

ESTIMATED QUANTITIES					
REF. NO.	FROM	TO	SIDE	601	602
				ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	CONCRETE MASONRY
				CU YD	CU YD
D-1	783+61	783+94	RT	3.4	
D-2	783+61	783+94	C		225
D-3	783+94	784+00	LT	3.4	
E-1	783+94	784+00	LT	29	
TOTALS CARRIED TO CULVERT SUB-SUMMARY				29	6.8

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 364 AC.
Q ₂₀	= 260 CFS
Q ₁₀₀	= 303 CFS
H _{W50}	= 1146.5
H _{W100}	= 1148.2
V ₅₀	= 5.2 FPS
V ₁₀₀	= 7.2 FPS

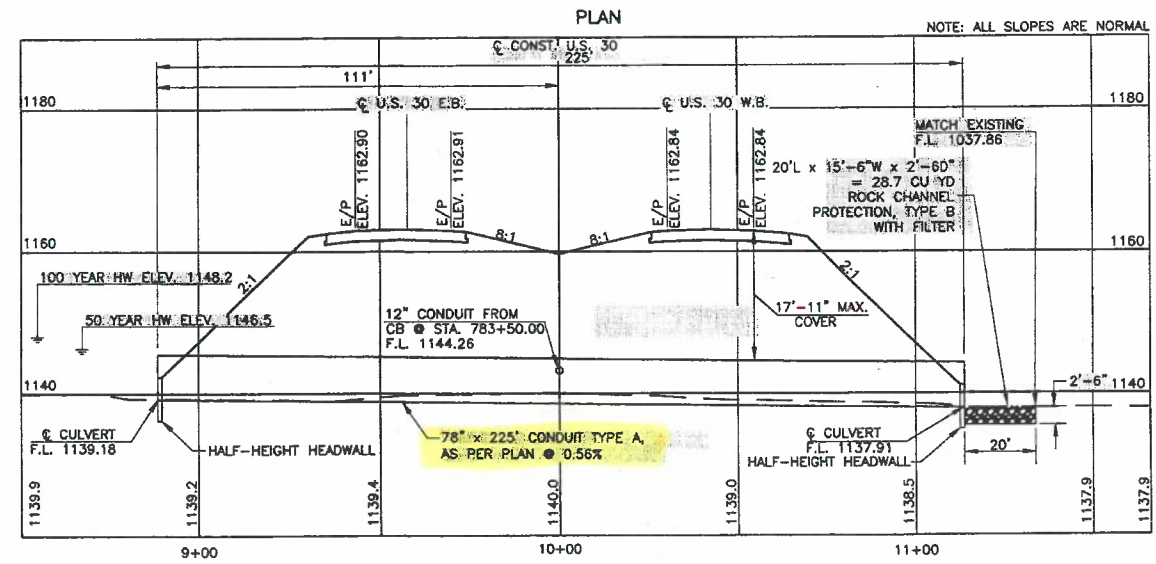
$117'' = 9'-9''$
 $9'-9'' = 9.75'$
 $\frac{9.75'}{\cos 8'-30''} = 9.85'$

SJM 02/17/06

* NOTE: ORIGINAL DESIGN
 CULVERT SIZE VECP DUE TO
 REQUEST FROM PROPERTY OWNER.
 (DRAINAGE ISSUE - FLOODING & WATER
 BACKING UP).

ALSO, SEPARATE VECP FOR ROADWAY
 PROFILE (REASON UNKNOWN @ THIS TIME).

APPROX. LAT. - 40°-48'-27"
 LONG. - 81°-51'-24"



PROFILE ALONG CENTERLINE OF CULVERT

FOR U.S. ROUTE 30 PLAN AND PROFILE
SEE SHEET 206.

CULVERT DETAIL
U.S. 30 STA 783+77.50

WAY-30-1183

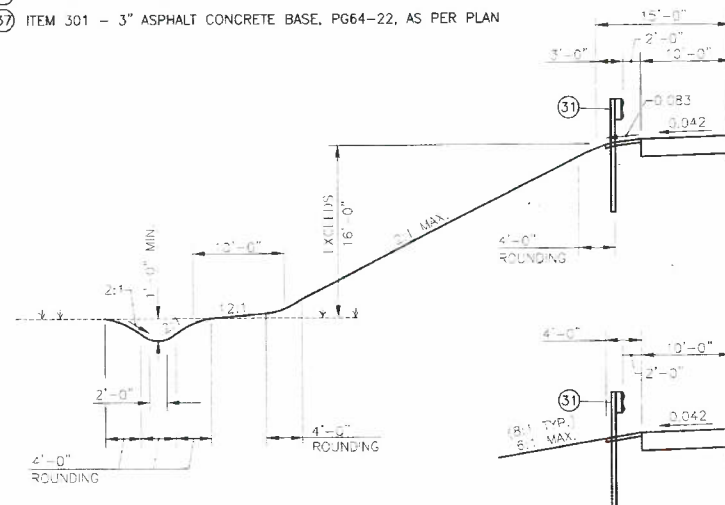
PROPOSED LEGEND

- ① ITEM 448 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
- ② ITEM 448 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
- ③ ITEM 301 - 3" ASPHALT CONCRETE BASE, PG64-22
- ④ ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22
- ⑤ ITEM 304 - 4" AGGREGATE BASE
- ⑥ ITEM 304 - 6" AGGREGATE BASE
- ⑦ ITEM 304 - 8" AGGREGATE BASE
- ⑧ ITEM 605 - AGGREGATE DRAINS
- ⑨ ITEM 204 - SUBGRADE COMPACTION
- ⑩ ITEM 407 - TACK COAT (SEE GENERAL NOTE)
- ⑪ ITEM 209 - LINEAR GRADING, AS PER PLAN
- ⑫ ITEM 254 - 3"± PAVEMENT PLANING, ASPHALT CONCRETE
- ⑬ ITEM 609 - CURB, TYPE 4C
- ⑭ NOT USED
- ⑮ ITEM 301 - 6 1/2" ASPHALT CONCRETE BASE, PG64-22
- ⑯ ITEM 605 - 4" UNDERDRAIN
- ⑰ ITEM 452 - 10" NON-REINFORCED CONCRETE PAVEMENT
- ⑱ ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15") **
- ⑲ ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
- ⑳ ITEM 446 - 1" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
- ㉑ ITEM 446 - 1" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22
- ㉒ NOT USED
- ㉓ NOT USED
- ㉔ - LONGITUDINAL JOINT
- ㉕ NOT USED
- ㉖ NOT USED
- ㉗ NOT USED
- ㉘ NOT USED
- ㉙ NOT USED
- ㉚ ITEM 448 - 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN
- ㉛ ITEM 606 - GUARDRAIL, TYPE 5

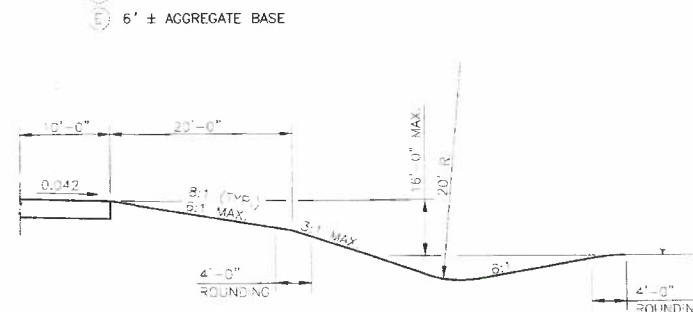
- ㉜ ITEM 856 - 1 1/2" STONE MATRIX ASPHALT CONCRETE, 12.5MM, PG 76-22M, (446)
- ㉝ ITEM 442 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
- ㉞ ITEM 302 - 9" ASPHALT CONCRETE BASE, PG64-22
- ㉟ ITEM SPECIAL - 4" FATIGUE RESISTANT BASE LAYER
- ㊱ ITEM 452 - 10" NON-REINFORCED CONCRETE PAVEMENT, AS PER PLAN
- ㊲ ITEM 301 - 3" ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

EXISTING LEGEND

- Ⓐ 7" ± ASPHALT CONCRETE
- Ⓑ 8" ± ASPHALT CONCRETE
- Ⓒ 12" ± ASPHALT CONCRETE
- Ⓓ 9" REINFORCED PORTLAND CONCRETE CEMENT
- Ⓔ 6" ± AGGREGATE BASE
- Ⓕ 9 1/2" ± ASPHALT CONCRETE
- Ⓖ 4" SUBBASE



DEEP FILL SECTION



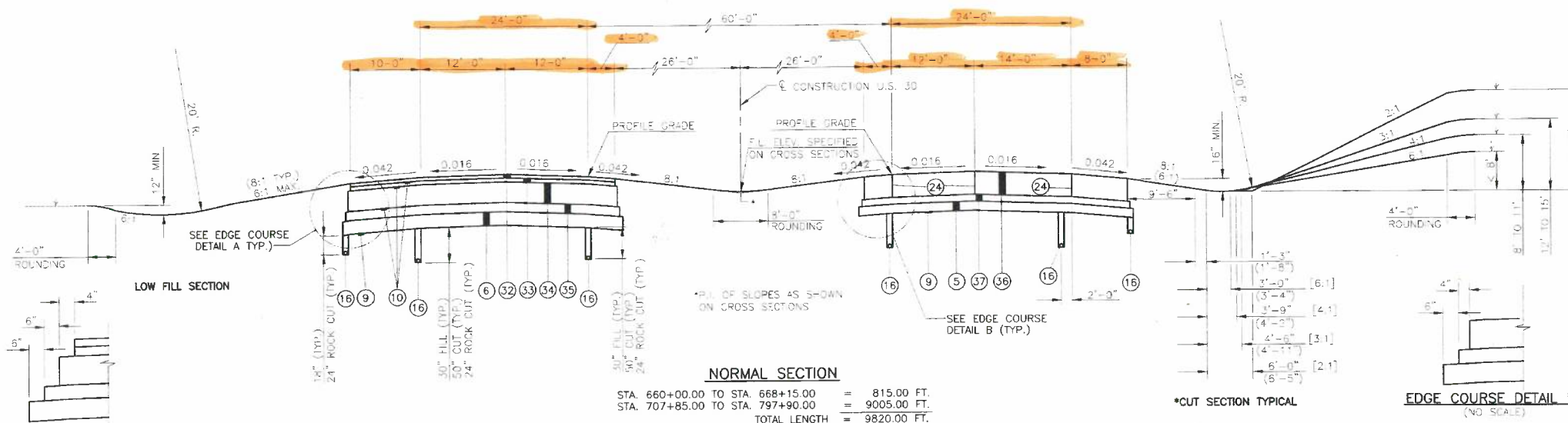
*MEDIUM FILL SECTION

- NOTES:
1. TYPICAL SECTIONS ARE INTENDED TO SHOW THE GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR DETAILS SEE THE PLAN - PROFILE SHEETS, UNDERDRAIN SUB-SUMMARY SHEETS, DETAIL SHEETS AND CROSS SECTION SHEETS.
 2. ITEM 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 UNDER GUARDRAIL, PG64-22 WILL BE USED IN SHOULDER AREAS WHERE GUARDRAIL IS PRESENT.
 3. SEE PLAN - PROFILE SHEETS FOR PROPOSED GUARD RAIL LOCATIONS.

U.S. 30 - TYPICAL SECTIONS

WAY-30-1183

11
741



NORMAL SECTION

*CUT SECTION TYPICAL

EDGE COURSE DETAIL B
(NO SCALE)

- * FOR ACTUAL SLOPE CONFIGURATION SEE CROSS SECTION
 ** FOR APPROACH SLAB QUANTITIES SEE STRUCTURE PLANS

EDGE COURSE DETAIL A
(NO SCALE)

OFFICERS

DR. KATHLEEN L. DE CARA
 P.E. EARTHENICS INC.
 DR. J. KAMINSKI, P.E.
 DR. J. KAMINSKI, P.E.

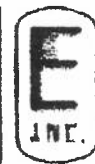
DR. J. KAMINSKI, P.E.

DR. J. KAMINSKI, P.E.
 DR. J. KAMINSKI, P.E.
 DR. J. KAMINSKI, P.E.

EUTHENICS INC.

CONSULTING ENGINEERS

875 Kennedy Circle, Cleveland, Ohio 44131
 Phone: (216) 749-1755
 Fax: (216) 749-1755
 Email: info@euthenicsinc.com



ASSOCIATES

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 R. A. KAMINSKI, P.E.
 A. P. PIATAK, P.E.
 G. P. HARRIS, P.E.
 E. P. PIATAK, P.E.
 D. T. BENDER, P.E.

Telecopier Cover Letter

(216) 749-1755

Date: 8/23/04

Time: 9:50

From: Alan Piatak

Please deliver the following 3 pages (including cover) to:

Name: Cassandra VanHorn

Firm: ODOT - District 3 (WAY-30 Field Office)

City: AppleCreek

Fax Number: (330) 264-5346

Comments:

Attached is the revised Culvert Detail for the crossing at Sta. 783+77.50. The conduit length is 198 feet based on the Value Engineering Profile.

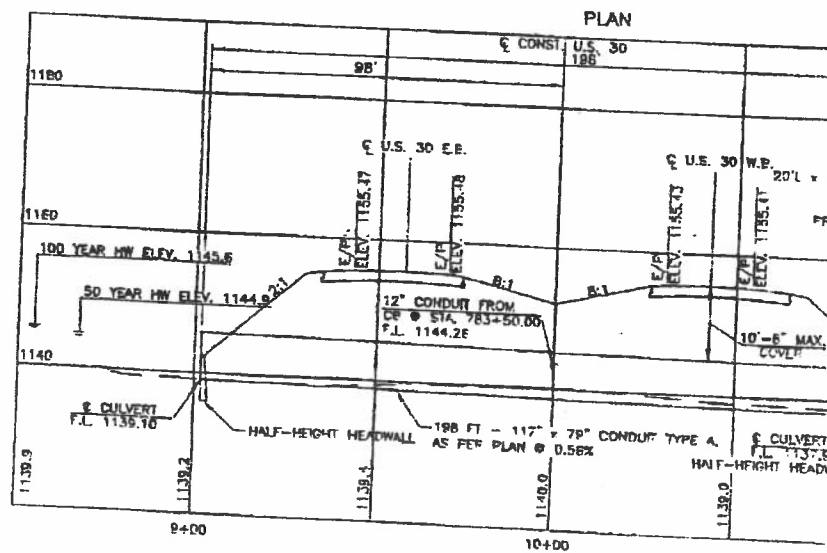
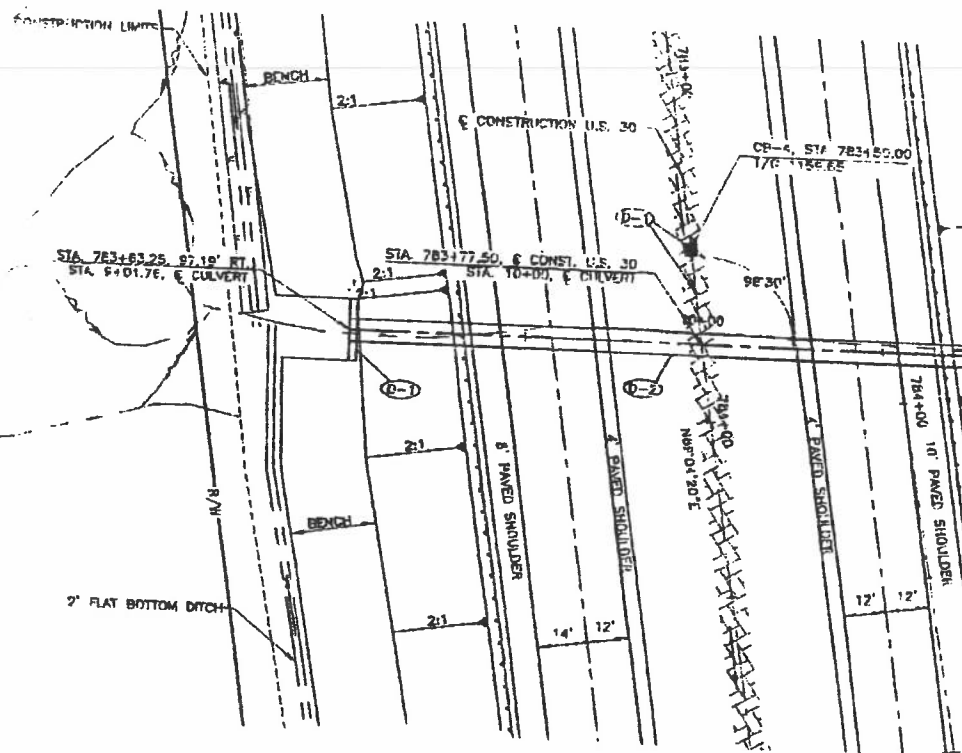
"U-Sick"

Post-it® Fax Note	7671	Date	8/23	# of pages	3
To	Stan Ujich	From	Wan Horn		
Co./Dept.		Co.			
Phone #	800-255-3767	Phone #	330-264-4000		
Fax #	330-478-2122	Fax #			

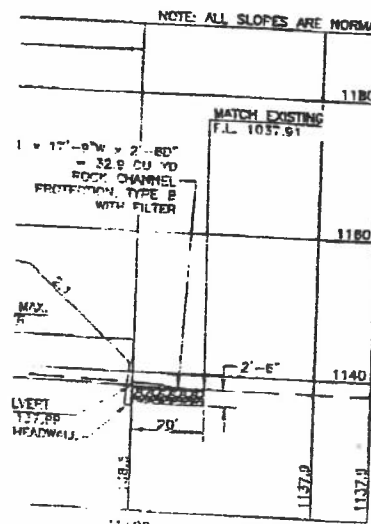
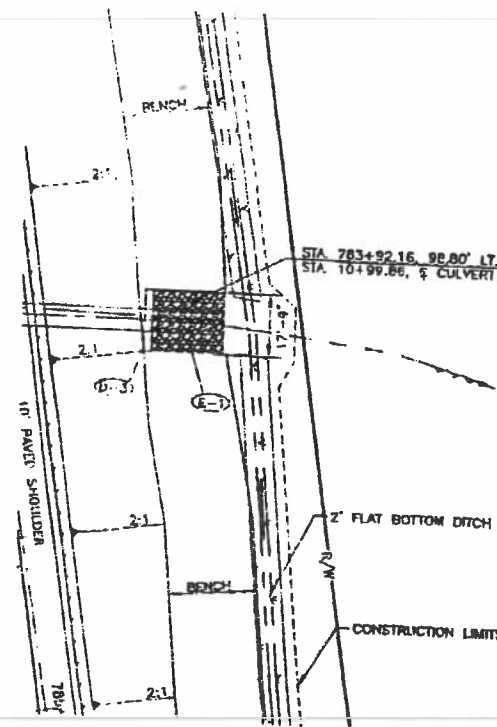
CC: Beaver Trailer

Please call if any additional information is needed.

If you do not receive all of the pages, please call as soon as possible. Thank You.



PROFILE ALONG CENTERLINE OF CULVERT



PI

ESTIMATED QUANTITIES										
ITEM NO.	DESCRIPTION	FROM	TO	SOF	B01		B02		B03	
					CU YD	CU YD	CU YD	CU YD		
D-1	783+63			RT						
D-2	783+83	783+82		C		4.8				
D-3	783+92			LT					198	
E-1	783+92	783+98		LI	33					
TOTALS CHIPPED TO CULVERT SUB-SUMMARY					33	9.8			198	

SCALE IN FEET

0 20 40

1" = 40'

JUN 1968

MMB

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 364 AC.
Q ₁₀₀	= 280 CFS
Q ₅₀	= 303 CFS
H ₁₀₀	= 1144.9
H ₅₀	= 1145.6
V ₁₀₀	= 7.3 FPS
V ₅₀	= 8.0 FPS

NOTE:
RICH WILLIAMS
DESIGN ENGINEERING INC.
(614) 793-2229
TO BE CONTACTED 3 DAYS IN
ADVANCE OF CONSTRUCTION
TO ENSURE FOUNDATION
MEETS REQUIRED MIN. BEARING
CAPACITY OF 7200 p.s.f.



FOR U.S. ROUTE 30 PLAN AND PROFILE
SEE SHEET 206.

CULVERT DETAIL
U.S. 30 STA 783+77.50

WAY-30-1183

490
741

* WAY-30-14.84 / SFN: 8502129

BBCM

Ref 1017

353

cut
1/3/05

BBC&M ENGINEERING, INC.
December 21, 2004
011-08148.016

6190 Enterprise Court, Dublin, Ohio 43016-7297
Phone (614) 793-2226 Fax (614) 793-2410

Mr. Perry Ricciardi
Ohio Department of Transportation, District 3
906 North Clark Street
Ashland, Ohio 44805

Re: Summary - Field Observations
US 30 Culvert Excavation - STA 783+75.21
WAY-30-11.86
Wayne County, Ohio

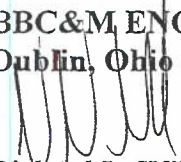
Mr. Ricciardi,

In accordance with your request, BBC&M Engineering, Inc. personnel were present on-site during excavation for the placement of the 117" X 79" corrugated metal culvert located at STA 783+75.21 along the new alignment for US 30 in Wayne County, Ohio. ODOT District 03 requested BBC&M presence on-site to observe the surface of the exposed culvert excavation and test for acceptability as to support for the culvert under design loading. Mr. Karl Zeiters, Senior Engineering Technician with BBC&M, was on-site as requested by Mr. Todd Norris of Beaver Excavating on 12/08, 12/09, 12/13 and 12/14/04. Reporting of our findings and recommendations associated with these site visits, as recorded on Daily Observation Reports, is herewith attached.

We appreciate having been given the opportunity to be of service on this project. If you have any questions concerning our findings, please do not hesitate to contact our office.

Sincerely,

BBC&M ENGINEERING, INC.
Dublin, Ohio


Richard L. Williams, Ph.D., P.E.
Vice President/Chief Engineer

Enclosures: Daily Observation Reports (4 sheets)
Pc: C. Brown, District 03

* WAY-30-14.84 SFN: 8502129

* FIELD MEASUREMENTS FOR ABOVE CULVERT: 120" X 84"
~~MEASUREMENTS~~ MEASUREMENTS MADE BY S. MEGAYESY - DIST. 3 BRIDGE SPECIALIST



BBC&M Engineering, Inc.
DAILY OBSERVATION REPORT

Date: 12/8/04

Job No.: 011-08148-016

Project: WAY-30-11.83

Location: Wooster, Ohio

Temperature: Min. 39° Max. 46°

Weather Conditions: Cloudy, Breezy, Cool

BBC&M Personnel: Karl Zeiters

Work in Progress:

BBC&M Engineering was on site as scheduled to observe the bearing surface at the excavation for the culvert between Sta. 784+00 and Sta. 783+00.

Observations:

Beaver Excavating excavated the culvert location from north to south including the north headwall. The headwall and approximately 45' of culvert was excavated to 6" below invert elevation. Bearing testing of the exposed subgrade exhibited hand penetrometer values of 4.0 tsf to 4.5+ tsf with an occasional value of 3.75 tsf and an average of 4.0 tsf. The exhibited bearing value met the plan bearing value and then 6" of compacted sand was placed as bedding material prior to placing the culvert pipe sections. Concrete was placed at the bottom of the north headwall and two 22' long section of culvert. Bearing material prior to the compacted sand layer consisted of brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel, trace of cobbles with sand, silt and clay pockets and seams.

Comments:



BBC&M Engineering, Inc.
DAILY OBSERVATION REPORT

Date: 12/9/04	Job No.: 011-08148-016	Project: WAY-30-11.83
Temperature: Min. 36° Max. 49°		Location: Wooster, Ohio
Weather Conditions: Cloudy, Breezy, Mild		BBC&M Personnel: Karl Zeiters

Work in Progress:

BBC&M Engineering was on site as scheduled to resume bearing observation and testing at the culvert excavation subgrade.

Observations:

Beaver Excavating resumed excavation of the culvert from where the excavation was ceased on 12/8/04. Bearing surface testing and observation was performed when the excavation was 6" below plan bottom elevation. Bearing testing exhibited hand penetrometer values of 4.0 tsf to 4.5 tsf and an occasional value of 3.5 tsf due to a clay pocket with an average value of 4.0 tsf. Testing indicated bearing values capable of the plan bearing value. Bearing material consisted of very-stiff to hard brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel, trace cobbles containing sand and clay pockets. A 6-inch compacted sand layer was then placed for bedding. Three 22' long sections of culvert were placed today and the north headwall forms were stripped.

Comments:



BBC&M Engineering, Inc.
DAILY OBSERVATION REPORT

Date: 12/13/04

Job No.: 011-08148-016

Project: WAY-30-11.83

Temperature: Min. 27° Max. 33°

Location: Wayne County, Ohio

Weather Conditions: Cloudy, Windy, Cold,
Snow Showers

BBC&M Personnel: Karl Zeiters

Work in Progress:

BBC&M Engineering was on site to resume observation and testing of the bearing surface subgrade for the culvert excavation.

Observations:

Beaver Excavating resumed the culvert excavation. Today, three 22 foot sections of culvert were excavated and placed. The subgrade soils prior to placing a compacted layer of sand were observed and tested. Bearing testing exhibited hand penetrometer values of 4.0 tsf to 4.5+ tsf indicating bearing values capable of the plan bearing value. Excavated subgrade consisted of brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel, trace cobbles containing sand and clay pockets and seams.

Comments:

BBC&M Engineering is scheduled on 12/14/04 to complete the excavation of south headwall and culvert.



BBC&M Engineering, Inc.
DAILY OBSERVATION REPORT

Date: 12/14/04	Job No.: 011-08148-016	Project: WAY-30-11.83
Temperature: Min. 19° Max. 27°		Location: Wayne County, Ohio
Weather Conditions: Mostly Cloudy, Breezy, Cold, Snow Flurries		BBC&M Personnel: Karl Zeiters

Work in Progress:

BBC&M Engineering was on site to complete the bearing surface observation and testing for the culvert and south headwall between Station 784+00 and Station 783+00.

Observations:

Beaver Excavating Company completed the excavation of the culvert including the south headwall today. Bearing surface testing and observation of the exposed subgrade, prior to placement of a compacted sand layer, exhibited very-stiff to hard brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel, trace cobbles with clay, sand and silt pockets and seams with hand penetrometer values of 4.0 tsf to 4.5+ tsf. Bearing testing indicated bearing values capable of the plan bearing value. After bearing surface testing, a compacted sand layer was placed for bedding prior to placement of the culvert pipe section and the south headwall forms.

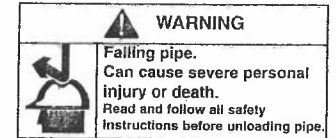
Comments:

Excavation for this culvert location was completed today.

* See attached sketch, if applicable.



BILL OF LADING



THIS SHIPPING ORDER MUST BE LEGIBLY COMPLETED IN INK, INDELEBIL PENCIL, OR CARBON, AND RETAINED BY THE AGENT RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications, and rules that have been established by the carrier and are available to the shipper, on request.

FROM: CONTECH CONSTRUCTION PRODUCTS INC. AT: SUMMIT PLANT, ASHLAND KY.

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with the terms and conditions of said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

(02) LS#: 850502
DATE: 10/11/2004 Promised: 10/30/2004
DELIVERING CARRIER: JRB TRUCK
220
CAR/TRAILER NO:
DEST. CODE: 1458715

DESTINATION: (MAIL OR STREET ADDRESS OF CONSIGNEE - FOR PURPOSES OF NOTIFICATION ONLY)
BEAVER EXC.
PROJ.44(04)WAYNE CO
(WAYNE CO)
WOOSTER, OH 44093

CARRIER MUST SHOW THIS NUMBER ON FREIGHT BILLS

BILL OF LADING NO.

52-3622 PAR

PAGE 3 B/L STOP 02 Delivery Date

ORDER NUMBERS

PLANT: 52-8505-00
SALES: 23-9666-00
BUYER: P-202408

FREIGHT CHARGES ARE PREPAID UNLESS MARKED COLLECT.
ORGN, FRGT PREPAID

ITEM NO. PKGS * H/M KINDS OF PACKAGES, DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS

LASS 51970 - PIPE, IRON OR STEEL, PLATE OR SHEET, NOI
CLASS DEPENDENT ON STATED GAGE & DIAMETER
01 C 1 H/C PIPE 3 x 1 AL T2 LS 12GA 102" 22.00FT
ARCHED(117x79),LIFT LUGS,
REF. 121A
STA. 772+50 ML
A-1 A-2, A-2 A-3, A-3 A-4

MATCH MARK ENDS AND SEND LAYING SCHEDULE W/TRUCK
FURNISH ODOT CERTS
CALL STAN B4 SHIP 330-478-2151

* WEIGHT (SUB. TO COR.) CLASS OR RATE CK

3037

Delivery Date: ____/____/____

STOP OFF WEIGHT 3,037 lbs

Receiving -Print Name: _____

Signature: _____