATION AND REDUCTION IN THE LOWEST BID FOR SUCH DOMESTIC PRODUCTS. ALL VENDORS MUST INDICATE IN THEIR BID IF THEY ARE SUPPLYING FOREIGN ALUMINUM, GLASS OR STEEL.

REV. 3/88

EXHIBIT 9

NOTICE FOR ISSUANCE & ACKNOWLEDGEMENT OF CONSTRUCTION PROJECT ADDENDA

THE ARCHITECT/ENGINEER AND/OR AGENCY SHALL BE REQUIRED TO ABIDE BY THE FOLLOWING SCHEDULE IN ISSUING CONSTRUCTION PROJECT ADDENDA FOR STATE AGENCIES:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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(1) THE ARCHITECT/ENGINEER SHALL PREPARE THE ADDENDUM AND A LIST OF ALL PARTIES THAT HAVE PROCURED DRAWINGS AND SPECIFICATIONS FOR THE PROJECT. THE ADDENDUM AND LIST SHALL BE FORWARDED TO THE BUYER IN THE STATE PURCHASING DIVISION. THE ARCHITECT/ENGINEER SHALL ALS SEND A COPY OF THE ADDENDUM TO THE STATE AGENCY FOR WHICH THE CONTRACT IS ISSUED.

(2) THE BUYER SHALL SEND THE ADDENDUM TO ALL INTERESTED PARTIES AND, IF NECESSARY, EXTEND THE BID OPENING DATE. ANY ADDENDUM SHOULD BE RECEIVED BY THE BUYER WITHIN FOURTEEN (14) DAYS PRIOR TO THE BID OPENING DATE.

(3) ALL ADDENDA SHOULD BE FORMALLY ACKNOWLEDGED BY ALL BIDDERS AND SUBMITTED TO THE STATE PURCHASING DIVISION. THE SAME RULES AND REGULATIONS THAT APPLY TO THE ORIGINAL BIDDING DOCUMENT SHALL ALSO APPLY TO AN ADDENDUM DOCUMENT. THE ONLY EXCEPTION MAY BE FOR AN ADDENDUM THAT IS ISSUED FOR THE SOLE PURPOSE OF CHANGING A BID OPENING TIME AND/OR DATE.

REV. 11/96

EXHIBIT 10

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 NOS.:

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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NO. 1 ..X.....

NO. 2 ..X.....

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF TH ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF THE 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.

Kelley D. Thaxton .....SIGNATURE

Thaxton Construction Co., Inc.....COMPANY

4/22/09.....DATE

REV. 11/96

CONTRACTORS LICENSE

WEST VIRGINIA STATE CODE 21-11-2 REQUIRES THAT ALL PERSONS DESIRING TO PERFORM CONTRACTING WORK IN THIS STATE MUST BE LICENSED. THE WEST VIRGINIA CONTRACTORS

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelley D. Thaxton	984-2299	4/22/09
TITLE: Vice President	FEIN: 55-0743840	ADDRESS CHANGES TO BE NOTED ABOVE

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

State of West Virginia
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LICENSING BOARD IS EMPOWERED TO ISSUE THE CONTRACTORS LICENSE. APPLICATIONS FOR A CONTRACTORS LICENSE MAY BE MADE BY CONTACTING THE WEST VIRGINIA DIVISION OF LABOR CAPITOL COMPLEX, BUILDING 3, ROOM 319, CHARLESTON, WV 25305. TELEPHONE: (304) 558-7890.

WEST VIRGINIA STATE CODE 21-11-11 REQUIRES ANY PROSPECTIVE BIDDER TO INCLUDE THE CONTRACTORS LICENSE NUMBER ON THEIR BID.

BIDDER TO COMPLETE:

CONTRACTORS NAME: Thaxton Construction Co., Inc.

CONTRACTORS LICENSE NO.: WV025029

THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FURNISH A COPY OF THEIR CONTRACTORS LICENSE PRIOR TO ISSUANCE OF A PURCHASE ORDER/CONTRACT

APPLICABLE LAW

THE WEST VIRGINIA STATE CODE, PURCHASING DIVISION RULES AND REGULATIONS, AND THE INFORMATION PROVIDED IN THE "REQUEST FOR QUOTATION" ISSUED BY THE PURCHASING DIVISION IS THE SOLE AUTHORITY GOVERNING THIS PROCUREMENT.

ANY INFORMATION PROVIDED IN SPECIFICATION MANUALS, OR ANY OTHER SOURCE, VERBAL OR WRITTEN, WHICH CONTRADICTS OR ALTERS THE INFORMATION PROVIDED FROM THE SOURCES AS DESCRIBED IN THE ABOVE PARAGRAPH IS VOID AND OF NO EFFECT.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATI-

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelley D. Thaxton	984-2299	4/22/09

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55-0743840	

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CALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.

REV. 1/2005

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15
2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:

SEALED BID

BUYER: JOHN ABBOTT

REQ. NO.: DEFK9020

BID OPENING DATE: 04/15/2009

BID OPENING TIME: 1:30 PM

PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:

984-2334

PLEASE PRINT OR TYPE NAME OF PERSON TO CONTACT

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelley D. Thornton	984-2299	4/22/09

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	4/22/09	

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CONCERNING THIS QUOTE:
Kelley D. Thaxton

****** THIS IS THE END OF RFQ DEFK9020 ****** TOTAL: $598,000.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55-0743840	

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AMEC Earth & Environmental
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299
(502) 267-0700

Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

10

WVARNG
South Gate Road Slope Repair
Design Brief

Dated: 2/25/09

Prepared For: ***WVARNG***

Prepared By:

CHRISTOPHER J. RAMSEY
REGISTERED
16164
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

2-25-09

AMEC Earth & Environmental
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299
(502) 267-0700

Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

Design Discussion

The South Gate Access Road has suffered from intermittent erosion and minor landslides, which have led to a state of disrepair and limited use. AMEC prepared three concepts for stabilization of approximately 230 linear feet of the road. AMEC recommended, and WVARNG concurred that the best method of repair was a drilled shaft wall embedded into bedrock with precast concrete lagging spanning between the shafts near the surface. Multiple exploratory borings and surface reconnaissance were used to estimate the limits of the proposed drilled shaft retaining wall, the loads that would be induced on the system as it supports the restored road grade and adjacent hillside, and the soil & rock properties within the underlying subsurface profile.

Lab tests indicate an average unit weight for the overburden soils is approximately 115 pounds per cubic foot (pcf). Considering the amount of clay content in soil matrix, an appropriate friction angle would be 25 degrees. Field and lab inspection of the rock core samples indicate a hard shale, that would most likely not be easily removed with normal augering tools. As such, we assigned a unit weight of 140 pcf, a friction angle of 40 degrees and a shear strength of 10,000 pounds per square foot to the rock

Drilled shaft retaining walls are common in roadsides next to river valley applications, similar to this. The methodology developed to design this system is derived from the following sources:

- AASHTO Standard Specifications for Bridges, 17th Edition
- FHWA Publication Geotechnical Engineering Circular No. 4 (1999), and
- "Slide Control by Drilled Pier Walls", M. Nethero, ASCE National Convention; Las Vegas, NV; 1982.

AMEC Earth & Environmental
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299
(502) 267-0700

Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

Drilled Shaft Retaining Wall - Design Section 11+00:

Soil Parameters:

Unit weight $\gamma_{soil} := 115 \cdot pcf$ Phi angle $\phi_{soil} := 25 \cdot deg$ $k_{a\_soil} := \tan\left(45 \cdot deg - \frac{\phi_{soil}}{2}\right)^2$ $k_{a\_soil} = 0.41$

Factor of Safety on Passive $FS := 1.5$ $k_{p\_soil} := \frac{1}{k_{a\_soil}}$ $k_{p\_soil} = 2.46$

Rock Parameters:

Unit weight $\gamma_{rock} := 140 \cdot pcf$ Phi angle $\phi_{rock} := 40 \cdot deg$ $k_{a\_rock} := \tan\left(45 \cdot deg - \frac{\phi_{rock}}{2}\right)^2$ $k_{a\_rock} = 0.22$

Factor of Safety on Passive $FS := 1.5$ $k_{p\_rock} := \frac{1}{k_{a\_rock}}$ $k_{p\_rock} = 4.60$

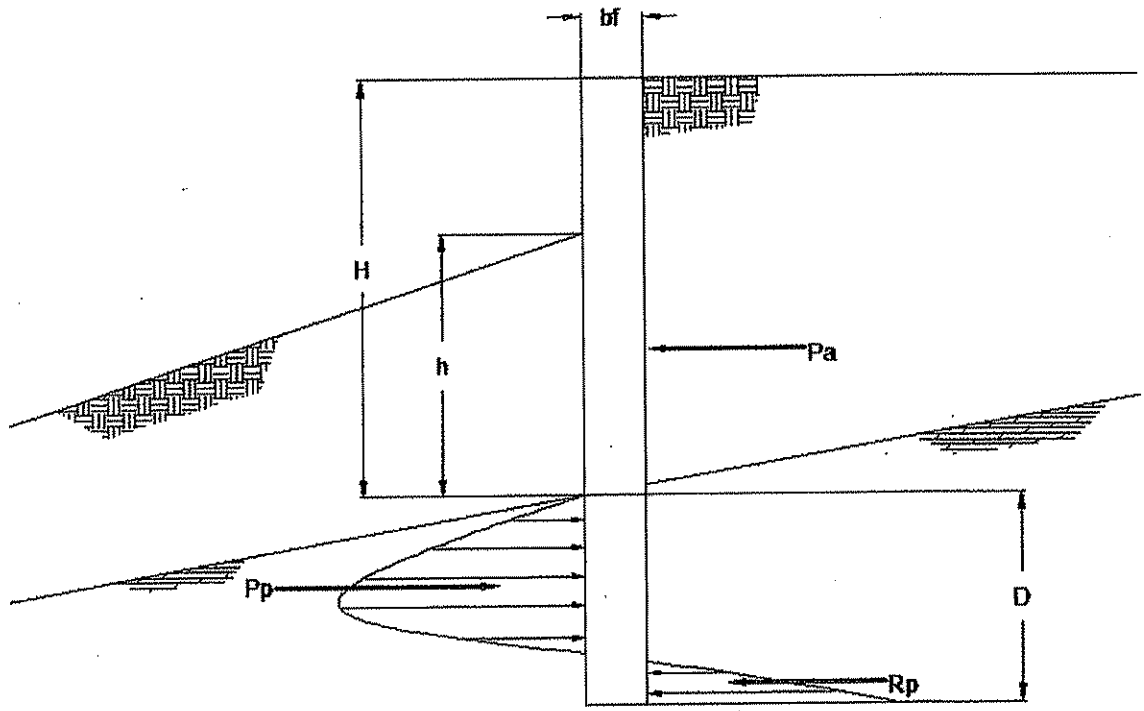
Rock Shear Strength $C_{rock} := 10ksf$

Wall Characteristics:

Wall height $H := 27 \cdot ft$ Depth of Overburden $h := 18ft$ Pile Width $b_f := 2.5 \cdot ft$ Pile spacing $s := 10 \cdot ft$

Horizontal Surcharge Pressure applied $q := 100psf$ $b_e := if\left(3 \cdot b_f < s, 3 \cdot b_f, s\right)$ $b_e = 7.5\,ft$

Depth of Rock Socket $D := 12ft$



AMEC Earth & Environmental
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299
(502) 267-0700

Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

$$P_a := k_{a\_soil} \cdot \gamma_{soil} \cdot \frac{(H)^2}{2} = 17.01 \cdot \frac{kips}{ft}$$

SUM MOMENTS ABOUT "P" AND SOLVE FOR "Rp"

$$R_p := \left[(P_a \cdot s) \cdot \left(\frac{H}{3} + \frac{D}{3} \right) - \gamma_{soil} \cdot \left[\frac{k_{p\_soil} \cdot b_e}{FS} \cdot \left[\frac{(h)^2}{2} \right] \right] \cdot \left(\frac{h}{3} + \frac{D}{3} \right) + q \cdot H \cdot s \cdot \left(\left(\frac{H}{2} + \frac{D}{3} \right) \right) \right] \cdot \frac{9}{D \cdot 5} = 58.35 \cdot kips$$

SUM OF THE HORIZONTAL FORCES = 0, DETERMINE "Pp"

$$P_p := P_a \cdot s - \left[\gamma_{soil} \cdot \frac{k_{p\_soil} \cdot b_e}{FS} \cdot \left(\frac{h^2}{2} \right) \right] + q \cdot H \cdot s + R_p = 25.96 \cdot kips$$

$$P_{p\_avg} := \frac{P_p}{\frac{2 \cdot D \cdot b_f}{3}} = 1.3 \cdot ksf \qquad P_{p\_max} := 1.5 \cdot P_{p\_avg} = 1.95 \cdot ksf \quad \text{DUE TO PARABOLIC DISTRIBUTION}$$

$$R_{p\_avg} := \frac{R_p}{D \cdot \frac{b_f}{3}} = 5.83 \cdot ksf \qquad R_{p\_max} := 2 \cdot R_{p\_avg} = 11.67 \cdot ksf \quad \text{DUE TO TRIANGULAR DISTRIBUTION}$$

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ULTIMATE PASSIVE PRESSURE @ Pp or D/3

$$D3_{pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot\frac{D}{3} = 23.66\cdot ksf$$

$$FS_{D3\_pass} := \frac{D3_{pass}}{P_{p\_max}} = 12.15 \quad > \quad 2.0 \quad \text{OK!}$$

ULTIMATE PASSIVE PRESSURE @ Rp or 8D/9

$$D_{8\_9pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot\frac{8D}{9} = 24.6\cdot ksf$$

$$FS_{D8\_9pass} := \frac{D_{8\_9pass}}{R_{p\_avg}} = 4.22 \quad > \quad 2.0 \quad \text{OK!}$$

ULTIMATE PASSIVE PRESSURE @ D

$$D_{pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot D = 24.79\cdot ksf$$

$$FS_{Dpass} := \frac{D_{pass}}{R_{p\_max}} = 2.12 \quad > \quad 2.0 \quad \text{OK!}$$

FIND POINT OF ZERO SHEAR

$$V_o := \frac{\left[P_a\cdot s - \left[\gamma_{soil}\cdot\frac{k_{p\_soil}\cdot b_e}{FS}\cdot\left(\frac{h^2}{2}\right)\right] + q\cdot H\cdot s\right]}{b_f\cdot P_{p\_avg}} = -9.98\,ft \quad \text{ABOVE TOP OF ROCK}$$

MAXIMUM MOMENT

$$M_{max} := \left(\frac{H}{3} + V_o\right)\cdot P_a\cdot s - \left(\frac{h}{3} + V_o\right)\cdot\left[\gamma_{soil}\cdot\frac{k_{p\_soil}\cdot b_e}{FS}\cdot\left(\frac{h^2}{2}\right)\right] + \left(\frac{H}{2} + V_o\right)\cdot q\cdot H\cdot s - P_{p\_avg}\cdot b_f\cdot\frac{V_o^2}{2} = 680.16\cdot ft\cdot kips$$

$F_y := 50ksi$ $\quad F_a := .66F_y = 33\cdot ksi$

$$S_{x\_rqd} := \frac{M_{max}}{F_a} = 247.33\cdot in^3$$

USE W21x111 GR50 PILE

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Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

Drilled Shaft Retaining Wall - Design Sections 12+00 & 13+00:

Soil Parameters:

Unit weight $\gamma_{soil} := 115 \cdot pcf$ Phi angle $\phi_{soil} := 25 \cdot deg$ $k_{a\_soil} := \tan\left(45 \cdot deg - \frac{\phi_{soil}}{2}\right)^2$ $k_{a\_soil} = 0.41$

Factor of Safety on Passive $FS := 1.5$ $k_{p\_soil} := \frac{1}{k_{a\_soil}}$ $k_{p\_soil} = 2.46$

Rock Parameters:

Unit weight $\gamma_{rock} := 140 \cdot pcf$ Phi angle $\phi_{rock} := 40 \cdot deg$ $k_{a\_rock} := \tan\left(45 \cdot deg - \frac{\phi_{rock}}{2}\right)^2$ $k_{a\_rock} = 0.22$

Factor of Safety on Passive $FS := 1.5$ $k_{p\_rock} := \frac{1}{k_{a\_rock}}$ $k_{p\_rock} = 4.60$

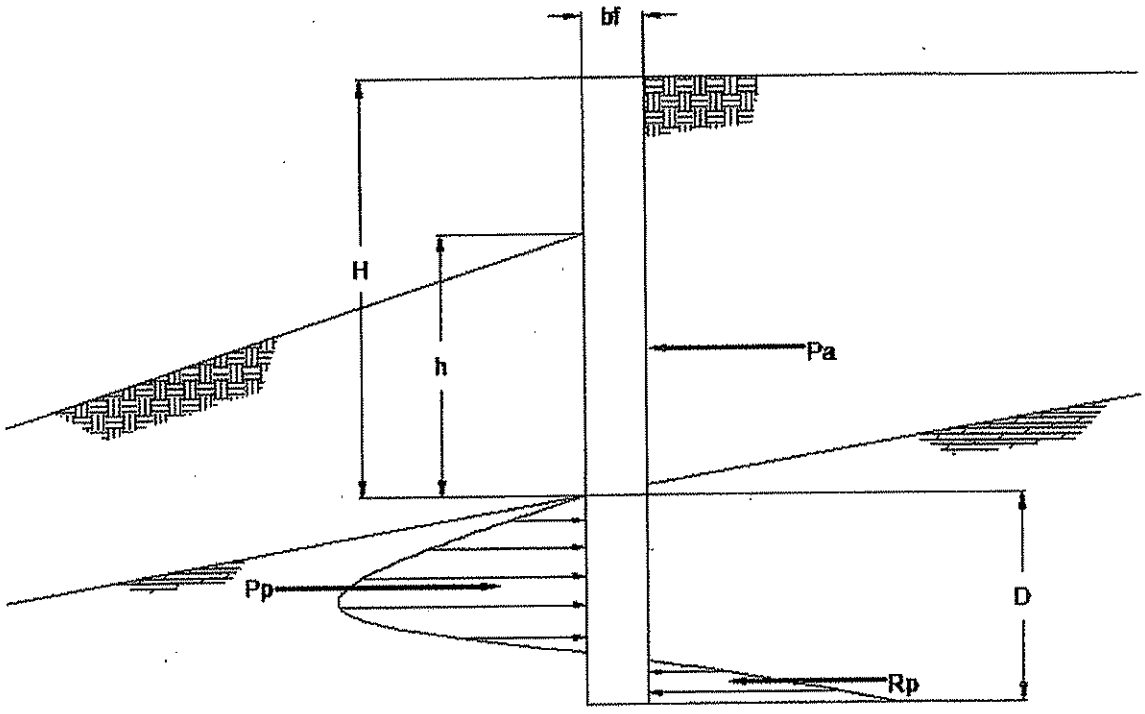
Rock Shear Strength $C_{rock} := 10ksf$

Wall Characteristics:

Wall height $H := 20 \cdot ft$ Depth of Overburden $h := 11ft$ Pile Width $b_f := 2.5 \cdot ft$ Pile spacing $s := 10 \cdot ft$

Horizontal Surcharge Pressure applied $q := 100psf$ $b_e := if\left(3 \cdot b_f < s, 3 \cdot b_f, s\right)$ $b_e = 7.5\,ft$

Depth of Rock Socket $D := 15ft$



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Project No. 7-7728-0000

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Chk'd By: DWD

$$P_a := k_{a\_soil} \cdot \gamma_{soil} \cdot \frac{(H)^2}{2} = 9.33 \cdot \frac{kips}{ft}$$

SUM MOMENTS ABOUT "P" AND SOLVE FOR "Rp"

$$R_p := \left[\left(P_a \cdot s\right) \cdot \left(\frac{H}{3} + \frac{D}{3}\right) - \gamma_{soil} \cdot b_e \cdot \left[\frac{k_{p\_soil}}{FS} \cdot \left[\frac{(h)^2}{2} \right] \right] \cdot \left(\frac{h}{3} + \frac{D}{3}\right) + q \cdot H \cdot s \cdot \left(\left(\frac{H}{2} + \frac{D}{3}\right)\right) \right] \cdot \frac{9}{D \cdot 5} = 77.54 \cdot kips$$

SUM OF THE HORIZONTAL FORCES = 0, DETERMINE "Pp"

$$P_p := P_a \cdot s - \left[\gamma_{soil} \cdot b_e \cdot \frac{k_{p\_soil}}{FS} \cdot \left(\frac{h^2}{2}\right) \right] + q \cdot H \cdot s + R_p = 105.18 \cdot kips$$

$$P_{p\_avg} := \frac{P_p}{\frac{2 \cdot D \cdot b_f}{3}} = 4.21 \cdot ksf \qquad P_{p\_max} := 1.5 \cdot P_{p\_avg} = 6.31 \cdot ksf \quad \text{DUE TO PARABOLIC DISTRIBUTION}$$

$$R_{p\_avg} := \frac{R_p}{D \cdot \frac{b_f}{3}} = 6.2 \cdot ksf \qquad R_{p\_max} := 2 \cdot R_{p\_avg} = 12.41 \cdot ksf \quad \text{DUE TO TRIANGULAR DISTRIBUTION}$$

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ULTIMATE PASSIVE PRESSURE @ Pp or D/3

$$D3_{pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot\frac{D}{3} = 23\cdot ksf$$

$$FS_{D3\_pass} := \frac{D3_{pass}}{P_{p\_max}} = 3.64 \quad > \quad 2.0 \quad \text{OK!}$$

ULTIMATE PASSIVE PRESSURE @ Rp or 8D/9

$$D_{8\_9pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot\frac{8D}{9} = 24.17\cdot ksf$$

$$FS_{D8\_9pass} := \frac{D_{8\_9pass}}{R_{p\_avg}} = 3.9 \quad > \quad 2.0 \quad \text{OK!}$$

ULTIMATE PASSIVE PRESSURE @ D

$$D_{pass} := \gamma_{soil}\cdot H + 2\cdot C_{rock} + \gamma_{rock}\cdot D = 24.4\cdot ksf$$

$$FS_{Dpass} := \frac{D_{pass}}{R_{p\_max}} = 1.97 \quad > \quad 2.0 \quad \text{OK!}$$

FIND POINT OF ZERO SHEAR

$$V_o := \frac{\left[P_a\cdot s - \left[\gamma_{soil}\cdot b_e\cdot\frac{k_{p\_soil}}{FS}\cdot\left(\frac{h^2}{2}\right)\right] + q\cdot H\cdot s\right]}{b_f\cdot P_{p\_avg}} = 2.63\,ft$$

ABOVE TOP OF ROCK

MAXIMUM MOMENT

$$M_{max} := \left(\frac{H}{3} + V_o\right)\cdot P_a\cdot s - \left(\frac{h}{3} + V_o\right)\cdot\left[\gamma_{soil}\cdot b_e\cdot\frac{k_{p\_soil}}{FS}\cdot\left(\frac{h^2}{2}\right)\right] + \left(\frac{H}{2} + V_o\right)\cdot q\cdot H\cdot s - P_{p\_avg}\cdot b_f\cdot\frac{V_o^2}{2} = 544.34\cdot ft\cdot kips$$

$F_y := 50ksi$ $\qquad F_a := .66F_y = 33\cdot ksi$

$$S_{x\_rqd} := \frac{M_{max}}{F_a} = 197.94\cdot in^3$$

USE W18x106 GR50 PILE

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Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

Precast Lagging Design:

$t_{brg} := 5in$

$w := \frac{P_{a\_max}}{H} + q = 950.5 \cdot psf$ Clear Span of Lagging ---> $S_{clr} := s - 2t_{brg} = 9.17\,ft$

$M_{max\_lag} := w \cdot \frac{S_{clr}^2 \cdot 1ft}{10} = 7.99 \cdot ft \cdot kips$ $V_{max\_lag} := w \cdot \frac{S_{clr} \cdot 1ft}{2} = 4.36 \cdot kips$

TRY 8" THICK LAGGING

$f_c := 4ksi$ $b := 12in$ $t_{lag} := 8in$

$f_y := 60ksi$ $d := t_{lag} - 2in = 6 \cdot in$

Longitudinal bar <--- $d_{bf} := \frac{6}{8} \cdot in$ <---

$A_{bf} := \frac{\pi \cdot d_{bf}^2}{4}$ $A_{bf} = 0.44 \cdot in^2$

Number of longitudinal bars $N := 4$ $Spacing := \frac{(3ft)}{N}$ $Spacing = 9 \cdot in$

Area of flexural steel provided $As := \frac{(12in)}{Spacing} A_{bf}$ $As = 0.59 \cdot in^2$

MOMENT CALCULATION

$T_{lag} := As \cdot f_y = 35.34 \cdot kips$

$a := \frac{T_{lag}}{0.85 \cdot f_c \cdot b} = 0.87 \cdot in$

$M := T_{lag} \cdot \left(d - \frac{a}{2}\right) = 196.75 \cdot in \cdot kips$ > $M_u := M_{max\_lag} \cdot \frac{1.7}{0.9} = 181.04 \cdot in \cdot kips$ OK!

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BALANCED REINFORCEMENT RATIO

$\rho b := \frac{0.85 \cdot \beta_1 \cdot f_c}{f_y} \cdot \frac{87000 \cdot psi}{87000 \cdot psi + f_y}$ $\rho b = 0.029$ Balanced condition

$Asmax := 0.75 \cdot \rho b \cdot b \cdot d$ $Asmax = 1.54 \cdot in^2$ ACI 10.3.3 "As" provided for flexure must be less than this to ensure ductile behavior <----

$\rho min := \frac{200 \cdot psi}{f_y}$

ACI 10.5 minimum reinforcement required, Alternatively, area of reinforcement provided at every section shall be at least 1/3 greater than that required by analysis. <----

$Asmin := \rho min \cdot b \cdot d$ $Asmin = 0.24 \cdot in^2$

$a := \frac{As \cdot f_y}{\beta_1 \cdot f_c \cdot b}$ $a = 0.87 \cdot in$ $As = 0.59 \cdot in^2$ <---- check with above Asmax and Asmin criteria

SHEAR CHECK

$V_n := 2\sqrt{f_c} \cdot b \cdot d = 0.13\, ft^{0.5} \cdot s \cdot lb^{-0.5} \cdot kips$ > $V_u := V_{max\_lag} \cdot \frac{1.7}{0.85} = 8.71 \cdot kips$ OK!

BEARING

$P_{lag} := w \cdot \frac{S_{clr} \cdot 1ft}{2} = 4.36 \cdot kips$

$A_b := \frac{(P_{lag} \cdot 1.7)}{(0.7) \cdot 0.85 \cdot f_c \cdot 12in} = 0.26 \cdot in$

MIN. BEARING > .260" PER SIDE, OR .347" WITH A 0.75 FACTOR

FOR 3 FEET TALL PANELS, USE 4-#6 BARS SPACED AT 9" HORIZ., WITH 3" CLEAR AND 4-#4 BARS VERTICAL SPACED EQUALLY ACROSS, WITH 3" CLEAR

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Project Name: WVARNG South Gate Road
Project No. 7-7728-0000

By: CJR
Chk'd By: DWD

APPENDIX A

SOIL BORING LOGS

BORING NUMBER E-2

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/10/08 COMPLETED 10/10/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1280.3 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		NO SAMPLE POSSIBLE DUE TO PRESENCE OF RIP RAP										
5		GRAVEL, FINE, WITH SILTY CLAY, LOOSE	SS 1		3-3-4 (7)							
		ROCK, HIGHLY WEATHERED, SOME SILTY CLAY, DARK GRAY	ST 2				100	21	48	28	20	29
10		CLAY, SILTY, WITH FINE TO COARSE ROCK FRAGMENTS, SOME WEATHERED SHALE, BROWN, STIFF	SS 3		2-3-9 (12)							
15			SS 4		22-40-47 (87)							
		WEATHERED SHALE, LITTLE SILTY CLAY WITH FINE TO COARSE SAND, DARK GRAY, VERY DENSE	SS 5		50/1"							
20		SHALE, LIGHT GRAY 17.3-17.5, 17.8-18.0 - HIGHLY WEATHERED ZONES 18.6, 19.3, 21.6, 23.5, 24.5 - SLIGHTLY WEATHERED FRACTURE 26.4-26.5, 27.0 - MODERATELY WEATHERED FRACTURE 27.3 - SLIGHTLY WEATHERED FRACTURE 27.5 - SLIGHT TO MODERATELY WEATHERED FRACTURE 28.3-28.5, 28.7, 28.9, 29.5, 29.6, 30.1, 31.1 - SLIGHTLY WEATHERED FRACTURE	RC 6	100 (88)								
25			RC 7	100 (100)								
30			RC 8	92 (50)								
			RC 9	100 (91)								

Refusal at 18.3 feet.
Bottom of borehole at 33.7 feet.

BORING NUMBER E-4

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/9/08 COMPLETED 10/9/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1273.7 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		GRAVEL, FINE, WITH LITTLE SILTY CLAY AND FINE TO COARSE SAND, LOOSE	SS 1		4-4-5 (9)							
5		SILT, CLAYEY, LITTLE FINE TO COARSE SAND, LITTLE FINE GRAVEL, TAN AND GRAY, STIFF	SS 2		5-6-9 (15)							
		CLAYEY SILT, TAN AND REDDISH BROWN, VERY STIFF	SS 3		15-9-14 (23)							
10		WEATHERED SHALE, DARK GRAY, VERY STIFF	SS 4		4-7-10 (17)							
15		CLAY, SILTY, WITH ROCK FRAGMENTS (HIGHLY WEATHERED), HARD	SS 5		50/3"							

Refusal at 15.0 feet.
Bottom of borehole at 15.0 feet.

BORING NUMBER E-5

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/9/08 **COMPLETED** 10/9/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1271.2 ft **HOLE SIZE** 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SILT, CLAYEY, MIX OF GRAY AND REDDISH BROWN, MEDIUM STIFF	SS 1		4-4-3 (7)							
		SILT, CLAYEY, TRACE FINE GRAVEL, LITTLE BLACK NODULES, BROWN, MEDIUM STIFF	SS 2		5-4-4 (8)							
5		SILT, CLAYEY, TRACE BLACK NODULES, TAN, VERY STIFF	SS 3		6-11-11 (22)							
			SS 4		8-9-11 (20)							
10												
		SILT, CLAYEY, LITTLE FINE TO COARSE ROCK FRAGMENTS, TAN, VERY STIFF	SS 5		15-12-12 (24)							
15												
		SHALE, LIGHT GRAY 18.7, 19.6 - SLIGHTLY WEATHERED FRACTURE 20.0 - SLIGHT TO MODERATELY WEATHERED FRACTURE 20.3-21.2, 21.7-21.9 - ROCK FRAGMENTS, SLIGHT TO MODERATELY WEATHERED 22-23 ZONE OF LOSS 23-23.5 ROCK FRAGMENTS SLIGHT TO MODERATELY WEATHERED 23.8 MODERATELY WEATHERED FRACTURE 24.3-24.5 ROCK FRAGMENTS SLIGHT TO MODERATELY WEATHERED 24.8, 24.9 MODERATELY WEATHERED FRACTURE 25.4, 25.8, 25.9, 26.2 - SLIGHT TO MODERATELY WEATHERED FRACTURE 28.1, 29.4, 29.9, 30.3 - SLIGHTLY WEATHERED FRACTURE 31.1, 31.4 - SLIGHT TO MODERATELY WEATHERED FRACTURE 30.8-31.0 - VERTICAL FRACTURE	RC 6	100 (72)							
20			RC 7	70 (44)								
25			RC 8	92 (82)								
30		Refusal at 17.0 feet. Bottom of borehole at 32.0 feet.										

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 12/17/08 08:41 - N:\GINT\PROJECTS\ARNG SLOPE FAILURE.GPJ

BORING NUMBER E-6

AMEC
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Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/9/08 COMPLETED 10/9/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1271 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		CLAY, SILTY, LITTLE BLACK NODULES, MIX OF TAN, REDDISH BROWN AND GRAY, STIFF	SS 1		5-5-6 (11)							
		SILT, CLAYEY, TRACE FINE GRAVEL, TRACE ORGANICS, TAN, STIFF	SS 2		5-6-8 (14)							
5		CLAY, SILTY, WITH FINE GRAINED SAND, REDDISH BROWN AND GRAY	SH 3				112	19	39	22	17	91
		CLAY, SILTY, TAN AND REDDISH BROWN, VERY STIFF	SS 4		10-12-15 (27)							
10		SILT, CLAYEY, WITH FINE GRAINED SAND, TAN, STIFF	SS 5		6-6-6 (12)			15				54
15		CLAY, SILTY, SOME FINE ROCK FRAGMENTS, MIX OF TAN AND DARK GRAY, STIFF	SS 6		8-7-7 (14)			10				58
20		WEATHERED SHALE, VERY DENSE	SS 7		46-50/1"							
25			RC 8	85 (71)								
30			RC 9	93 (76)								
35												

(Continued Next Page)

BORING NUMBER E-6

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11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard

PROJECT NAME South Gate Road Slope Failure

PROJECT NUMBER 7-7728-0000-0002

PROJECT LOCATION Camp Dawson, West Virginia

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SHALE, LIGHT GRAY 28.4 - MODERATELY TO HIGHLY WEATHERED FRACTURE 28.9 - SLIGHTLY WEATHERED FRACTURE 29.2, 29.4 - MODERATELY WEATHERED FRACTURE 29.8-30.3 - VERTICAL FRACTURE, SLIGHTLY WEATHERED 30.5 - MODERATELY WEATHERED FRACTURE 30.7 - SLIGHTLY WEATHERED FRACTURE 30.5-30.7 - VERTICAL FRACTURE 31.8 - SLIGHTLY WEATHERED FRACTURE 33.0 - SLIGHTLY WEATHERED FRACTURE 33.5, 34.9 - MODERATELY WEATHERED FRACTURE 35.2, 36.8-36.9, 37.2, 38.2 - SLIGHTLY WEATHERED FRACTURE 38.9 - MODERATELY WEATHERED FRACTURE 39.3 - SLIGHT TO MODERATELY WEATHERED 40.1, 40.7 - SLIGHTLY WEATHERED FRACTURE *(continued from previous page)*	RC 10	100 (85)								
			RC 11	100 (61)								
40		Refusal at 25.0 feet. Bottom of borehole at 40.9 feet.										

BORING NUMBER E-7

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/8/08 COMPLETED 10/8/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1266 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		CLAY, SILTY, SOME FINE TO COARSE SAND, TRACE FINE GRAVEL, BROWN, MEDIUM STIFF	SS 1		3-3-4 (7)							
		CLAY, SILTY, SOME FINE TO COARSE SAND, TRACE FINE GRAVEL, BROWN, MEDIUM STIFF	SS 2		3-3-3 (6)							
5		CLAY, SILTY, SOME FINE TO COARSE SAND, BROWN, VERY STIFF	SS 3		8-6-10 (16)			15				53
		CLAY, SILTY, SOME FINE TO COARSE SAND, BROWN, STIFF	SS 4		4-7-8 (15)			15				65
10		SILT, CLAYEY, TRACE FINE TO COARSE ROCK FRAGMENTS, BROWN, HARD	SS 5		6-8-28 (36)							
15		SILT, CLAYEY, DARK GRAY, STIFF	SS 6		6-8-7 (15)			15				53
20												

Refusal at 21.0 feet.
Bottom of borehole at 21.0 feet.

BORING NUMBER E-8

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/8/08 COMPLETED 10/8/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1266.4 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		CLAY, SILTY, LITTLE FINE TO COARSE GRAVEL, REDDISH BROWN AND GRAY, VERY STIFF	SS 1		8-9-11 (20)							
		CLAY, SILTY, TRACE FINE GRAVEL, TAN, STIFF	SS 2		9-5-7 (12)							
5		CLAY, SILTY, LITTLE ORGANICS, LITTLE FINE TO COARSE SAND, TRACE FINE GRAVEL, MIX OF REDDISH BROWN AND GRAY, STIFF	SS 3		3-6-6 (12)							
		CLAY, SILTY, LITTLE FINE TO COARSE SAND, LITTLE BLACK NODULES, MIX OF GRAY AND BROWN, STIFF	SS 4		3-5-5 (10)							
10		CLAY, SILTY, SOME FINE TO COARSE ROCK FRAGMENTS, LITTLE BLACK NODULES, BROWN AND REDDISH BROWN, MEDIUM STIFF	SS 5		4-3-3 (6)							
15		SILT, CLAYEY, BROWN AND REDDISH BROWN, STIFF	SS 6		3-4-6 (10)			16				
20		SHALE										
		Refusal at 23.5 feet. Bottom of borehole at 23.5 feet.	SS 7		50/1"							

BORING NUMBER E-9

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/8/08 COMPLETED 10/8/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1266.6 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SILT, CLAYEY, WITH FINE TO COARSE GRAVEL, SOME BLACK NODULE, BROWN, VERY STIFF	SS 1		6-9-14 (23)							
		SAND, SILTY, TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL, TRACE ORGANICS, BROWN, STIFF	SS 2		6-6-8 (14)			16				47
5		CLAY, SILTY, LITTLE FINE TO COARSE SAND, TRACE BLACK NODULE, GRAY, MEDIUM STIFF	SS 3		4-2-3 (5)			15	38	23	15	
		SILT, CLAYEY, TRACE FINE GRAVEL, BROWN, MEDIUM STIFF	SS 4		3-3-4 (7)							
10		CLAY, SILTY, SOME FINE TO COARSE SAND, LITTLE BLACK NODULES, BROWN, STIFF	SS 5		2-4-6 (10)							
15		SILT, CLAYEY, LITTLE WEATHERED SHALE, BROWN AND TAN, VERY STIFF	SS 6		6-8-10 (18)							
20		SILT, CLAYEY, WITH FINE GRAINED SAND, REDDISH BROWN, MEDIUM STIFF	SS 7		3-2-4 (6)							
25			RC 8	97 (20)								
30			RC 9	91 (51)								
35												

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AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

BORING NUMBER E-9

CLIENT Army National Guard
PROJECT NAME South Gate Road Slope Failure
PROJECT NUMBER 7-7728-0000-0002
PROJECT LOCATION Camp Dawson, West Virginia

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SHALE, LIGHT GRAY										
		27.95, 28.15, 28.5, 29, 29.1, 29.3, 29.5 - MODERATE TO HIGHLY WEATHERED FRACTURE 29.7, 29.8, 30.0 - SLIGHT TO MODERATELY WEATHERED FRACTURE 30.1, 30.2, 30.4 - HIGHLY WEATHERED FRACTURE 31.1, 31.4 - SLIGHTLY WEATHERED FRACTURE 31.6, 31.7 - MODERATELY WEATHERED FRACTURE 31.9, 32.1 - HIGHLY WEATHERED FRACTURE 32.7 - SLIGHTLY WEATHERED FRACTURE 33.4-33.5 - HIGHLY WEATHERED ZONE OF LOSS 3.9, 34.0 - MODERATELY WEATHERED FRACTURE 34.5 - SLIGHTLY WEATHERED FRACTURE 34.7 - MODERATELY WEATHERED FRACTURE 36.5 - SLIGHTLY WEATHERED FRACTURE 38.9, 37.6, 38.1, 38.3, 38.4, 38.6 - MODERATELY WEATHERED FRACTURE 39, 39.3, 39.4, 39.5, 39.6, 39.8 - SLIGHT TO MODERATELY WEATHERED 40.7, 40.9 -41.0 - MODERATELY WEATHERED FRACTURE 41.5, 41.7, 42.0 - MODERATE TO HIGHLY WEATHERED FRACTURE *(continued from previous page)*	RC 10	100 (54)								
40			RC 11	100 (50)								
		Refusal at 27.5 feet. Bottom of borehole at 42.5 feet.										

BORING NUMBER E-10

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/7/08 COMPLETED 10/7/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1268.8 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		GRAVEL, FINE TO COARSE, SOME SILTY CLAY, MEDIUM DENSE	SS 1		6-6-5 (11)							
		CLAY, SILTY, SOME FINE TO COARSE SAND, BROWN, MEDIUM STIFF	SS 2		2-3-5 (8)							
5		CLAY, SILTY, SOME FINE TO COARSE SAND, BROWN AND TAN, SOFT	SS 3		1-2-2 (4)							
		CLAY, SILTY, SOME FINE TO MEDIUM GRAINED SAND, BROWN AND GRAY, SOFT	SS 4		1-1-2 (3)							
10		CLAY, SILTY, LITTLE FINE TO COARSE SAND, BROWN, STIFF	SS 5		2-4-5 (9)							
15		CLAY, SILTY, SOME FINE TO COARSE SAND, SOME FINE TO COARSE ROCK FRAGMENTS, BROWN, HARD	SS 6		4-50/5"							
20		SANDSTONE, HIGHLY WEATHERED										
		SHALE, GRAY, HIGHLY WEATHERED, SOME SILTY CLAY										
25			SS 7		100 (38)							
30			SS 8		94 (34)							
35												

(Continued Next Page)

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

BORING NUMBER E-10

CLIENT Army National Guard
PROJECT NAME South Gate Road Slope Failure
PROJECT NUMBER 7-7728-0000-0002
PROJECT LOCATION Camp Dawson, West Virginia

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SHALE, LIGHT GRAY 27.4- SLIGHTLY WEATHERED FRACTURE 27.5 - MODERATE TO HIGHLY WEATHERED FRACTURE 27.8 - SLIGHTLY WEATHERED FRACTURE 27.9 - HIGHLY WEATHERED, MUD SEAM 28.1 - HIGHLY WEATHERED, MUD SEAM 28.4-28.6 - HIGHLY WEATHERED, MUD SEAM 28.9, 29.0 - MODERATE TO HIGHLY WEATHERED FRACTURE 29.2 - SLIGHTLY WEATHERED FRACTURE 29.4, 29.9 - MODERATE TO HIGHLY WEATHERED FRACTURE 30.2, 30.4 - SLIGHTLY WEATHERED FRACTURE 30.7 - SLIGHT TO MODERATELY WEATHERED FRACTURE 30.7-30.9 - SLIGHTLY WEATHERED FRACTURE 31.0, 31.1, 31.4, 31.6 - HIGHLY WEATHERED, MUD SEAM 32.2, 32.4, 32.7 - MODERATELY WEATHERED FRACTURE 33.0, 33.1, 33.3 - SLIGHTLY WEATHERED FRACTURE 33.5, 33.8, 33.9, 34.1, 34.4, 34.5, 34.6- MODERATELY WEATHERED FRACTURE 34.9 - SLIGHTLY WEATHERED FRACTURE 35.44, 35.7, 35.8 -MODERATELY WEATHERED FRACTURE *(continued from previous page)*	SS 9	100 (100)								
		Refusal at 27.0 feet. Bottom of borehole at 39.0 feet.										

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BORING NUMBER E-11

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AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/7/08 COMPLETED 10/7/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1267.9 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		CLAY, SILTY, LITTLE FINE TO MEDIUM GRAINED SAND, BROWN, MEDIUM STIFF (PROBABLE FILL)	SS 1		5-4-3 (7)							
		CLAY, SILTY, WITH FINE TO COARSE GRAINED SAND, GRAY AND BROWN, MEDIUM STIFF (PROBABLE FILL)	SS 2		3-3-4 (7)							
5		CLAY, SILTY, WITH FINE TO COARSE SAND, LITTLE FINE GRAVEL, BROWN, MEDIUM STIFF (PROBABLE FILL)	SS 3		3-2-3 (5)							
		CLAY, SILTY, LITTLE FINE TO COARSE SAND, SOME ORGANICS, ORGANIC ODOR, DARK GRAY, SOFT	SS 4		2-2-2 (4)							
10		CLAY, SILTY, LITTLE FINE TO COARSE SAND, REDDISH BROWN, STIFF	SS 5		4-4-5 (9)			20	41	23	18	
15		CLAY, SILTY, SOME FINE TO COARSE SAND, SOME BLACK NODULES, TAN, VERY STIFF	SS 6		5-7-9 (16)							
20		CLAY, SILTY, LITTLE FINE TO COARSE SAND, LITTLE BLACK NODULES, TAN, VERY STIFF	SS 7		6-8-11 (19)							
25												

Refusal at 27.0 feet.
Bottom of borehole at 27.0 feet.

BORING NUMBER E-12

AMEC
11003 Bluegrass Parkway Suite 690
Louisville, KY 40299
502-267-0700

CLIENT Army National Guard
PROJECT NUMBER 7-7728-0000-0002
DATE STARTED 10/7/08 COMPLETED 10/7/08
DRILLING CONTRACTOR MATHES
DRILLING METHOD HSA
LOGGED BY MGS
NOTES Dry Hole

PROJECT NAME South Gate Road Slope Failure
PROJECT LOCATION Camp Dawson, West Virginia
GROUND ELEVATION 1267 ft HOLE SIZE 3.25
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SILT, CLAYEY, SOME FINE TO COARSE GRAVEL, LITTLE FINE TO COARSE SAND, TAN, STIFF, DRY	SS 1		6-7-6 (13)							
		SILT, CLAYEY , SOME FINE TO COARSE SAND, TAN, MOIST, STIFF	SS 2		6-5-6 (11)							
5		CLAY, SILTY, SOME FINE TO COARSE GRAINED SAND, TAN, MOIST, STIFF	SS 3		6-6-5 (11)							
		NO RECOVERY	SS 4		8-4-3 (7)							
10		CLAY, SILTY, TAN AND REDDISH BROWN, SOME FINE TO COARSE SAND, LITTLE FINE TO COARSE ROCK FRAGMENTS, MEDIUM STIFF	SS 5		0-2-4 (6)							
15		CLAY, VERY SILTY, REDDISH BROWN, SOME FINE TO COARSE GRAINED SAND, LITTLE FINE TO COARSE ROCK FRAGMENTS, MOIST, STIFF	SS 6		4-5-5 (10)							
20		CLAY, SILTY, BROWN AND TAN, SOME FINE TO COARSE SAND, LITTLE BLACK NODULES, MOIST, HARD	SS 7		9-15-16 (31)							
25												

Refusal at 28.2 feet.
Bottom of borehole at 28.2 feet.

Y	MILS (mm)
B	79 (2.0 mm)
C	109 (2.7 mm)
D	138 (3.5 mm)
E	168 (4.3 mm)
F	188 (4.8 mm)
G	218 (5.5 mm)
H	249 (6.3 mm)
J	280 (7.1 mm)

613-BLANK

SECTION 614
PILING WALLS

614.1 - DESCRIPTION:

This work shall consist of furnishing and placing steel piles in predrilled holes, concrete or grout, backfill and lagging, of the kinds and dimensions designated, in accordance with these provisions and in reasonably close conformity with the lines, grades, dimensions, and locations shown on the Plans or established by the Engineer. Painting of the exposed steel is included.

Careful attention shall be given to assuring the pile wall will tie directly into an existing stable slope. Prior to ordering any materials, the contractor in conjunction with the Engineer shall conduct a project site review in order to verify the limits of the pile wall.

614.2 - MATERIALS:

Materials shall conform to the requirements specified in the following Subsections of Division 700:

MATERIAL	SUBSECTION
Steel Piles and Splices	709.12
Steel Lagging and Wales	709.12
Reinforcing Steel	709.1
Prestressing Steel	709.2
Treated Timber Lagging	710
Portland Cement	701.1
Fine Aggregate	702.1
Fly Ash	707.4

614.3 - DRILLING:

614.4

A drilled hole is required for the buried length of the pile.

A minimum of 1/3 the total pile length or 10 feet (3 m), whichever is greater, is to be placed in bedrock/shale. Deviation from this requirement will be controlled by a Plan note. The total estimated pile length and the depth to the estimated bedrock/shale line are shown on the piling profile. Should the elevation of the actual bedrock/shale vary from the estimated elevation by more than 2.5 feet (0.8 m), the Engineer must approve the hole prior to placement of the pile. The material from the drilled hole shall be removed and disposed of by the Contractor in an approved site.

Particular care must be taken in the drilling operation to avoid deflecting the bit along a sloping bedrock/shale line. To verify proper alignment, the Contractor shall measure and record the vertical alignment of the hole using a plumb bob or other acceptable method.

Preferably, the diameter of the drilled hole shall be a size that will allow the pile, while being slowly lowered into the hole, to reach the bottom of the hole under the impetus of the pile weight. The minimum hole diameter shall be 2 inches (50 mm) larger than the diagonal distance across the pile cross section.

Light tapping (ten blows with at least 3 inches (75 mm) of penetration per blow) with a pile hammer exerting no more than 12,000 ft/lbs (16 kJ) of energy is permitted at the direction of the Engineer to advance the pile past minor obstacles in the hole.

Temporary casing of holes may be needed to maintain an open clean hole through the soil overburden. There will be no additional compensation for temporary casing. The cost of any casing used shall be included in the unit price bid for piling.

614.4 - INSTALLATION OF PILES:

Piles shall be located as shown on the Plans or as directed by the Engineer. Piles shall be installed with the pile center within1 inch (25 mm) of the Plan location. The piles must be prevented from rotating, so that the pile axis is within five degrees of the position shown on the Plans.

The maximum permissible vertical deviation for piles shall be one percent of the total pile length, as measured at the actual pile location.

It is desirable that piles be installed without splicing; however, at the direction of the Engineer splices may be made. Splice lengths at the top of the piles may be butt welded provided the splice lengths are less than the required splice plates. No payment will be made for cut-offs. Welding shall be in accordance with 615.3.16.

Accurate records shall be maintained by the Contractor showing the depth to which each pile was placed, the plumbness, the amount of material used, elevation of bedrock/shale, and any unusual conditions encountered during the pile installation. These records shall be incorporated into the permanent records of the project.

614.5 - CORROSION PROTECTION:

Piles will be protected from corrosion and sealed by the placement of

concrete or grout, from the bottom of the hole to the bottom of the lagging or as directed by the Engineer. Vibration of the concrete or grout is not required. The Contractor shall complete all concrete or grout operations for holes drilled during the work day.

The drilled hole shall be pumped free of water and shall be reasonably free of fall-in soil or other debris prior to the placement of the concrete or grout. The concrete or grout in the bedrock/shale portion of the hole will be pumped or tremied through a pipe beginning at the bottom of the drilled hole. The pipe shall be slowly raised ensuring the pipe end remains at least 2 feet (600 mm) below the surface of the concrete or grout. A means of positively measuring the elevation of the concrete or grout as it is placed shall be provided by the Contractor.

After placing the concrete or grout in the bedrock/shale, the Contractor has the option of either pumping or pouring directly into the hole the remainder of the concrete or grout. Placing the concrete or grout from the bottom of the hole to the bottom of the lagging shall be accomplished in one continuous operation.

The Contractor will inform the Engineer, at the preconstruction conference, as to the type of corrosion protection that will be used. Intermixing of concrete and grout will not be allowed, unless approved by the Engineer.

Concrete shall be in accordance with Section 601, Class B. The job site testing is waived

Grout will be furnished and placed in accordance with the requirements specified herein.

The acceptance sampling and testing of the grout is the responsibility of the Division.

Quality Control of the concrete or grout is there responsibility of the Contractor as designated in Materials Procedure MP 601.03.50. The Contractor shall maintain equipment and qualified personnel, who shall direct all field inspection, sampling, and testing necessary to determine the magnitude of the various properties of the concrete and grout governed by the Specifications and shall maintain these properties within the limits of this Specification. The Quality Control Plan designated in MP 601.03.50 shall be submitted to the Engineer at the pre construction conference. Work shall not begin until the Plan is reviewed for conformance with the contract documents.

The required 7-day compression strength of the grout shall be a minimum of 2,000 psi (14 MPa). Grout which does not attain the 2,000 psi (14 MPa) strength in 7 days but exceeds a strength of 1,600 psi (11 MPa) shall be subject to price reduction based on the percentage of strength attained.

A grout strength test shall consist of testing three 6 in x 12 in (150 mm x 300 mm) cylindrical specimens. The test results shall be the average of the three specimens. One set of three specimens shall be made for each day's operations.

The bid price for the piling with grout compressive strengths greater than or equal to 2,000 psi (14 MPa) will be paid at 100 percent unless the piling installation does not meet Specifications for other reasons. Between 1,600 psi

614.6
(11 MPa) and 2,000 psi (14 MPa) compressive strengths, the cost of the grout will be deducted from the actual grout cost on a proportional basis with 2,000 psi (14 MPa) being 100 percent and 1,600 psi (11 MPa) being zero percent payment. With 1,600 psi (11 MPa) grout, the piling installation would be considered to meet 80 percent of the Specifications and the penalty being zero payment for the grout.

The penalty would involve only the quantity of grout represented by the failing compressive strength results.

The bid price for the piling will be reduced for the piles grouted with grout having less than 1,600 psi (11 MPa) compressive strengths as follows:

A = Compressive strength of grout
B = Total foot (meter) of piling grouted with
C = Unit bid price per foot (meter) of piling
D = Cost of grout (from Contractor)
E = 2,000 psi (14 Mpa)
F = Total penalty

$F = D + [BC - D]\ 10.80 - (A + E)]$

614.6 - PAINTING:

All surfaces from the top of the steel pile, down to and including 2.0 ft. (600 mm) below the top of the anticipated grout line shall be cleaned and painted. The method of surface preparation shall be hand tool cleaning to SSPC-SP-2. The paint system shall consist of one-coat of aluminum epoxy mastic meeting the requirements of 711.12 applied at a minimum dry film thickness of 5 mils (125 μm).

614.7 - LAGGING AND BACKFILLING:

Lagging of the type and size as specified on the Plans shall be installed between the piles. Backfilling and restoration of the roadway template shall be as shown on the Plans.

Timber lagging shall be Grade # 3 or better treated rough cut oak, 3 in (75 mm) wide by 8 in (200 mm) deep for heights up to 11 ft (3.4 m); and for wall heights exceeding 11 ft (3.4 m) the timber lagging shall be double 3 in (75 mm) wide by 8 in (200 mm) deep. The boards shall be cut to their required length prior to preservative treatment.

The timber lagging shall conform to Sections 710.3 and 710.4 of the West Virginia Division of Highways Standard Specifications and shall be CCA treated for soil and fresh water use, as per AWPA C2.

614.8 - METHOD OF MEASUREMENT:

The quantity of piles will be measured in linear feet (meters) of piles installed and accepted for the wall. The quantity of lagging will be measured in square feet (meters) of lagging installed and accepted for the wall.

614.9-BASIS OF PAYMENT:

The quantities will be paid for at the contract unit prices bid for the items listed below, which prices and payments shall be full compensation for furnishing all materials and doing all the work herein prescribed in a workmanlike and acceptable manner, including all labor, tools, equipment, supplies, and incidentals necessary to complete the work. The cost of drilling, concrete, grout, wales, and painting shall be included in the price bid for the piles. The cost of painting and welding steel lagging shall be included in the price bid for steel lagging.

614.10-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
614001-*	"size" STEEL PILE	LINEAR FOOT (METER)
614002-*	STEEL LAGGING, THICKNESS "thickness"	SQUARE FOOT (METER)
614003-*	CONCRETE LAGGING, THICKNESS "thickness"	SQUARE FOOT (METER)
614004-*	TIMBER LAGGING	SQUARE FOOT (METER)

* Sequence number

SUPPLEMENTARY SPECIFICATIONS

The specifications for project shall be the West Virginia Department of Highways, "Standard Specifications, Roadways and Bridges", except as modified herein.

614.1 - DESCRIPTION
Delete the last sentence in the first paragraph

614.3 – DRILLING
Revise the second paragraph to read the following:
"The minimum embedment of the pile length into bedrock shall be designated on the plans. The total estimated pile length and depth to estimated bedrock are shown in the 'Drilled Shaft Schedule' and on the 'Drilled Shaft Profile'. Should the actual elevation vary by more than 2.5 feet, the Engineer must approve the hole prior to placement of the pile. The material from the drilled hole shall be removed and disposed of by the Contractor in an approved site."

Revise portions of the fourth paragraph to state the minimum diameter of the drilled hole shall be as shown on the plans.

614.5 – CORROSION PROTECTION
Revise the first paragraph to indicate that vibration of concrete will be required for the upper ten feet of the drilled shaft.

Delete from paragraph 11 to the end of section 614.5 inclusively. All concrete is expected to reach a minimum 7 day strength of 1,600 psi and 28 day strength of 4,000 psi.

614.6 – PAINTING
Delete this section in its entirety. Painting of the structural steel is not required.

614.7 – LAGGING AND BACKFILLING
Delete paragraphs two and three in this section. Timber lagging is not applicable to this project.

MEASUREMENT AND PAYMENT
LINE ITEM 1 – *Mobilization and Demobilization*
This item will cover the payment for the mobilization and demobilization of all plant and equipment to execute the project. Payment will be made on a LUMP SUM basis.

LINE ITEM 2 – *Clear & Grub*
This item will cover the payment for clearing and grubbing the area of work, of all trees, shrubs, etc. Payment will be made on a PER ACRE basis.

LINE ITEM 3 – *Excavation and Embankment*
This item will cover payment for all excavation and embankment not otherwise included in any other line items on the Bid Form. These items include, but are not limited to, excavation and grading in front of the drilled shaft wall, excavation for the precast concrete lagging, any and all benching that may be required, miscellaneous backfill that may be required, etc. Payment will be made on a LUMP SUM basis.

LINE ITEM 4 – *Erosion & Sediment Control*

This item will cover all erosion and sediment control measures incorporated by the Contractor's approved SWPPP. Payment will be made on a LUMP SUM basis.

LINE ITEM 5 – *Roadway Grading*
This item will cover the scarifiying, mixing and recompacting of the upper 12" of the existing roadbed. Payment for this item will be made on a per CUBIC YARD basis.

LINE ITEM 6 – *Stone Base for Road*
This item will cover the 12" of ABC crushed stone to be placed for the new roadway. Payment for this item will be made on a per TON basis.

LINE ITEM 7 – *30" Diameter Drilled Shafts, Above Bedrock*
This item will cover all means, methods and materials to perform the machine excavation of the material above bedrock at the drilled shaft locations. Also included in this item shall be the concrete fill material, spoil removal, and forming above grade if necessary. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 8 – *30" Diameter Drilled Shafts, Into Bedrock*
This item will cover all means, methods and materials to perform the machine excavation of the material into bedrock at the drilled shaft locations. Also included in this item shall be the concrete fill material and spoil removal. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 9 – *Steel Piles, W18x106*
This item will cover all means, methods and materials to furnish, fabricate and place the steel piles at the proper centerline locations indicated. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 10 – *Steel Piles, W21x111*
This item will cover all means, methods and materials to furnish, fabricate and place the steel piles at the proper centerline locations indicated. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 11 – *Precast Concrete Lagging, 8" Thick*
This item will cover all means, methods and materials to furnish, fabricate and place the 8" thick precast concrete lagging at the proper locations indicated. Payment for this item will be made on a per SQUARE FOOT basis.

LINE ITEM 12 – *Free Draining Backfill*
This item will cover all excavation, furnishing & installation of backfill, compaction necessary and furnishing & installation filter fabric. Payment for this item will be made on a per TON basis.

LINE ITEM 13 – *6" Perforated Pipe*
This item will cover furnishing & installation of the 6" perforated pipe embedded in the free draining backfill. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 14 – *Cable Guardrail*
This item will cover all means, methods and materials to furnish, fabricate and place the cable guardrail at the proper locations indicated. Payment for this item will be made on a per LINEAR FOOT basis.

LINE ITEM 15 - *Seed*
This item will cover all means, methods and materials to furnish and place the seeding over all areas disturbed. Payment for this item will be made on a per ACRE basis.

State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
***West Virginia Code* §21-1D-5**

STATE OF WV

COUNTY OF Kanawha, **TO-WIT:**

I, Kelley D. Thaxton, after being first duly sworn, depose and state as follows:

1. I am an employee of Thaxton Construction Co., Inc. (Company Name); and,

2. I do hereby attest that Thaxton Construction Co., Inc. (Company Name) maintains a valid written drug free workplace policy and that such policy is in compliance with ***West Virginia Code*** §21-1D-5.

The above statements are sworn to under the penalty of perjury.

Thaxton Construction Co., Inc.
(Company Name)

By: Kelley D. Thaxton

Title: Vice President

Date: 4/22/09

Taken, subscribed and sworn to before me this 22nd day of April, 2009

By Commission expires 7-4-11

(Seal)

Official Seal
Notary Public, State of West Virginia
Sharon S. Thaxton
Box 4 White Tail Lane
Charleston, WV 25312
My commission expires July 4, 2011

Sharon S. Thaxton
(Notary Public)

THIS AFFIDAVIT MUST BE SUBMITTED WITH THE BID IN ORDER TO COMPLY WITH WV CODE PROVISIONS. FAILURE TO INCLUDE THE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF THE BID.

Rev March 2009

Bid Item Number	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization and Demobilization	1.00	LS	146,293.00	$146,293.00
2	Clear & Grub	0.25	ACRE	32,000.00	$ 8,000.00
3	Excavation and Embankment	1.00	LS	50,000.00	$ 50,000.00
4	Erosion & Sediment Control	1.00	LS	20,000.00	$ 20,000.00
5	Construction Layout & Staking	1.00	LS	20,000.00	$ 20,000.00
6	Roadway Grading	136.00	CY	100.00	$ 13,600.00
7	Stone Base for Road	272.00	TON	100.00	$ 27,200.00
8	Soil Boring	40.00	LFT	100.00	$ 4,000.00
9	30" Diameter Drilled Shafts, Above Bedrock	481.57	LFT	100.00	$ 48,157.00
10	30" Diameter Drilled Shafts, Into Bedrock	360.00	LFT	300.00	$108,000.00
11	Steel Piles, W18x106	680.00	LFT	45.00	$ 30,600.00
12	Steel Piles, W21x111	200.00	LFT	45.00	$ 9,000.00
13	Precast Concrete Lagging, 8" Thick	2,070.00	SFT	25.00	$ 51,750.00
14	Free Draining Backfill	150.00	TON	50.00	$ 7,500.00
15	6" Perforated Pipe	230.00	LFT	30.00	$ 6,900.00
16	Cable Guardrail	280.00	LFT	150.00	$ 42,000.00
17	Seed	0.50	ACRE	10,000.00	$ 5,000.00
			TOTAL BID		$598,000.00

KT.

Contractor Name: Thaxton Construction Co., Inc.
Address: P.O. Box 13279
Charleston, WV 25360
Date: 4/22/09

Signed: Kelley D. Thaxton
Print Name: Kelley D. Thaxton
Title: Vice President

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	PAGE
DEFK9020	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
JOHN ABBOTT
304-558-2544

VENDOR
*B13150503 304-984-2299
THAXTON CONSTRUCTION CO INC SI
PO BOX 13279

SISSONVILLE WV 25360

SHIP TO
DIV ENGINEERING & FACILITIES
CAMP DAWSON ARMY TRAINING SITE
240 ARMY ROAD

KINGWOOD, WV
26537-1077 304-329-4417

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/06/2009				

BID OPENING DATE: 04/15/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM #01		
				THIS ADDENDUM IS ISSUED TO PROVIDE PRE-BID MEETING MINUTES, ANSWER VENDOR QUESTIONS, ADD A BID FORM FOR VENDORS USE, & PROVIDE THE PRE-BID SIGN-IN SHEET.		
				QUESTIONS: QUESTIONS WILL ACCEPTED NO LATER THAN 4/10/2009,2:00 PM; AND SHALL BE EMAILED TO: JOHN.H.ABBOTT@WV.GOV		
0001	1	LS		962-73		$598,000.00
				RECLAMATION: RESTORATION OF LAND & OTHER PROPERTIES		
				****** THIS IS THE END OF RFQ DEFK9020 ****** TOTAL:		$598,000.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelley D. Thaxton	984-2299	4/22/09

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55-0743840	

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

C&FMO-WVARNG

ADDENDUM NO. 1

Pre-Bid Meeting Minutes

Contract DEFK9020

Engineer Skills Building, Camp Dawson, WV

The following constitutes Pre-bid Meeting Minutes for DEFK9020, Camp Dawson South Road Slip Repair.

A pre-bid meeting was conducted at the site for the referenced project at 1330 hrs 30 MAR 2009. During the pre-bid meeting, LTC Suver welcomed those present for expressing interest in the subject project. Key Owner representatives where introduced and the following agenda items were covered:

1. **ADMINISTRATIVE:**

   a. All present contractors signed in.

   b. The project is a federally funded, State administrated project.

   c. The user of the facility will be the West Virginia Army National Guard.

   d. The Administrator of the contract will be the Construction & Facilities Management Office, WVARNG.

2. **INTRODUCTION:**

   a. LTC Suver outlined key personnel associated with the project and address for the office. LTC Suver was introduced as the Administrative Contracting Officer, and Jeff Franklin as the Project Manager. Phone numbers and address were identified as follows:

   b.

      i. Address
      1703 Coonskin Drive
      Charleston, WV 25311

      ii. LTC Bill Suver Administrative Contracting Officer
      Bill.suver@wv.ngb.army.mil
      (304) 561-6454

iii. Jeff Franklin, Project Manager
Email: jeff.franklin@wv.ngb.army.mil
791-4333 (o) (fax)

c. John Abbott is the buyer for State Purchasing Division. All questions must be submitted in writing to Mr. Abbott, who will distribute for resolution. Direct discussion is **not** authorized with the Engineer, the Facilities Engineer, or the Project Manager. State Wage Rates applies for this project. Bid Opening is set for 4-15- 2009. The contractors were reminded that they must submit the "Drug Free Compliance Affidavit" form with their bid; failure to submit this form will be grounds for automatic disqualification.

3. The Designer of Record, Chris Ramsey, P.E..
   i. Address:
   AMEC Earth & Environmental
   3800 Ezell Road, Suite 100
   Nashville, TN 37211
   Ph: (615) 333-0630

4. LTC Suver discussed security, work hours, access to the site, and temporary facilities. The Contractor will have access to the site from 0700 to 1800 hrs, Monday to Friday. If work hours must be modified, these will be approved on a case-by-case via the Project Manager (CPT Franklin). The contractor is required to provide to the Superintendent, a listing of personnel, which will be gaining access to the site. Superintendence: In accordance with Contract documents, the Contractor must maintain full-time, active superintendent on the job. The contractor will provide a port-a-john for all personnel involved with Construction.

5. Contract Duration 60 days to complete the project after the NTP.

6. All construction activities will be in conjunction with OHSA, Safety and Health Requirements Manual (US Army Corps of Engineers). As noted, the Army safety and health standards mirror OHSA. All construction activities on site will be a hardhat area and marked as such. Cleanup is required daily by each perspective sub and General Contractor: No open dumps of construction materials and no burning on site.

7. LTC Suver discussed the submittal process and encouraged the contractors to stay with the manufacturers outlined in the specifications and any proposed substitution must be submitted prior to bidding.

8. The meeting was opened for Questions by the Contractors. See attached addendum items.

9. LTC Suver closed the meeting and thanked the Contractors for their interest in the project. LTC Suver outlined that the meeting notes will be published through state purchasing, along with clarifications to contract documents. Any questions will be addressed through an Addendum released after the question period has closed. It was also stressed that any further questions between now and bid award must be directed to John Abbott at State Purchasing.

Clarifications from the 3/30/09 Pre-Bid Meeting

1. Specified concrete to be used on this project should be a Class B modified, 4,000 psi in 28 days.
2. Existing concrete rubble onsite and drilling spoils may be disposed of on WVARNG property at designated area, see attached aerial. Erosion and sediment control measures must be followed in this area.
3. All rubbish, clearing & grubbing material, dunnage, etc. must be disposed of at an off site location at the contractor's expense.
4. The subsurface exploration did not extend far enough south, so an interpolated bedrock surface was used. Bid items have been revised to establish the best bidding situation for all.
5. On site materials may be re-used for grading and backfill purposes, as long as compaction criteria can be met. Any clean excess soil or gravel may be dispose of on Camp Dawson as directed by the owner, maximum travel distance 2 miles, one way.

Contractor Questions

Q: The location of the new wall is not referenced off the centerline of the road in the cross sections or typical section. On the location plan sheet there is a 17.8' distance shown from a dashed line, is this from the east ditch line to back of pile?

A: The distance called out on sheet DP-3 is 17'-8", and is measured from the east ditch line to the back of the precast concrete lagging.

Q: Where and how does the 6" drain outlet?

A: The 6" drain starts on the higher elevation part of the wall, STA 13+85, and provides positive drainage down to where it 'daylights' on the lower elevation part of the wall, at STA 11+50. This is indicated on sheet DP-6, Typical Section.

Q: The RFQ states that the contract is to be performed within 60 calendar days after the notice to proceed is received. Will the start of the 60 day time period be modified to begin after obtaining the necessary permits and material as discussed at the pre-bid meeting?

A: The contract period will be based on when the material will be delivered to the site and the contractor can begin the work.

Bid Item Number	Description	Quantity	Unit	Unit Price	Total Price
1	Mobilization and Demobilization	1.00	LS		$ -
2	Clear & Grub	0.25	ACRE		$ -
3	Excavation and Embankment	1.00	LS		$ -
4	Erosion & Sediment Control	1.00	LS		$ -
5	Roadway Grading	136.00	CY		$ -
6	Stone Base for Road	272.00	TON		$ -
7	Soil Boring	40.00	LFT		$ -
8	30" Diameter Drilled Shafts, Above Bedrock	481.57	LFT		$ -
9	30" Diameter Drilled Shafts, Into Bedrock	360.00	LFT		$ -
10	Steel Piles, W18x106	680.00	LFT		$ -
11	Steel Piles, W21x111	200.00	LFT		$ -
12	Precast Concrete Lagging, 8" Thick	2,070.00	SFT		$ -
13	Free Draining Backfill	150.00	TON		$ -
14	6" Perforated Pipe	230.00	LFT		$ -
15	Cable Guardrail	280.00	LFT		$ -
16	Seed	0.50	ACRE		$ -
			TOTAL BID		$ -

Contractor Name: _____

Address: _____

_____

Date: _____

Signed: _____

Print Name: _____

Title: _____

DEFT 9020

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: JL Pretzel Contracting LLC Rep: Jamie Pretzel Email Address: prtzroc@AOL.com	9 Belgian Ext. Bruceton Mills WV 26525	PHONE 304-379-7789 TOLL FREE FAX 304-379-7788
Company: Turman Construction Co. Rep: Tom Hesmond Email Address: NE76Buzz@AOL.Com	PO Box 460 Barboorsville, WV 25504	PHONE 304-525-9485 TOLL FREE FAX 304-525-9181
Company: Bilco Construction Co. Inc Rep: Steve Burkholder Email Address: steve burkholder@frontiernet.net	805 Wisteria Drive South Charleston, WV 25309	PHONE 304-565-3007 TOLL FREE FAX 304-565-3113
Company: ~~STEVE~~ Pro Contracting Inc Rep: Steve Szabo Email Address: Procon.Szabo@yahoo.com	P.O Box 2442 Clarks Burg, WV 26301	PHONE 304 622-2400 TOLL FREE FAX 304-622-2410
Company: Rep: Email Address:		PHONE TOLL FREE FAX

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: J. F. Allen Co. Rep: Chris S. Dean Email Address: Phone 304 472-8890	Rt 33 P O Box 2049 Buckhannon WV. 26201	PHONE TOLL FREE FAX
Company: Thaxton Const Co Inc Rep: Dale Thaxton Email Address: 304 984-2299	PO Box 13229 Charleston WV 25360	PHONE 304 984 2289 TOLL FREE FAX 304 984 2334
Company: Turman Construction Rep: Thomas Hesman Jr Email Address: NE76Buzz@aol.com	P.O. Box 460 Barboursville, WV 25504	PHONE 304-525-9485 TOLL FREE FAX 304-525-9181
Company: JL Pretzel Contracting Rep: Jamie Pretzel Email Address: prtzRoc@AOL.com	9 Belgium Est. Bruceton Mills WV 26525	PHONE 304-379-7289 TOLL FREE FAX 304-379-7288
Company: Rep: Email Address:		PHONE TOLL FREE FAX

(4)

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: WVARNG	1707 Coonskin Drive	PHONE 304 561-6454
Rep: LTC Bill Suver	Charleston WV	TOLL FREE
Email Address: bill.suver@us.army.mil		FAX
Company: AMEC EARTH & ENVIRONMENTAL	3900 EZELL RD	PHONE 615 333 0680
Rep: CHRIS RAMSEY	SUITE 100	TOLL FREE
Email Address: chris.ramsey@amec.com	NASHVILLE, TN 37211	FAX
Company: WVARNG - CFMO	1707 COONSKIN DR	PHONE 304-561-6345
Rep: LTC CRAIG LAMBERT	CHARLESTON, WV 25311	TOLL FREE
Email Address: Craig.Lambert@us.army.mil		FAX
Company: WVARNG - TSC - Engineering	240 Army Rd	PHONE 304.799.4333
Rep: CPT Jeff Franklin	Kingwood, WV 26537	TOLL FREE
Email Address: jeffrey.c.franklin@wvng.ng.army.mil		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: Kanawha Stone Co. Rep: Dave Mathias Email Address: david.mathias@kanawhastone.com	PO Box 583 Nitro, WV 25143	PHONE 304-755-8271 TOLL FREE FAX 304-755-8279
Company: B.K. Mining & Const LLC Rep: Bruce A. Balcan Email Address: B.K. Mining @ [redacted] Global.net	41410 Palmer Rd Belmont OH 43718	PHONE 740-484-1113 TOLL FREE FAX
Company: B.K. Mining & Const LLC Rep: Todd E Balcan Email Address: B.K. Mining @ SBCGLOBAL.NET	41410 Palmer Rd Belmont OH 43718	PHONE 740-484-1113 TOLL FREE FAX
Company: Hawkeye Services Rep: Rock Lewis Email Address: hawkeye@mountain.net	RT1, Box 201-A Terra Alta, WV 26764	PHONE 304 789 6286 TOLL FREE FAX 304 789 6286
Company: Charles E. Bolyard & Son Inc Rep: Beth Bolyard Email Address: cebsinc@verizon.net	125 East Main St Kingwood WV 26537	PHONE 304-329-1330 TOLL FREE FAX 304-329-1571

(5)

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: SHAFT DRILLERS INTERNATIONAL	70 GUM SPRINGS ROAD	PHONE (304) 291-0175
Rep: DOUGLAS BANKS	MORGANTOWN, WV	TOLL FREE
Email Address: dbanks@shaftdrillers.com	26508	FAX (304) 291-8970
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: Green River Group, LLC Rep: Steve Calvert Email Address: SCalvertGRG@AOL.com	P.O. Box 18039, 532 Ashebrooke Sq. Morgantown, WV 26507	PHONE 304-288-1817 TOLL FREE FAX 304-594-3992
Company: ORANGE CONSTRUCTION CORP. Rep: DAVE WARE Email Address: ORANGECONSTR@AOL.COM	170 OLD CHEAT RD. MORGANTOWN, WV 26508	PHONE 304-291-6765 TOLL FREE FAX 304-291-6975
Company: Orange Construction Corp Rep: Dave Boyle Email Address: ORANGECONSTR@AOL.COM	" " 	PHONE 291 6765 TOLL FREE FAX 291 6975
Company: LAURITA EXCAVATING Rep: Jeff FREEMAN Email Address: FREEMAN@LAURITA.COM	302 DENTS RD MORGANTOWN WV. 26501	PHONE 304-296-7531 TOLL FREE FAX 304-292-4606
Company: Rep: Email Address:		PHONE TOLL FREE FAX

4

SIGN IN SHEET

PLEASE PRINT

PRE-BID SIGN- IN SHEET / PLEASE LEAVE A BUSINESS CARD - CORRECTIONS - 2/18/2009; 10:30 AM

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
Company: SHAFT DRILLERS	70 GUM SPRINGS RD	PHONE (304) 291-0175
Rep: DAVE DOUGLASS	MORGANTOWN, WV 26508	TOLL FREE
Email Address: DDOUGLASS@SHAFTDRILLERS.COM		FAX
Company: PRETZEL DRL.	RT 3 BOX 57	PHONE 304-379-7575
Rep: DAVE PRETZEL	BRUCETON MILLS	TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX
Company:		PHONE
Rep:		TOLL FREE
Email Address:		FAX

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	PAGE
DEFK9020	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
JOHN ABBOTT
304-558-2544

VENDOR
*B13150503 304-984-2299
THAXTON CONSTRUCTION CO INC SI
PO BOX 13279

SISSONVILLE WV 25360

SHIP TO
DIV ENGINEERING & FACILITIES
CAMP DAWSON ARMY TRAINING SITE
240 ARMY ROAD

KINGWOOD, WV
26537-1077 304-329-4417

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/13/2009				

BID OPENING DATE: 04/22/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

ADDENDUM #02

THIS ADDENDUM IS ISSUED TO ANSWER VENDOR QUESTIONS, ADD TO, AND MODIFY THE ORIGINAL REQUIREMENTS OF THE SPECIFICATIONS, PER THE ATTACHED DOCUMENTATION; AND EXTEND THE BID OPENING TO 4/22/2009; 1:30 PM

REVISED BID OPENING: 4/22/2009; 1:30 PM

0001	1	LS		962-73		

RECLAMATION: RESTORATION OF LAND & OTHER PROPERTIES

****** THIS IS THE END OF RFQ DEFK9020 ****** TOTAL: $598,000.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Kelly D. Thaxton	984-2299	4/22/09

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Vice President	55-0743840	

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

Contractor Questions

Q: Within addendum #1 Clarification from the pre-bid meetings, #2, it is stated that the onsite rubble can be hauled to an area that is shown on an attached aerial. The attached aerial cannot be found.

A: Please refer to the narrative describing this area included in Addendum #1 and repeated herein.

Q: Should we not have a detail of just what the engineer is wanting for the cable guard rail system?

A: Please refer to the attached five sheet set of drawing number SS-740 of the CASS TL-4 Cable Guardrail system produced by Trinity Highway Products. Provide this system or equivalent. Assume installation will require post option #1.

Q: In the pre-bid meeting we had a discussion of allowing the successful bidder to perform an additional core hole at the upper end of the wall prior to ordering material at the expense of the owner. I see no mention of this in the Addendum #1.

A: A Line Item was added to the bid form for a 40' deep soil boring in Addendum #1.

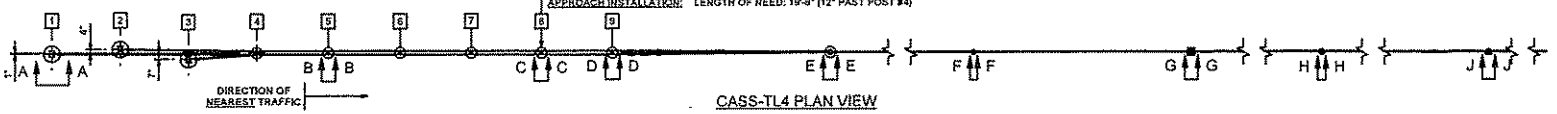
Bid Form Update

The bid form has been updated to include a Lump Sum line item for Construction Layout & Staking. The Owner will provide control points and benchmarks, from which the Contractor will provide all necessary surveying required to complete the Work.

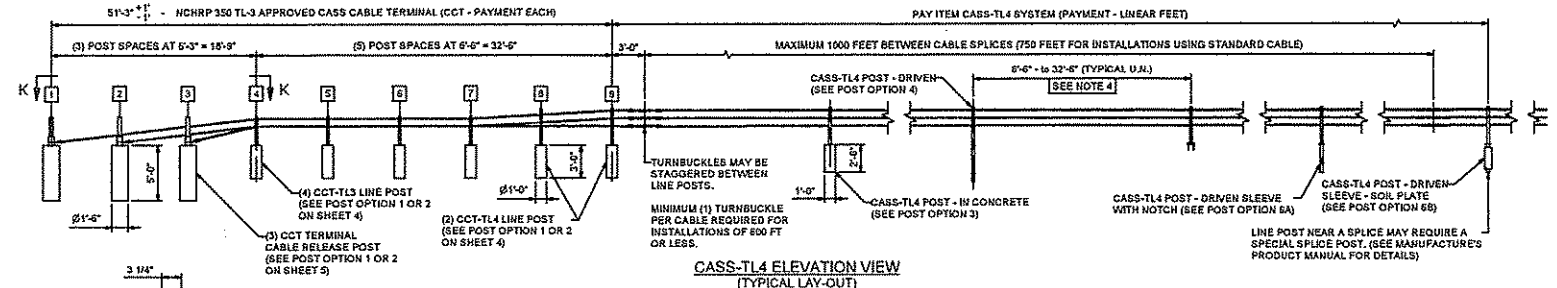
PREFERRED INSTALLATION: LOCATE POST #2 AWAY FROM NEAREST TRAFFIC. SYSTEM HAS BEEN SUCCESFULLY TESTED WITH OPPOSITE INSTALLATION.

LENGTH OF NEED CASS CABLE TERMINAL (CCT): (REQUIRES PROTECTION SEE NOTE 2.)

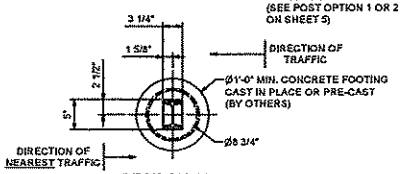
DEPARTURE INSTALLATION: LENGTH OF NEED: 44'-9" (AT POST #8)
APPROACH INSTALLATION: LENGTH OF NEED: 19'-9" (12" PAST POST #4)



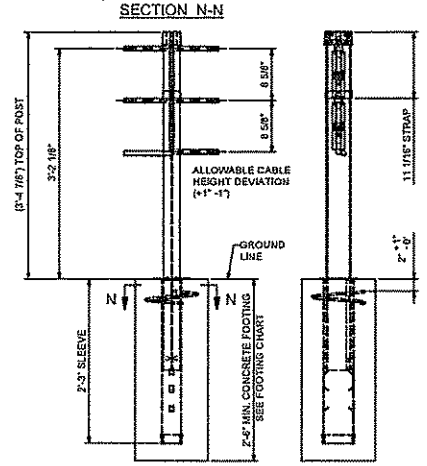
CASS-TL4 PLAN VIEW



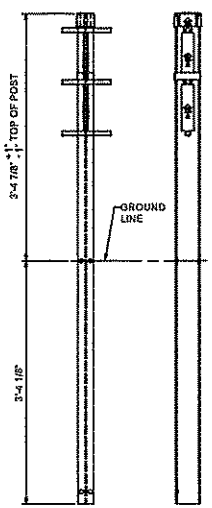
CASS-TL4 ELEVATION VIEW
(TYPICAL LAY-OUT)



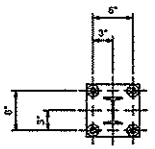
SECTION N-N



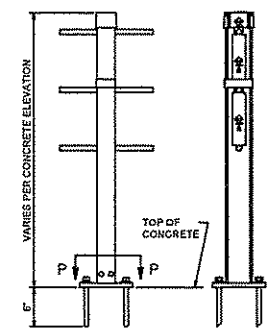
VIEW E-E
(CASS-TL4 POST - IN CONCRETE)
(POST OPTION #3)



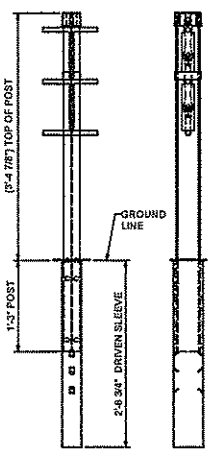
VIEW F-F
(CASS-TL4 POST- DRIVEN
POST OPTION #4)



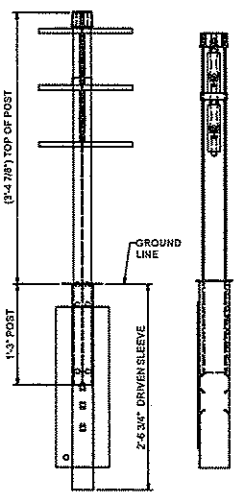
SECTION P-P



VIEW G-G
(CASS-TL4 POST- BASE-PLATED
POST OPTION #5)



VIEW H-H
(CASS-TL4 POST- DRIVEN SLEEVE
POST OPTION #6A)



VIEW J-J
(CASS-TL4 POST- DRIVEN SLEEVE - SOIL PLATE
POST OPTION #6B)

NOTES:

1. CASS-TL4 HAS BEEN SUCCESSFULLY TESTED TO NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 TEST LEVEL 4 (NCHRP 350 TL4) AND ACCEPTED BY FHWA FOR VARIOUS POST SPACINGS. CASS CABLE TERMINAL (CCT) HAS BEEN SUCCESSFULLY TESTED AND APPROVED TO NCHRP TL3.

2. AN NCHRP 350 TL3 APPROVED TERMINAL (CCT) OR CASS-TL4 TRANSITION (VARIOUS) SHALL BE USED ON APPROACH AND DEPARTURE TERMINATIONS WHEN CASS-TL4 IS INSTALLED ON THE NATIONAL HIGHWAY SYSTEM (NHS). IF THE TERMINATION POINT IS LOCATED OUTSIDE THE CLEAR ZONE AND/OR PROTECTED BY OTHER MEANS (CRASHWORTHY BARRIER, TERMINALS, ETC.), A NON-NCHRP 350 TL3 ANCHOR (CCA) MAY BE USED ON APPROACH AND DEPARTURE TERMINATIONS.

3. CASS-TL4 SHALL BE INSTALLED ON SHOULDERS OR MEDIANS WITH SLOPES OF 6:1 OR FLATTER WITHOUT OBSTRUCTIONS, DEPRESSIONS, ETC. THAT MAY SIGNIFICANTLY AFFECT THE STABILITY OF AN ERRANT VEHICLE. GRADING OF SITE AND/OR APPROPRIATE FILL MATERIALS MAY BE REQUIRED. THE DESIGNER/INSTALLER SHALL "FLATTEN" OR "ROUND" VARIOUS TOPOGRAPHICAL INCONSISTENCIES THAT COULD INTERFERE WITH THE ABILITY OF THE INSTALLER TO CONSISTENTLY MAINTAIN THE DESIGN HEIGHT (IN RELATION TO THE TERRAIN) OF THE CABLES. PLEASE CONSULT THE CASS MANUAL(S) FOR INSTALLATIONS IN "DITCH SECTIONS".

4. CASS-TL4 POST SPACING MAY BE MODIFIED TO AVOID OBSTACLES THAT CONFLICT WITH THE INSTALLATION OF CASS-TL4 LINE POSTS. NO POST SPACE CAN EXCEED THE MAXIMUM POST SPACE LIMIT OF 32'-6", OR MAXIMUM POST SPACING ALLOWED BY PROJECT ENGINEER - WHICHEVER IS LESS. REDUCING OR INCREASING POST SPACING AFFECTS DEFLECTION. CASS-TL4 MAY BE LATERALLY TRANSFERRED AT A RATE NOT TO EXCEED 30:1.

5. POST FOUNDATIONS MAY BE DRILLED THROUGH EXISTING PAVEMENT. TRINITY MAY ALLOW THE USE OF ALTERNATE LINE POST FOOTINGS IF SYSTEM IS INSTALLED WITH AN ACCEPTABLE MOWSTRIP APPLICATION - PLEASE CONTACT TRINITY.

6. FOR AESTHETIC PURPOSES TRINITY RECOMMENDS ALL SLEEVES, DRIVEN POSTS, AND LOWER CABLE RELEASE POSTS TO BE INSTALLED REASONABLY PLUMB (APPROXIMATELY 1/8" PER FOOT).

7. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. PRIOR TO TENSIONING THE SYSTEM. TRINITY RECOMMENDS THE CONCRETE TO BE VIBRATED IN ACCORDANCE WITH THE LATEST APPLICABLE AGENCY SPECIFICATION.

8. CASS-TL4 SHALL BE INSTALLED IN WELL-DRAINED, COMPACTED, NCHRP REPORT 350 STANDARD SOILS. IF SOIL DOESN'T MEET THIS CLASSIFICATION, IF SOLID ROCK/CONCRETE IS ENCOUNTERED BELOW GRADE OR IF SOIL IS SUSCEPTABLE TO SEVERE FREEZE/THAW CYCLES, PLEASE CONTACT TRINITY ABOUT ALTERNATE FOOTING DESIGN(S). TRINITY SUGGESTS THE USE OF "MOW STRIPS" FOR EROSION PREVENTION AND EASE OF MAINTENANCE / INSTALLATION.

9. PLEASE SEE SPECIFYING AGENCY (OR MUTCD) FOR PROPER "BARRIER" DELINEATION.

10. PLEASE CONTACT TRINITY OR CONSULT THE DESIGN, INSTALLATION, OR REPAIR MANUAL(S) FOR ADDITIONAL INFORMATION.

TRINITY HIGHWAY PRODUCTS, LLC. EMAIL:
2525 STEMMONS FREEWAY PRODUCT.INFO@TRIN.NET
DALLAS, TX 75207 PHONE: (800) 644-7976

MOWSTRIP DETAIL*			CONCRETE FOOTING CHART		
MOW STRIP	DEPTH	WIDTH	FOOTING	TUBE SLEEVE	REBAR RING
NONE			30" MIN.	27" MIN.	YES
HMA	6" MIN.	3" MIN.	27" MIN.	15" MIN.	NO
HMA	8" MIN.	3" MIN.	24" MIN.	15" MIN.	NO
RC	3" MIN.	3" MIN.	24" MIN.	15" MIN.	NO

CHART DOES NOT APPLY TO TERMINAL POSTS 1 THRU 8
* MOW STRIP OR PAVEMENT
HMA = HOT MIX ASPHALT (NOT RECYCLED ASPHALT PAVEMENT)
RC = REINFORCED CONCRETE (3,000 P.S.I. MINIMUM)

No.	CASS-TL4 POST OPTIONS
1	CCT - TERMINAL POST 1 - 9 - IN CONCRETE
2	CCT - TERMINAL POST 1 - 9 - WITH SOIL PLATE
3	CASS-TL4 POST - IN CONCRETE
4	CASS-TL4 POST - DRIVEN
5	CASS-TL4 POST - BASE-PLATED
6	CASS-TL4 POST - IN DRIVEN SLEEVE
	6A - DRIVEN SLEEVE - WITH NOTCH
	6B - DRIVEN SLEEVE - WITH SOIL PLATE

CASS-TL4
3-CABLE GUARDRAIL
SAFETY SYSTEM

TRINITY HIGHWAY PRODUCTS, LLC

QA LV SPEC:	
SHIPPER WT:	
DRW: E.A.S.	4/11/2008
CHK: G.N.	4/11/2008
SHT: 1 OF 5	SIZE: D
DWG NO: SS-740	REV 3

PROJ: CASS-TL4

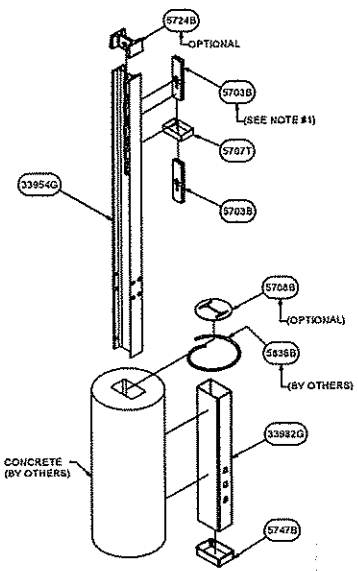
PARTS LIST - CASS-TL4 POST - IN CONCRETE - POST OPTION #3			
QTY	PART No	TITLE	Lbs / Each
2	5703B	CASS-TL4 CABLE SPACER	0.24
1	5707T	CASS-TL - POST STRAP	0.23
1	5708B	SLEEVE COVER - CASS-TL POST	0.11
1	5724B	CASS-TL POST CAP	0.17
1	5747B	SLEEVE CAP - CASS-TL POST	0.15
1	5836B	CONCRETE REINFORCING RING	0.88
1	33982G	27" POST SLEEVE - IN CONCRETE	14.48
1	33954G	CASS-TL4 POST - CONCRETE	34.38

PARTS LIST - CASS-TL4 POST DRIVEN - OPTION #4			
QTY	PART No	TITLE	Lbs / Each
2	5703B	CASS-TL4 CABLE SPACER	0.24
1	5707T	CASS-TL - POST STRAP	0.23
1	5724B	CASS-TL POST CAP	0.17
1	33957G	CASS-TL4 POST - DRIVEN	50.82

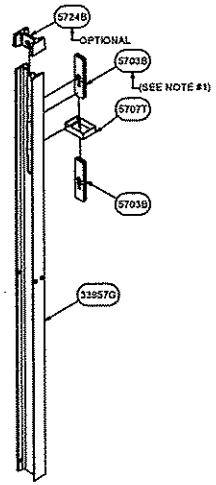
PARTS LIST - CASS-TL4 POST BASE-PLATED - OPTION #5			
QTY	PART No	TITLE	Lbs / Each
4	3300G	5/8" PLAIN WASHER - TYPE B - R - (F844)	0.06
4	3310G	5/8 LOCK WASHER	0.00
4	3361G	5/8" HEX NUT (A563 Gr DH)	0.01
4	5225G	5/8 x 7 1/2" HAS SUPER ROD CHSL PT (A193 B7)	0.62
0.6	5448B	HIT HY 150 MAX EPOXY (HILTI - 00283548)	
2	5703B	CASS-TL4 CABLE SPACER	0.24
1	5707T	CASS-TL - POST STRAP	0.23
1	5724B	CASS-TL POST CAP	0.17
1	33994A	POST-TL4 - BASE PLATED	35.58

PARTS LIST - CASS-TL4 POST - IN DRIVEN SLEEVE - POST OPTION #6A			
QTY	PART No	TITLE	Lbs / Each
2	5703B	CASS-TL4 CABLE SPACER	0.24
1	5707T	CASS-TL - POST STRAP	0.23
1	5708B	SLEEVE COVER - CASS-TL POST	0.11
1	5724B	CASS-TL POST CAP	0.17
1	33954G	CASS-TL4 POST - CONCRETE	34.38
1	33975G	30.75" POST SLEEVE - DRIVEN SHORT POST	16.49

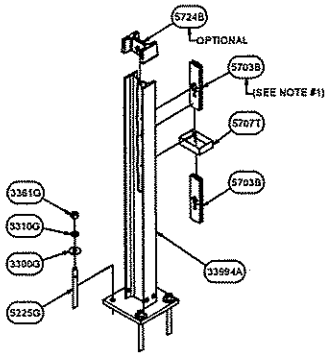
PARTS LIST - PRE-STRETCHED CABLE ASSEMBLIES					
QTY	PART No	TITLE	LENGTH	TERM-1	TERM-2	Lbs / Each
1	5817	CCT CABLE ASSEMBLY-TOP	54'-4"	R.H.T.	L.H.T.	58.3
1	5818	CCT CABLE ASSEMBLY-MID	46'-1"	R.H.T.	L.H.T.	52.3
1	5819	CCT CABLE ASSEMBLY-BOT	41'-10"	R.H.T.	L.H.T.	46.3
1	5867	CCA CABLE ASSEMBLY	25'-0"	R.H.T.	L.H.T.	30.9
1	5816	CABLE ASSEMBLY-INTERIOR	1000'	R.H.T.	L.H.T.	867.0
1	5753	CABLE FIELD SPLICE SECTION	1025'	R.H.T.	NONE	889.0
1	5752	CABLE FIELD SPLICE SECTION	1000'	R.H.T.	NONE	865.0
1	5798	CABLE FIELD SPLICE SECTION	975'	R.H.T.	NONE	840.9
1	5797	CABLE FIELD SPLICE SECTION	950'	R.H.T.	NONE	816.9
1	5796	CABLE FIELD SPLICE SECTION	925'	R.H.T.	NONE	892.8
1	5795	CABLE FIELD SPLICE SECTION	900'	R.H.T.	NONE	868.8
1	5794	CABLE FIELD SPLICE SECTION	875'	R.H.T.	NONE	844.7
1	5793	CABLE FIELD SPLICE SECTION	850'	R.H.T.	NONE	820.7
1	5792	CABLE FIELD SPLICE SECTION	825'	R.H.T.	NONE	796.6
1	5791	CABLE FIELD SPLICE SECTION	800'	R.H.T.	NONE	772.6
1	5790	CABLE FIELD SPLICE SECTION	775'	R.H.T.	NONE	748.5
1	5789	CABLE FIELD SPLICE SECTION	750'	R.H.T.	NONE	724.5
1	5788	CABLE FIELD SPLICE SECTION	725'	R.H.T.	NONE	700.4
1	5787	CABLE FIELD SPLICE SECTION	700'	R.H.T.	NONE	676.4
1	5786	CABLE FIELD SPLICE SECTION	675'	R.H.T.	NONE	652.3
1	5785	CABLE FIELD SPLICE SECTION	650'	R.H.T.	NONE	628.3
1	5784	CABLE FIELD SPLICE SECTION	625'	R.H.T.	NONE	604.2
1	5783	CABLE FIELD SPLICE SECTION	600'	R.H.T.	NONE	580.2
1	5782	CABLE FIELD SPLICE SECTION	575'	R.H.T.	NONE	556.1
1	5781	CABLE FIELD SPLICE SECTION	550'	R.H.T.	NONE	532.1
1	5780	CABLE FIELD SPLICE SECTION	525'	R.H.T.	NONE	508.0
1	5779	CABLE FIELD SPLICE SECTION	500'	R.H.T.	NONE	484.0
1	5778	CABLE FIELD SPLICE SECTION	475'	R.H.T.	NONE	459.8
1	5776	CABLE FIELD SPLICE SECTION	450'	R.H.T.	NONE	435.8
1	5775	CABLE FIELD SPLICE SECTION	425'	R.H.T.	NONE	411.8
1	5769	CABLE FIELD SPLICE SECTION	400'	R.H.T.	NONE	387.6
1	5768	CABLE FIELD SPLICE SECTION	375'	R.H.T.	NONE	363.7
1	5767	CABLE FIELD SPLICE SECTION	350'	R.H.T.	NONE	339.7
1	5766	CABLE FIELD SPLICE SECTION	325'	R.H.T.	NONE	315.7
1	5765	CABLE FIELD SPLICE SECTION	300'	R.H.T.	NONE	291.6
1	5764	CABLE FIELD SPLICE SECTION	275'	R.H.T.	NONE	267.6
1	5763	CABLE FIELD SPLICE SECTION	250'	R.H.T.	NONE	243.5
1	5762	CABLE FIELD SPLICE SECTION	225'	R.H.T.	NONE	219.5
1	5761	CABLE FIELD SPLICE SECTION	200'	R.H.T.	NONE	195.4
1	5760	CABLE FIELD SPLICE SECTION	175'	R.H.T.	NONE	171.4
1	5759	CABLE FIELD SPLICE SECTION	150'	R.H.T.	NONE	147.3
1	5758	CABLE FIELD SPLICE SECTION	125'	R.H.T.	NONE	123.3
1	5757	CABLE FIELD SPLICE SECTION	100'	R.H.T.	NONE	99.2
1	5756	CABLE FIELD SPLICE SECTION	75'	R.H.T.	NONE	75.2
1	5755	CABLE FIELD SPLICE SECTION	50'	R.H.T.	NONE	51.1
1	5754	CABLE FIELD SPLICE SECTION	25'	R.H.T.	NONE	27.1
1	5840	CABLE FIELD REPAIR SECTION	5'	R.H.T.	L.H.T.	10.8



CASS-TL4 POST - IN CONCRETE
(POST OPTION #3 - CAST IN PLACE)



CASS-TL4 POST - DRIVEN
(POST OPTION #4 - DRIVEN)



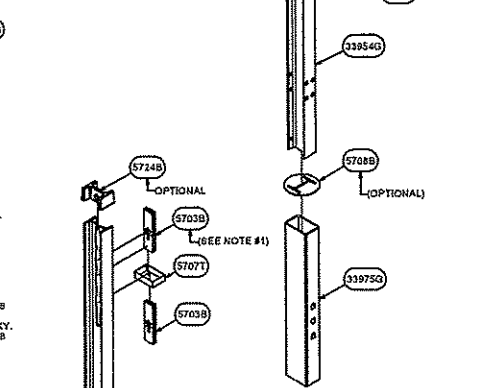
CASS-TL4 POST - BASE-PLATED
(POST OPTION #5 - BASE-PLATED)

ANCHOR OPTIONS:
MIN. EMBEDMENT IN 3,000 P.S.I. CONCRETE = 6".
MIN. PULLOUT STRENGTH = 10,000 lbs.

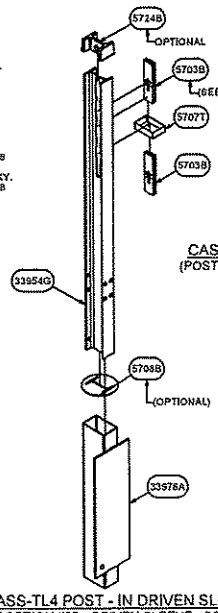
1: 5/8 ADHESIVE ANCHORING SYSTEM.
(4 EACH 3300G, 3310G, 3361G & 5225G) & 0.6 EACH 5448B

2: 5/8 x 8" ALL THREADED ROD (A449) WITH EPOXY.
(4 EACH 3300G, 3310G, 3361G & 5722G) & 0.6 EACH 5448B

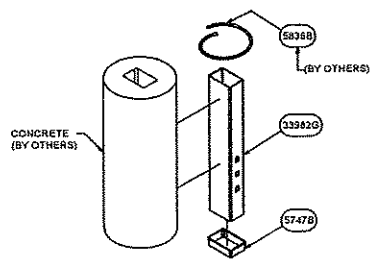
3: 5/8 MECHANICAL ANCHOR. (BY OTHERS)



CASS-TL4 POST - IN DRIVEN SLEEVE
(POST OPTION #6A - DRIVEN SLEEVE - NOTCH)

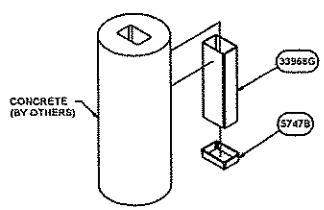


CASS-TL4 POST - IN DRIVEN SLEEVE
(POST OPTION #6B - DRIVEN SLEEVE - SOIL PLATE)



CONCRETE FOOTING ASSEMBLY
(POST OPTION #3 - PRE-CAST OPTION)

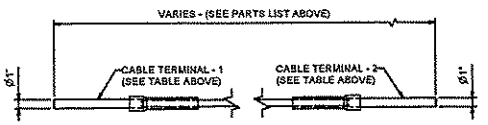
PARTS LIST - PRE-CAST CONCRETE FOOTING - OPTION #3			
QTY	PART No	TITLE	Lbs / Each
1	5747B	SLEEVE CAP - CASS-TL POST	0.15
1	5836B	CONCRETE REINFORCING RING	0.88
1	33982G	27" POST SLEEVE - IN CONCRETE	14.48



CONCRETE FOOTING ASSEMBLY
(INSTALLED IN QUALIFYING MOW STRIP SEE CHART SHEET 1)

PARTS LIST - CONCRETE FOOTING IN MOW STRIP OR PAVEMENT			
QTY	PART No	TITLE	Lbs / Each
1	5747B	SLEEVE CAP - CASS-TL POST	0.15
1	33965G	15" POST SLEEVE - CONCRETE POST	8.00

PARTS LIST - CASS-TL4 POST - IN DRIVEN SLEEVE - POST OPTION #6B			
QTY	PART No	TITLE	Lbs / Each
2	5703B	CASS-TL4 CABLE SPACER	0.24
1	5707T	CASS-TL - POST STRAP	0.23
1	5708B	SLEEVE COVER - CASS-TL POST	0.11
1	5724B	CASS-TL POST CAP	0.17
1	33954G	CASS-TL4 POST - CONCRETE	34.38
1	33976A	30.75" CASS-TL3 POST SLEEVE w/ SOIL PLATE	30.08



PRE-STRETCHED CABLE ASSEMBLY

NOTE:

FOR THE STANDARD FIELD SPLICE SECTIONS ABOVE, SUPPLY (1) RIGHT HAND THREADED STUD ASSEMBLY 5910G EACH.

NOTES:

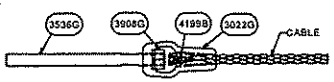
1. IN LIEU OF BLACK SPACER 5703B SUPPLY YELLOW REFLECTIVE SPACER 5705B OR WHITE REFLECTIVE SPACER 5705B. (AS REQUIRED PER PROJECT PLANS)
2. AT CASS-TL4 POST LOCATION NEAREST TO A CABLE SPLICE, SUPPLY A SPLICE INTERFERENCE POST.
   LONG SPLICE POST 33984G IN LIEU OF LONG CASS-TL4 POST 33957G
   SHORT SPLICE POST 33974G IN LIEU OF SHORT CASS-TL4 POST 33954G
3. IF REQUIRED PER PROJECT PLANS SUPPLY:
   CABLE PULLING TOOL 5559B
   CABLE TENSION METER 5878B
   CABLE THERMOMETER 5709B

CASS-TL4
3-CABLE GUARDRAIL
SAFETY SYSTEM

TRINITY HIGHWAY PRODUCTS, LLC

PROJ: CASS-TL4

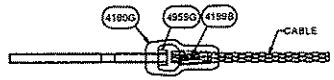
GALV SPEC:
SHIPPING WT:
DRW: E.A.S. 4/11/2008
CHK: D.N. 4/11/2008
SHT: 2 OF 5
SIZE: D
DWG NO: SS-740
REV: 3



1" CABLE FIELD SPLICE - 5909G & 5910G

(5910G SHOWN, 5909G SIMILAR)

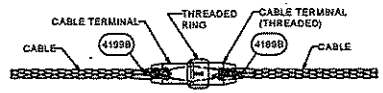
PARTS LIST - 5910G			
QTY	PART No	TITLE	Lbs / Each
1	3022G	1" CABLE END CASTING	0.56
1	3536G	1" STUD FLATTENED - R.H.T.	2.88
1	3908G	1" HEAVY HEX NUT (A563 DH)	0.47
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



3/4" CABLE FIELD SPLICE - 5634G & 5635G

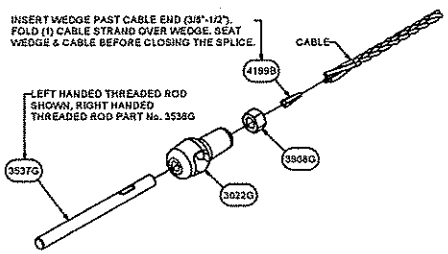
(5634G SHOWN, 5635G SIMILAR)

PARTS LIST - 5634G			
QTY	PART No	TITLE	Lbs / Each
1		3/4" STUD FLATTENED - L.H.T.	1.62
1	4199G	CABLE END CASTING	3.78
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08
1	4959G	3/4" HEAVY SQUARE NUT (A563)	0.26



TORPEDO CABLE SPLICE - 4099G

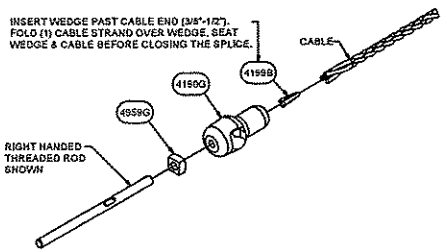
PARTS LIST - 4099G			
QTY	PART No	TITLE	Lbs / Each
1		CABLE TERMINAL - THREADED	1.76
1		CABLE TERMINAL	1.52
1		RING - THREADED	-0.96
2	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



ASSEMBLY - 1" CABLE FIELD SPLICE - 5909G

(5909G SHOWN, 5910G SIMILAR)

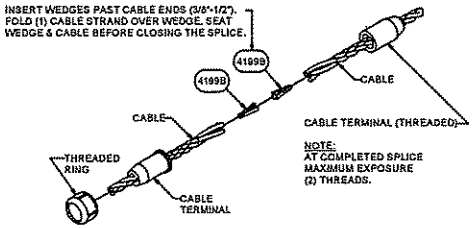
PARTS LIST - 5909G			
QTY	PART No	TITLE	Lbs / Each
1	3022G	1" CABLE END CASTING	0.56
1	3537G	1" STUD FLATTENED - L.H.T.	2.88
1	3908G	1" HEAVY HEX NUT (A563 DH)	0.47
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



ASSEMBLY - 3/4" CABLE FIELD SPLICE - 5635G

(5635G SHOWN, 5634G SIMILAR)

PARTS LIST - 5635G			
QTY	PART No	TITLE	Lbs / Each
1		3/4" STUD FLATTENED - R.H.T.	1.62
1	4199G	CABLE END CASTING	3.78
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08
1	4959G	3/4" HEAVY SQUARE NUT (A563)	0.26

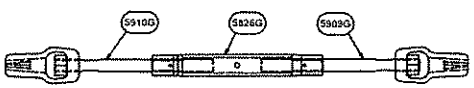


ASSEMBLY - TORPEDO CABLE SPLICE 4099G

CASS TEMPERATURE & TENSION CHART (NEAREST 100 LB/F)		
FAHRENHEIT DEGREES	STD. CABLE LB/FORCE	PRE-STRETCHED LB/FORCE
<= -15	8800	7500
-10	8600	7300
-5	8400	7100
0	8200	7000
5	8000	6800
10	7800	6600
15	7600	6500
20	7400	6300
25	7200	6100
30	7000	6000
35	6800	5800
40	6600	5600
45	6400	5500
50	6200	5300
55	6000	5100
60	5900	5000
65	5600	4800
70	5400	4600
75	5200	4500
80	5000	4300
85	4800	4100
90	4600	4000
95	4400	3800
100	4200	3600
105	4000	3500
110	3800	3300
115	3600	3100
120	3400	3000
125	3200	2800
130	3000	2700
135	2800	2600
140	2700	2500
145	2500	2400
150	2400	2300
160	2200	2100
170	2000	1900
180	1800	1700
190	1600	1500
200	1400	1300

ALLOWABLE DEVIATION FROM CHART IN TANGENT SECTIONS: +800, -200 POUNDS/FORCE.

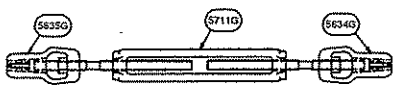
CABLE TENSION READINGS ARE TYPICALLY HIGHER IN CURVED CABLE SECTIONS.



1" CABLE SPLICE - 5633G

(CLOSED BODY STYLE)

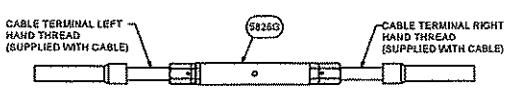
PARTS LIST - 5633G				
QTY	PART No	ITEM	TITLE	Lbs / Each
1	5826G	1	1" CASS TURNBUCKLE CLOSED BODY STYLE	4.81
1	5909G	2	1" STUD ASSEMBLY L.H.T.	3.99
1	5910G	3	1" STUD ASSEMBLY R.H.T.	3.99



3/4" CABLE SPLICE - 5698G

(OPEN BODY STYLE)

PARTS LIST - 5698G			
QTY	PART No	TITLE	Lbs / Each
1	5634G	3/4" STUD ASSEMBLY L.H.T.	5.74
1	5635G	3/4" STUD ASSEMBLY R.H.T.	5.74
1	5711G	3/4" TURNBUCKLE OPEN BODY STYLE	10.68



1" TURNBUCKLE - 5826G

(CLOSED BODY STYLE)

PARTS LIST - 5826G				
QTY	PART No	ITEM	TITLE	Lbs / Each
1	5826G	1	1" CASS TURNBUCKLE CLOSED BODY STYLE	4.81

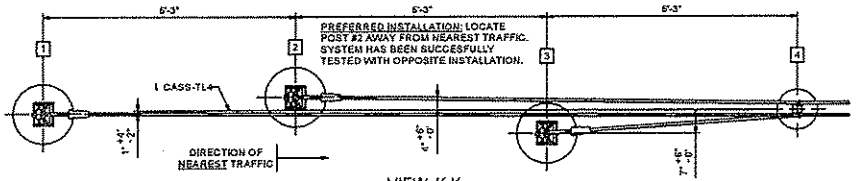
NOTE:

1. TURNBUCKLES SHALL BE INSTALLED WITH A MINIMUM OF 1-1/2" THREAD ENGAGEMENT. TO ALLOW FOR MAINTENANCE/REPAIR ADJUSTMENTS AT A LATER DATE, TRINITY SUGGESTS INSTALLER UTILIZE NO MORE THAN 4" THREAD ENGAGEMENT.

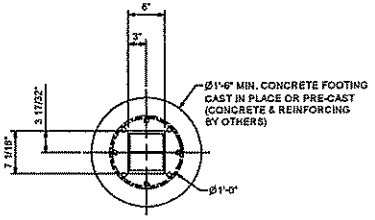
2. WHEN CUTTING CABLE LENGTHS IN THE FIELD FROM CABLE REELS, IT MAY BE PERMISSIBLE TO UTILIZE A CABLE TORPEDO SPLICE (4099G) BETWEEN TURNBUCKLES. DO NOT USE FOR CABLE LENGTH SHORTER THAN 100'. PLEASE CONTACT TRINITY, CONSULT TRINITY'S MANUAL OR SPECIFYING AGENCY TO DETERMINE IF APPROPRIATE FOR SPECIFIC APPLICATION.

CASS-TL4 3-CABLE GUARDRAIL SAFETY SYSTEM	QA/V SPEC:
	SHIPPING WT:
	DRW: E.A.S. 4/11/2008
	CHK: D.H. 4/11/2008
	SHT: 3 OF 5 SIZE: D
TRINITY HIGHWAY PRODUCTS, LLC	DWG NO: SS-740 REV: 3

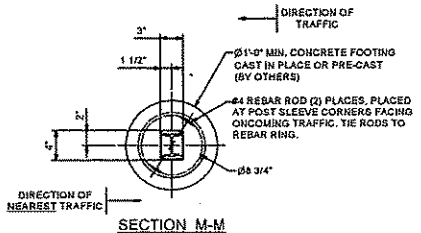
PROJ: CASS-TL4



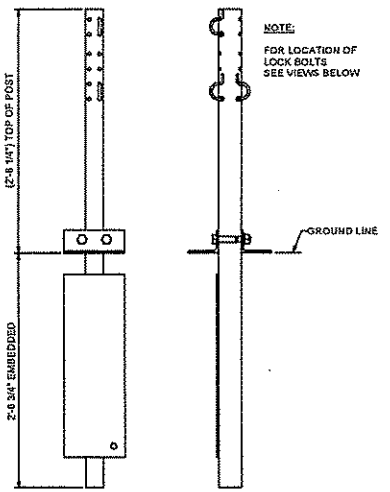
VIEW K-K
(OFFSETS FROM CASS-TL4 CENTERLINE)



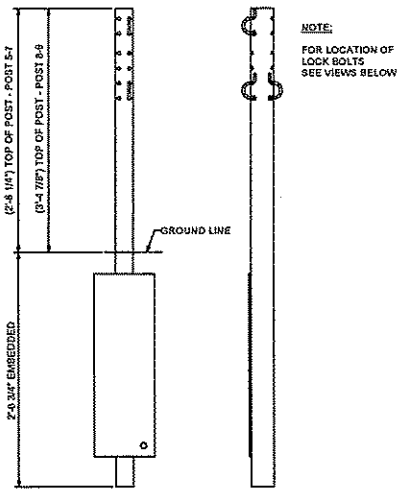
SECTION L-L



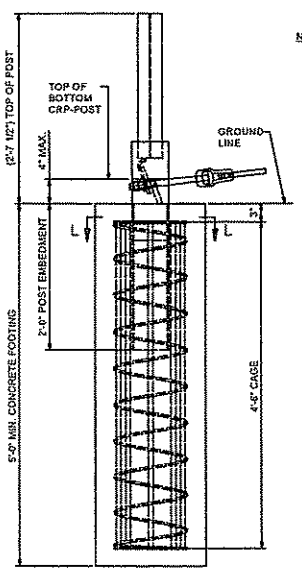
SECTION M-M



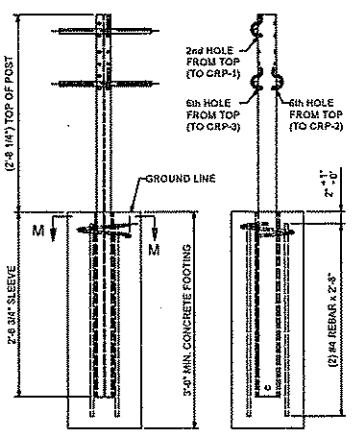
CCT TERMINAL POST
(CCT POST 4)
(POST OPTION 2 SHOWN)



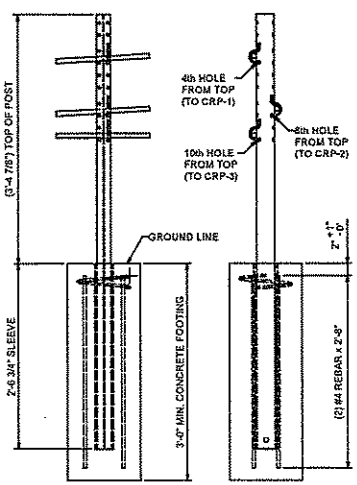
CCT TERMINAL POST
(CCT - POST 5 - 9)
(POST OPTION #2 SHOWN)



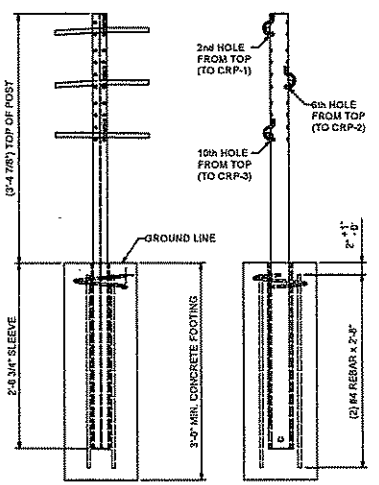
VIEW A-A
(CABLE RELEASE POST 1-3)



VIEW B-B
(POST 4-7)
(POST OPTION #1 SHOWN)



VIEW C-C
(POST 8)
(POST OPTION #1 SHOWN)



VIEW D-D
(POST 9)
(POST OPTION #1 SHOWN)

CASS-TL4 3-CABLE GUARDRAIL SAFETY SYSTEM	GALV SPEC:
	SHIPPING WT:
	DRW: E.A.S. 4/11/2008
	CHK: G.N. 4/11/2008
	SHT: 4 OF 5 SIZE: D
TRINITY HIGHWAY PRODUCTS, LLC	DWG NO: SS-740 REV: 3
PROJ: CASS-TL4	

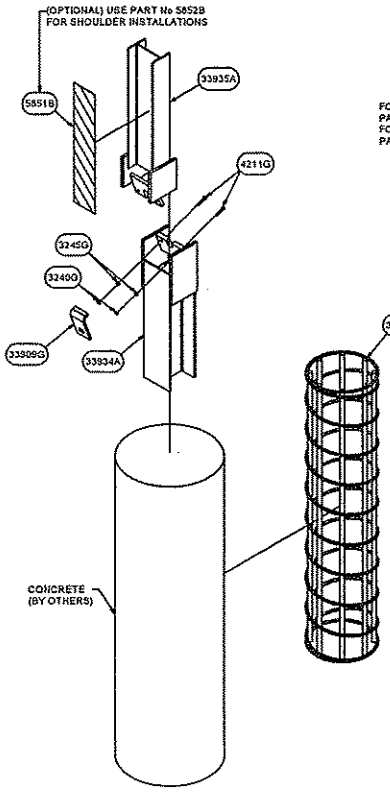
7

PARTS LIST - CCT CABLE RELEASE POST No. 1-3 - IN CONCRETE			
QTY	PART No	TITLE	Lbs / Each
2	3240G	5/16 FLAT WASHER (F844)	0.00
2	3245G	5/16 HEX NUT (A563)	0.01
2	4211G	5/16 HEX BOLT x 1 3/4" (A307)	0.05
1	5851B	REFLECTOR - MEDIAN - YELLOW	0.10
1	33909G	CASS CABLE BRACKET	1.92
1	33916B	REINFORCING CAGE - CRP POST	68.67
1	33934A	CRP - LOWER POST	51.50
1	33935A	CRP - UPPER POST	31.57

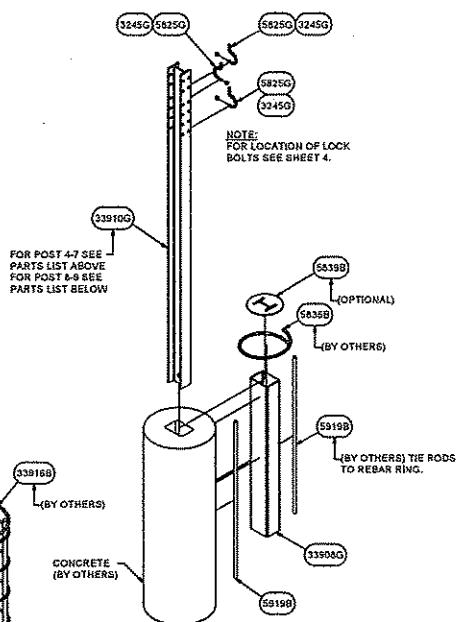
ALL HARDWARE FOR THE CCT CAN BE ORDERED AS ONE PACKAGE:

PART No. 335700: (1) SET OF TERMINAL HARDWARE FOR 1" CABLE FITTINGS.
PART No. 335550: (2) SETS OF TERMINAL HARDWARE FOR 1" CABLE FITTINGS.
PART No. 335510: (1) SET OF TERMINAL HARDWARE FOR 3/4" CABLE FITTINGS.
PART No. 335910: (2) SETS OF TERMINAL HARDWARE FOR 3/4" CABLE FITTINGS.

PARTS LIST - CCT TERMINAL POST No. 4-7 - IN CONCRETE			
QTY	PART No	TITLE	Lbs / Each
3	3245G	5/16 DIA. HEX NUT (A563)	0.01
3	5825G	CABLE LOCK BOLT (A307)	0.12
1	5839B	CONCRETE REINFORCING RING	0.88
1	5839B	SLEEVE COVER - 53 ANCHOR POST	0.11
2	5919B	#4 REBAR - TERMINAL POST	1.78
1	33908G	SLEEVE - TERMINAL LINE POST	13.80
1	33910G	350-TL3 TERMINAL POST	28.63



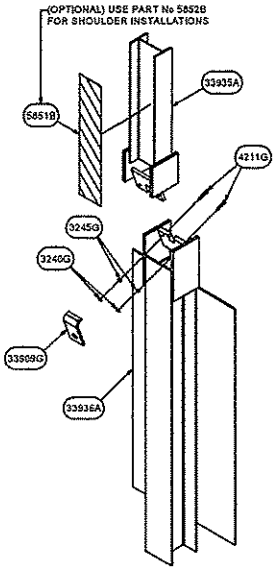
CRP TERMINAL POST - IN CONCRETE
(CCT TERMINAL POST 1 - 3)
(POST OPTION #1 SHOWN)



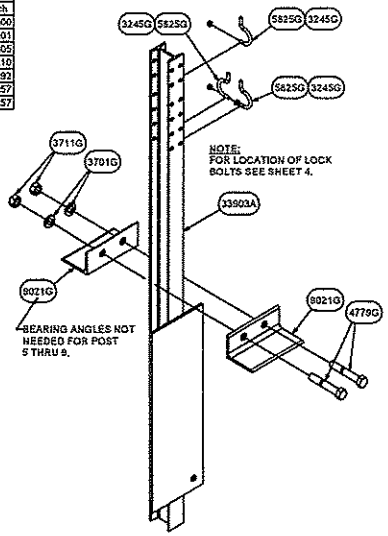
TERMINAL LINE POST - IN CONCRETE
(CCT TERMINAL POST 4 - 7)
(POST OPTION #1 SHOWN)

PARTS LIST - CCT TERMINAL POST No. 8-9 - IN CONCRETE			
QTY	PART No	TITLE	Lbs / Each
3	3245G	5/16 DIA. HEX NUT (A563)	0.01
3	5825G	CABLE LOCK BOLT (A307)	0.12
1	5835B	CONCRETE REINFORCING RING	0.88
1	5839B	SLEEVE COVER - 53 ANCHOR POST	0.11
2	5919B	#4 REBAR - TERMINAL POST	1.78
1	33908G	SLEEVE - TERMINAL LINE POST	13.80
1	33955G	350-TL4 TERMINAL POST	32.42

PARTS LIST - CCT CABLE RELEASE POST No. 1-3 - DRIVEN			
QTY	PART No	TITLE	Lbs / Each
2	3240G	5/16 FLAT WASHER (F844)	0.00
2	3245G	5/16 HEX NUT (A563)	0.01
2	4211G	5/16 HEX BOLT x 1 3/4" (A307)	0.05
1	5851B	REFLECTOR - MEDIAN - YELLOW	0.10
1	33909G	CASS CABLE BRACKET	1.92
1	33935A	CRP - UPPER POST	31.57
1	33936A	CRP - LOWER POST	176.57



CRP TERMINAL POST - DRIVEN
(CCT TERMINAL POST 1 - 3)
(POST OPTION #2 SHOWN)

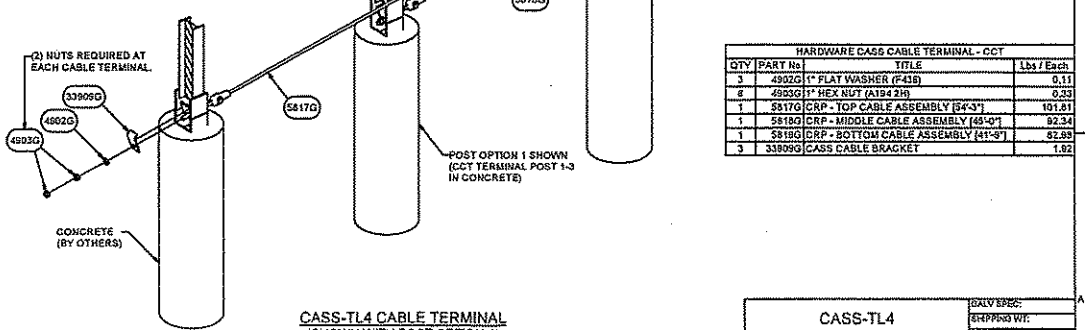


TERMINAL LINE POST - WITH SOIL PLATE
(CCT TERMINAL POST - 4)
(POST OPTION #2 SHOWN)

PARTS LIST - CCT TERMINAL POST No. 4 - WITH SOIL PLATE			
QTY	PART No	TITLE	Lbs / Each
3	3245G	5/16 DIA. HEX NUT (A563)	0.01
2	3701G	3/4 FLAT WASHER (F436)	0.01
2	3711G	3/4 HEX NUT (A194 2H)	0.02
2	4779G	3/4 HEX BOLT x 4 1/2" (A325)	0.05
3	5825G	CABLE LOCK BOLT (A307)	0.12
2	9021G	BEARING ANGLE (A36)	3.81
1	33903A	350-TL3 TERMINAL POST w/ SOIL PLATE	42.25

PARTS LIST - CCT TERMINAL POST No. 5-7 - WITH SOIL PLATE			
QTY	PART No	TITLE	Lbs / Each
3	3245G	5/16 DIA. HEX NUT (A563)	0.01
3	5825G	CABLE LOCK BOLT (A307)	0.12
1	33903A	350-TL3 TERMINAL POST w/ SOIL PLATE	42.25

PARTS LIST - CCT TERMINAL POST No. 8-9 - WITH SOIL PLATE			
QTY	PART No	TITLE	Lbs / Each
3	3245G	5/16 DIA. HEX NUT (A563)	0.01
3	5825G	CABLE LOCK BOLT (A307)	0.12
1	33989A	350-TL4 TERMINAL POST w/ SOIL PLATE	46.02



CASS-TL4 CABLE TERMINAL
(SHOWN WITH POST OPTION 1)

HARDWARE CASS CABLE TERMINAL - CCT			
QTY	PART No	TITLE	Lbs / Each
3	4902G	1" FLAT WASHER (F436)	0.11
6	4903G	1" HEX NUT (A194 2H)	0.33
1	5817G	CRP - TOP CABLE ASSEMBLY [54'-3"]	101.81
1	5818G	CRP - MIDDLE CABLE ASSEMBLY [45'-0"]	92.34
1	5819G	CRP - BOTTOM CABLE ASSEMBLY [41'-9"]	82.88
3	33909G	CASS CABLE BRACKET	1.92

CASS-TL4
3-CABLE GUARDRAIL
SAFETY SYSTEM

TRINITY HIGHWAY PRODUCTS, LLC

GALV ENG:
SHIPPING WT:
DRW: E.A.S. 4/11/2008
CHK: D.H. 4/11/2008
SHT: 5 OF 5 SIZE: D
DWG NO: SS-740 REV: 3

PROJ: CASS-TL4

Division of Engineering &
Agency Facilities
REQ.P.O# DEFK9020

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Thaxton Construction Co., Inc. of Sissonville of P.O. Box 13279, Charleston, WV 26360, as Principal, and International Fidelity Insurance Company of Newark, New Jersey, a corporation organized and existing under the laws of the State of Connecticut with its principal office in the City of Newark, as Surety, are held and firmly bound unto the State of West Virginia, as Obligee, in the penal sum of five percent of bid ($ 5%) for the payment of which, well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for Reclamation: restoration of land & other properties. Contract to repair the road slip at the West Virginia National Guard, Camp Dawson, Kingwood, West Virginia

NOW THEREFORE,

(a) If said bid shall be rejected, or

(b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this 22nd day of April, 20 09.

Principal Corporate Seal

Thaxton Construction Co., Inc. of Sissonville
(Name of Principal)

By _____
(Must be President or Vice President)

President
(Title)

Surety Corporate Seal

International Fidelity Insurance Company
(Name of Surety)

By: _____
Attorney-in-Fact

IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance. Corporate seals must be affixed, and a power of attorney must be attached.

Tel (973) 624-7200

POWER OF ATTORNEY
INTERNATIONAL FIDELITY INSURANCE COMPANY

HOME OFFICE: ONE NEWARK CENTER, 20TH FLOOR
NEWARK, NEW JERSEY 07102-5207

FOR BID BOND/RIDER/CONSENTS/AFFIDAVITS

KNOW ALL MEN BY THESE PRESENTS: That INTERNATIONAL FIDELITY INSURANCE COMPANY, a corporation organized and existing laws of the State of New Jersey, and having its principal office in the City of Newark, New Jersey, does hereby constitute and appoint

C. DAVID THOMAS, RICHARD L. HIGGINBOTHAM, ROSEANN B. DYE-SMALLEY, BUNNIE MARIE PERRINE, JEFFERY O'DELL, ROBIN HUBBARD-SHERROD

Charleston, WV.

its true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, stature, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said INTERNATIONAL FIDELITY INSURANCE COMPANY, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office.

This Power of Attorney is executed, and may be revoked, pursuant to and by authority of Article 3-Section 3, of the By-Laws adopted by the Board of Directors of INTERNATIONAL FIDELITY INSURANCE COMPANY at a meeting called and held on the 7th day of February, 1974.

The President or any Vice President, Executive Vice President, Secretary or Assistant Secretary, shall have power and authority

(1) To appoint Attorneys-In-fact, and to authorize them to execute on behalf of the Company, and attach the Seal of the Company thereto, bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and,

(2) To remove, at any time, any such attorney-in-fact and revoke the authority given.

Further, this Power of Attorney is signed and sealed by facsimile pursuant to resolution of the Board of Directors of said Company adopted at a meeting duly called and held on the 29th day of April, 1982 of which the following is a true excerpt:

Now therefore the signatures of such officers and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

INTERNATIONAL FIDELITY INSURANCE COMPANY CORPORATE SEAL 1904 NEW JERSEY

IN TESTIMONY WHEREOF, INTERNATIONAL FIDELITY INSURANCE COMPANY has caused this instrument to be signed and its corporate seal to be affixed by its authorized officer, this 16th day of October, A.D. 2007.

INTERNATIONAL FIDELITY INSURANCE COMPANY

STATE OF NEW JERSEY
County of Essex

Secretary

On this 16th day of October 2007, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said the he is the therein described and authorized officer of the INTERNATIONAL FIDELITY INSURANCE COMPANY; that the seal affixed to said instrument is the Corporate Seal of said Company; that the said Corporate Seal and his signature were duly affixed by order of the Board of Directors of said Company.

JOSE A. MARQUEZ JR. NOTARY PUBLIC NEW JERSEY

IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at the City of Newark, New Jersey the day and year first above written.

A NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Nov. 21, 2010

CERTIFICATION

I, the undersigned officer of INTERNATIONAL FIDELITY INSURANCE COMPANY do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the By-Laws of said Company as set forth in said Power of Attorney, with the ORIGINALS ON IN THE HOME OFFICE OF SAID COMPANY, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect

IN TESTIMONY WHEREOF, I have hereunto set my hand this 22nd day of April, 2009

Maria H. Franco

Assistant Secretary