



**Worldwide Facilities Group
Remediation Team**

MC 483-520-190
2000 Centerpoint Parkway
Pontiac, Michigan 48341

December 7, 2006

Mr. Daniel Patulski, DP-8J
United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Patulski:

RE: Interim Measures Completion Report – Area 1 Barrier Wall
13000 Eckles Road Site (U.S. EPA ID No. MID 005 356 621)
Livonia, Michigan

Enclosed please find the Interim Measures Completion Report – Area 1 Barrier Wall. This report describes the activities conducted during the installation of a barrier wall encompassing Area 1 at the 13000 Eckles Road Site in Livonia, Michigan.

Please feel free to contact me at (248) 753-5800 if you have any questions regarding this document, or if you require any further information.

Yours truly,

GENERAL MOTORS CORPORATION,

for Kim Tucker-Billingslea
Project Manager

CM/cm/12607/Rpt 44/Det.
Encl.

c.c.: Richard Conforti (MDEQ)
Jean Caufield (GM)
Chris Meincke (CRA)
Ian Richardson (CRA)



INTERIM MEASURES COMPLETION REPORT AREA 1 BARRIER WALL

**13000 ECKLES ROAD
LIVONIA, MICHIGAN**

U.S. EPA No. MID 005 356 621

**Prepared For:
General Motors Corporation
Remediation and Liability Management Company, Inc.**

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THE ORIGINAL CONTENT REMAINS UNCHANGED.

**DECEMBER 7, 2006
REF. NO. 12607 (44)**

**Prepared by:
Conestoga-Rovers
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LIST OF ACRONYMS AND TERMS

AOI	Area of Interest
bgs	below ground surface
cm/sec	centimeters per second
CQA	Construction Quality Assurance
CRA	Conestoga-Rovers & Associates
GM	General Motors Corporation
GMP	Groundwater Monitoring Plan
GWTP	Groundwater Treatment Plant
HASP	Health and Safety Plan
IM	Interim Measure
mg/L	milligrams per liter
OSHA	Occupational Safety and Health Administration
QA/QC	Quality Assurance/Quality Control
REALM	Remediation and Liability Management Company, Inc. (A Subsidiary of GM)
RFI	RCRA Facility Investigation
U.S. EPA	United States Environmental Protection Agency
WWTP	Waste Water Treatment Plant

1.0 INTRODUCTION

This report presents a Completion Report for the Interim Measures (IMs) for groundwater at Area 1 at the former General Motors Corporation (GM) property located at 13000 Eckles Road in Livonia, Michigan (Site). Area 1 is located along the north side of Amrhein Road at the southwest corner of the Site (see Figures 1.1 and 1.2). The Site was historically used for the production of vehicle bumpers, leaf springs and strut assemblies, with Area 1 being used as a former chrome plating area. Environmental decommissioning and demolition of the entire Site occurred during the 2000 to 2001 period. A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was completed as part of the Corrective Action activities at the Site from 2002 through 2005. Environmental activities at the Site are being conducted by Conestoga-Rovers & Associates (CRA) under the direction of Remediation and Liability Management Company, Inc. (REALM), an environmental subsidiary of GM.

The interim measures for Area 1 groundwater have been conducted in accordance with the "Supplemental Interim Measures Work Plan -Area 1 (Chrome Plating Area)" (CRA, August 2004) (Work Plan). Activities conducted on-site consisted of installing a barrier wall (primarily soil-bentonite with limited areas of jet grouting) around Area 1 to contain groundwater with elevated concentrations of nickel and hexavalent chromium. The barrier wall was installed to supplement the French Drain Collection System, which GM had installed in 1980 to 1981 to address migration of groundwater from this area, within the area contained by the barrier wall. This report presents a summary of the activities associated with the barrier wall interim measure.

1.1 BACKGROUND

This section presents a brief summary of the activities that preceded the implementation of the interim measures.

The Site was historically used for the production of vehicle bumpers, leaf springs, and strut assemblies, with Area 1 being used for chrome plating. GM/REALM is currently implementing performance-based RCRA Corrective Action at the Site pursuant to an October 16, 2001 RCRA Corrective Action Agreement between the United States Environmental Protection Agency (U.S. EPA) and GM.

For the purposes of the RCRA Corrective Action, the former Waste Water Treatment Plant (WWTP) (Area of Interest (AOI) 1), the Stormwater Clarifier (AOI 3), the Old Nickel Bright Tank (AOI 14), Waste Sump Under Plating Line (AOI 15), French Drain

Collection System (AOI 18), and Plating Line (AOI 20) have all been grouped into Area 1 due to their proximity and similar environmental conditions. A detailed description of the historical operations that occurred at each AOI is provided in the Current Conditions Report - Revision 1 (CRA, June 2002), RCRA Facility Investigation (RFI) Report - Revision 1 (CRA, March 2005), Supplement to the RFI Report (CRA, April 2005), and Supplemental Interim Measures Work Plan - Area 1 (CRA, August 2004).

Area 1 is located at the former GM Spring and Bumper Plant located at 13000 Eckles Road in Livonia, Michigan (Site) and was formerly the location of chrome plating operations. CRA was retained by REALM to evaluate the current interim measure (groundwater collection via french drain and treatment) for Area 1 and to determine whether other cost-effective remedial alternatives exist to address nickel and chromium in Area 1 groundwater. On-Site hexavalent chromium and nickel concentrations have been reported in groundwater samples up to 633 milligrams per liter (mg/L) and 648 mg/L, respectively. A French Drain Collection System was installed in 1980 to 1981. Collected groundwater is treated in a groundwater treatment plant (GWTP). Data, which existed prior to the containment wall interim measure, indicated that the trench may not be fully effective in controlling the migration of nickel-impacted groundwater at the eastern edge of the trench. In addition, GWTP influent concentrations have remained fairly consistent since 1993 when plating operations ceased. As a result, GM re-evaluated the effectiveness of the existing collection and treatment system.

An evaluation was conducted to assess the feasibility of using treatment technologies such as chemical fixation/precipitation, soil flushing, and permeable reactive barriers. In addition, containment was evaluated by considering a slurry wall in combination with optimizing the existing treatment system. Future use of the Site was considered in the evaluation as the Site will be redeveloped. Constructing a slurry wall around Area 1 and optimizing the existing treatment system was determined to be the most effective interim measure to address environmental impacts and facilitate redevelopment of the property.

2.0 INTERIM MEASURES PERFORMED

2.1 SUMMARY OF SELECTED REMEDIAL ACTION

A homogeneous soil-bentonite barrier (slurry) wall was determined to be the most effective interim measure to address environmental impacts and facilitate redevelopment of the property.

The soil-bentonite slurry acts to shore the trench, preventing collapse, and forms a filter cake on the trench walls which acts to prevent fluid loss. The filter cake also reduces the native soils effective hydraulic conductivity. The low-permeability backfill is prepared by mixing a bentonite slurry with the excavated native soils. Sometimes, additional borrow materials or dry bentonite is added to the mixture to meet the design requirements for permeability.

Jet grouting was selected as an option to be utilized in the event that excavation could not be safely completed around utilities, in areas of poor access, or beneath subsurface obstructions. Typical applications would be under railroad tracks or in areas with a large number of underground and overhead utilities.

A soil-bentonite mix study was conducted by GAI Consultants, Inc. to quantify the hydraulic permeability conductivity of the soil-bentonite backfill under different mix conditions and demonstrate its compatibility with the groundwater. The objective of the mix study was to identify a soil-bentonite mixture to use when constructing the barrier wall and ensure a maximum hydraulic conductivity for the barrier wall of 1×10^{-7} cm/sec or less. In order to determine the appropriate low hydraulic conductivity mix design, soil samples from the Site were mixed into composite soil blends and tested for hydraulic conductivity. The GAI Consultants soil-bentonite mix study is presented in Appendix A.

In accordance with the U.S. EPA approved Work Plan, a 4,700-foot barrier wall was installed around Area 1 between October 2004 and December 2004. The proposed barrier wall alignment presented in the Work Plan was modified due to changes in proposed Site redevelopment, at the time. The actual alignment of the barrier wall was modified to completely contain Area 1 as presented on Figure 2.1. The barrier wall is approximately 2.5 feet thick with a varying depth between 20 to 30 feet below ground surface (bgs) and is keyed into the underlying clay layer. The soil-bentonite barrier wall was supplemented with a jet-grouted barrier wall using Impermix (mixture of Attapulgitic clay, metallurgical slag cement and ground lime) in specific locations where active utilities or subsurface obstructions were encountered. The jet-grout barrier wall

provides the equivalent resistance to groundwater flow of the 24-inch wide barrier wall having a permeability of 1×10^{-7} cm/sec. The sections of the wall where jet grouting was used are described in the following paragraph.

2.2 FIELD CHANGES IN DESIGN

The soil-bentonite barrier wall was constructed with the following field modifications:

- Jet grouting was conducted instead of soil-bentonite between stations 8+80 to 11+80. The southern alignment of the barrier wall from 11+00 to 11+80 was moved northward to run north of the sanitary sewer;
- Jet grouting was conducted in addition to soil-bentonite between stations 30+25 to 30+75 to achieve the proper seal between the barrier wall and the underlying native clay and avoid obstructions encountered during excavation. An obstruction was present at approximately 13 ft bgs for a distance of approximately 45 feet along the barrier wall alignment. The slurry wall was completed to the top of the obstruction. PVC conduits were installed through the obstruction to the clay layer utilizing a sonic drill rig. The jet grouting rig was then utilized to complete a jet grouted barrier wall from the bottom of the obstruction down to the clay. Numerous tunnels and subsurface obstructions were identified (former Pedestrian Clock Tunnel (AOI 24)) in this area during the installation of the slurry wall. To address the presence of void space in the Pedestrian Clock Tunnel, concrete from the saw cutting activities was placed into the void space on either side of the path of the slurry wall and the area was backfilled with soil. The slurry wall was then installed through the backfilled soil; and
- Jet grouting was conducted in addition to soil-bentonite between stations 2+50 to 2+75 to achieve the proper seal between the barrier wall and the underlying native clay and avoid obstructions encountered during excavation. During installation of the slurry wall, an obstruction was identified at approximately 23 feet bgs for a distance of approximately 10 feet along the slurry wall alignment. Similar to the method described above, the slurry wall was completed through the area down to the top of obstruction. PVC conduits were installed down to the clay beneath the obstruction with a sonic drill rig, however, during the drilling, no significant obstructions were identified, some fragments of clay piping were returned with the drill cuttings. The clay piping fragments could have been a portion of a historic sewer that was in the vicinity of the slurry wall alignment as identified on a historic utility drawing. Following installation of the PVC conduits, the area beneath the "obstruction" was jet grouted.

The As-Recorded Drawings for the barrier wall are presented in Appendix B.

3.0 CONSTRUCTION ACTIVITIES

All work was performed under the direct oversight of the Construction Quality Assurance (CQA) Officer, Engineer and the CQA Support Personnel. These personnel conducted the following activities:

- Enforced construction specifications throughout the field work;
- Reviewed construction activities and completed works against plans and specifications;
- Provided field management of CQA activities;
- Informed CQA support personnel on CQA requirements and procedures;
- Ensured that CQA test results are accurately recorded;
- Rejected defective work and verified that corrective measures are implemented; and
- Interacted with the construction superintendent to provide assistance in modifying the materials and worked to comply with the specified design.

The following sections further discuss the major construction activities.

3.1 CONTRACTOR/SUBCONTRACTOR PROCUREMENT

REALM retained Geo-Con, a trade name of Environmental Barrier Company, LLC (Geo-Con) as the Area 1 barrier wall construction contractor. In addition, CRA retained Stearns Drilling Company and Prosonic to provide sonic drilling services, and Altech Drilling and Investigative Services for investigative drilling during the barrier wall construction.

3.2 MOBILIZATION

Geo-Con conducted mobilization activities on October 11 and 12, 2004. Mobilization activities consisted of preparing Geo-Con's field office and equipment mobilization.

3.3 SITE SECURITY

During construction activities, visitors were instructed, via signs posted at the Site entrance, to sign in at the Geo-Con field office. All other entrances to the Site were

secured to insure that access to the Site was only allowed through the main entrance off Eckles Road.

3.4 HEALTH AND SAFETY

A Site-specific health and safety plan (HASP) was prepared and implemented by Geo-Con consistent with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1200 to ensure that all on Site personnel were properly protected from potential exposure to Site-related constituents. The HASP documented potential hazards at the Site, the level of personal protective equipment necessary for use during the barrier wall installation activities, and the personal decontamination procedures required to control any potential personal exposures. Modified Level D PPE was worn by all personnel entering the work area.

3.5 DAILY PROGRESS MEETINGS

Project meetings were held during the construction period to ensure that all tasks were accomplished according to schedule and in accordance with the construction plans and specifications. These meetings included a pre-construction CQA meeting and daily and weekly progress meetings. Minutes were recorded for all meetings held on Site during installation, except the daily progress meetings. Daily progress meetings were documented in the CQA construction logbook. These project meetings are described below.

The purpose of the preconstruction meeting was to review the project schedule, and the CQAPP and to review levels of responsibility and reporting requirements.

The purpose of the daily progress meetings was to review daily work schedule and progress. These meetings were informal meetings held at the start of each workday. The daily progress meeting was generally held concurrent with a daily safety meeting.

3.6 BARRIER WALL CONSTRUCTION AND TESTING

Record drawings have been prepared to provide documentation of the As-Recorded construction of the barrier wall. The As-Recorded drawings are presented in Appendix B.

The specified test methods used to ensure the quality of the construction of the barrier wall including requirements of the materials and frequency of testing for the soil-bentonite slurry and the jet grout material are presented in Tables 3.1 and 3.2, respectively. Materials testing was performed in accordance with these requirements by the CQA support personnel or the testing laboratories to ensure compliance with material specifications and design criteria. The analytical results for the specific components of the barrier wall that were tested are presented below.

3.6.1 SOIL-BENTONITE BACKFILL MATERIAL

The soil-bentonite backfill material was tested for slump, gradation, density, and permeability. The results of the testing for slump and density are presented in the Daily Construction Quality Control Reports presented in Appendix C. The results of the testing for gradation and permeability are presented in Appendix D.

3.6.2 JET GROUT MIXTURE

The material used for jet grouting was Impermix which was installed to provide equivalent resistance to groundwater flow of the 24 inch wide barrier wall having a permeability of 1×10^{-7} cm/sec. The jet grout mixture used was tested according to the parameters and frequency specified in Table 3.2. These tests included grout density, and temperature. All data were compared to the specifications and substandard mixes were rejected until corrected. The results of the density and temperature tests are presented in the Daily Construction Quality Control Reports as shown in Appendix C.

3.6.3 BACKFILL DEPTH PROFILE

Quality assurance records were maintained to demonstrate that the barrier wall has no gaps between the base of the barrier wall and the impermeable underlying native clay. The Daily Construction Quality Control Reports are presented in Appendix C.

3.6.4 DAILY JET GROUTING REPORTS

Daily Jet Grout Quality Control reports are presented in Appendix E.

4.0 PROJECT INSPECTION

During the pre-final inspection conducted by REALM/CRA on December 29, 2004, three deficiencies were identified. Based on a follow-up Site inspection conducted on April 12, 2005, REALM/CRA identified that the previously identified outstanding items still required completion under the Contract.

The final inspection occurred on May 20, 2005. All deficiencies previously identified had been rectified.

5.0 FUTURE MONITORING ACTIVITIES

As described in the Revised Groundwater Monitoring Plan (CRA, December 2006) (GMP), groundwater elevations will be monitored at 34 monitoring wells annually at on and off-Site locations, including monitoring wells in the vicinity of Area 1. Groundwater samples will be collected from five monitoring wells located downgradient of the Area 1 Barrier Wall to monitor groundwater conditions. Additionally, groundwater elevations are currently being monitored from approximately 50 on-Site monitoring wells monthly to evaluate Site-wide groundwater flow directions, the containment effects of the IM for Area 1 groundwater, and verify the integrity of the barrier wall. Following the evaluation of the long-term effects of the Area 1 barrier wall and collection system, the 50 monitoring wells will be greatly reduced.

6.0 CONCLUSIONS

The barrier wall has been installed as identified in the U.S. EPA approved work plans. Field QA/QC testing indicate that the barrier wall meets the required maximum hydraulic permeability of 1×10^{-7} cm/sec or less. Groundwater elevation monitoring should be completed in accordance with the GMP to confirm hydraulic containment.

7.0 REFERENCES

Conestoga-Rovers & Associates, June 2002, Current Conditions Report 13000 Eckles Road Livonia, Michigan (DETROIT).

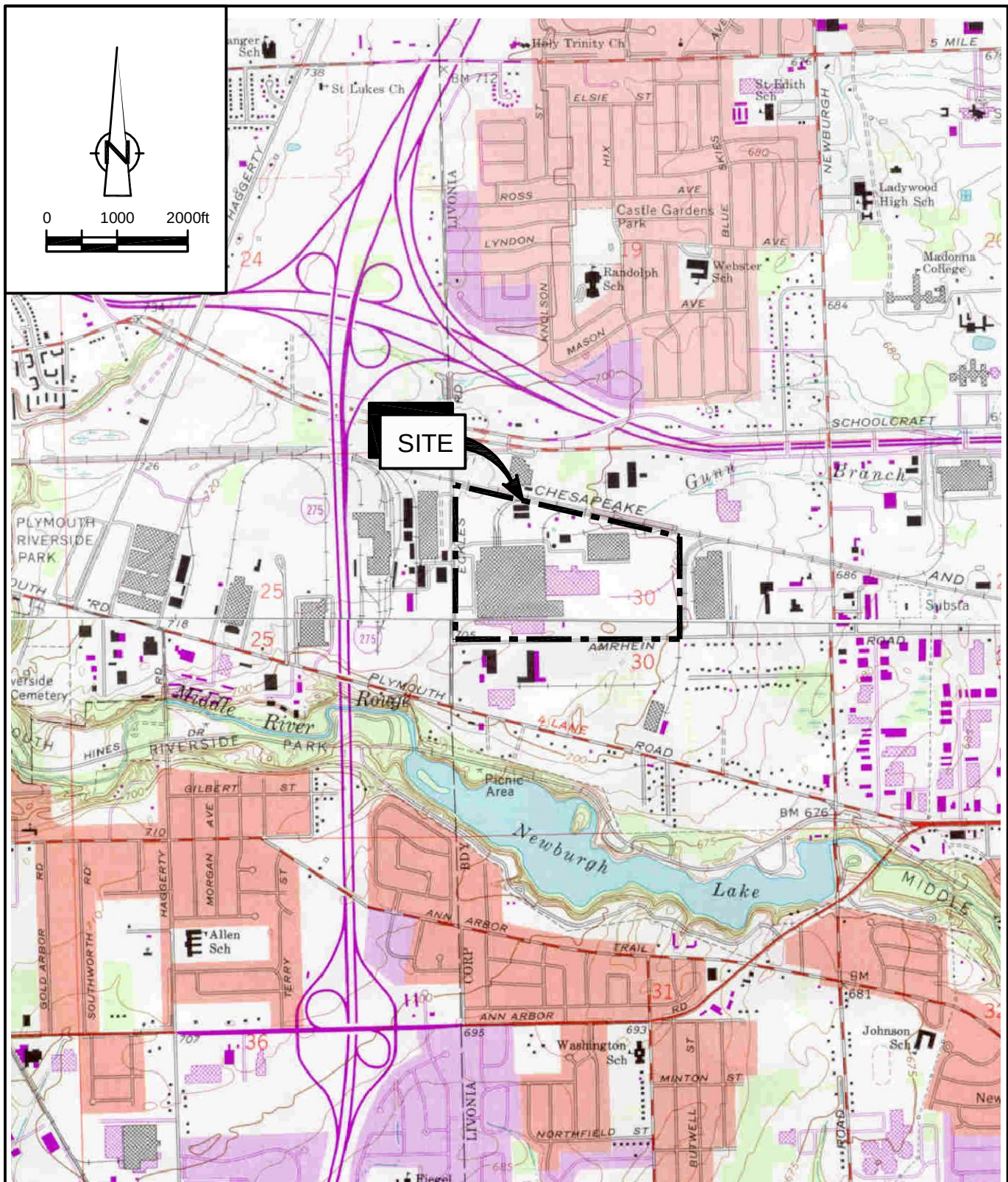
Conestoga-Rovers & Associates, July 2003, Interim Measures Work Plan Area 1 (Chrome Plating Area) 13000 Eckles Road Site Livonia, Michigan.

Conestoga-Rovers & Associates, August 2004, Supplemental Interim Measures Work Plan -Area 1 (Chrome Plating Area).

Conestoga-Rovers & Associates, March 2005, RCRA Facility Investigation (RFI) Report - Revision 1.

Conestoga-Rovers & Associates, April 2005, Supplement to the RFI Report.

Conestoga-Rovers & Associates, December 2006, Revised Groundwater Monitoring Plan.

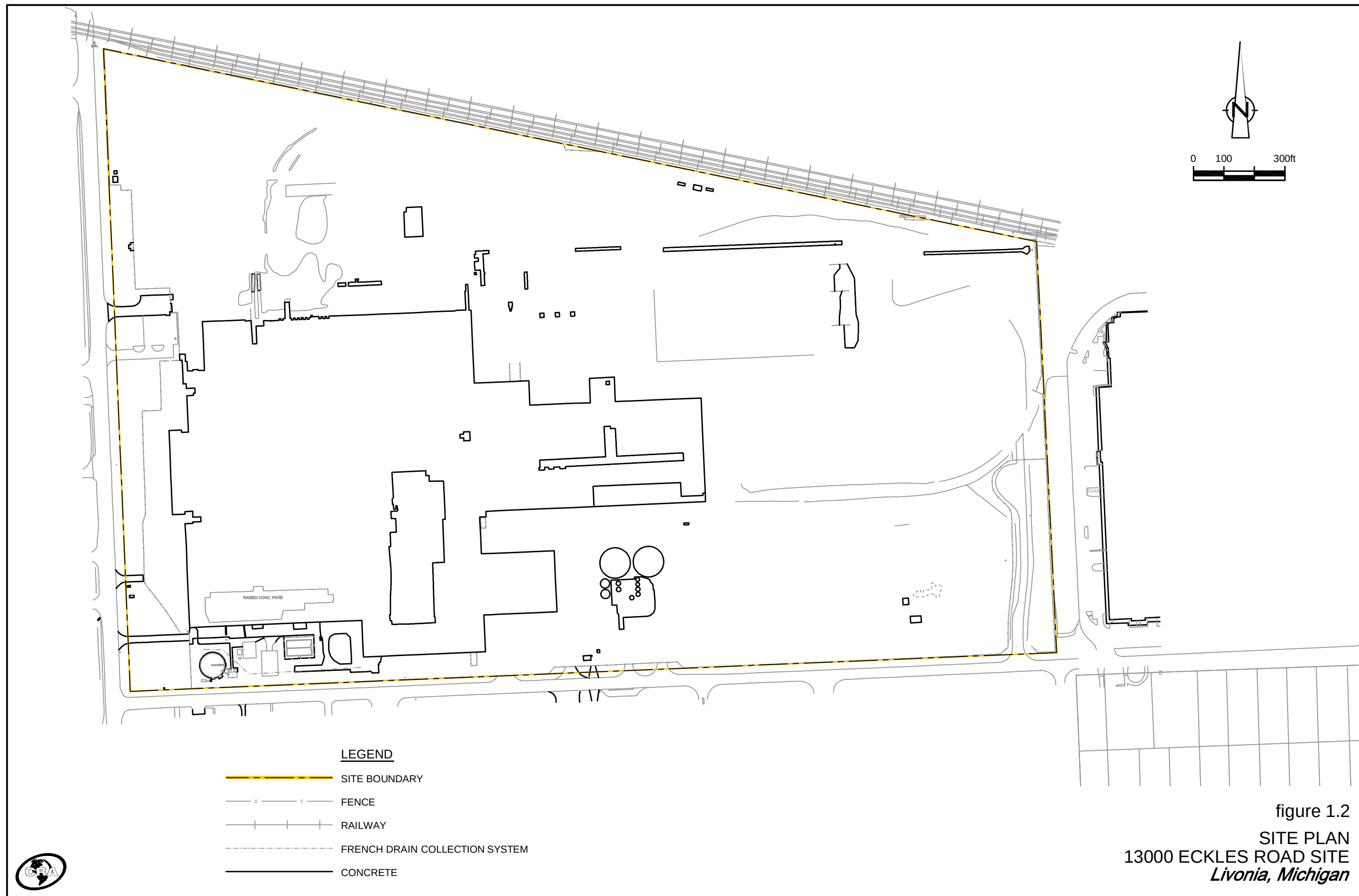


SOURCE: USGS QUADRANGLE MAPS;
NORTHVILLE AND WAYNE, MICHIGAN



LIVONIA

figure 1.1
SITE LOCATION
13000 ECKLES ROAD SITE
Livonia, Michigan



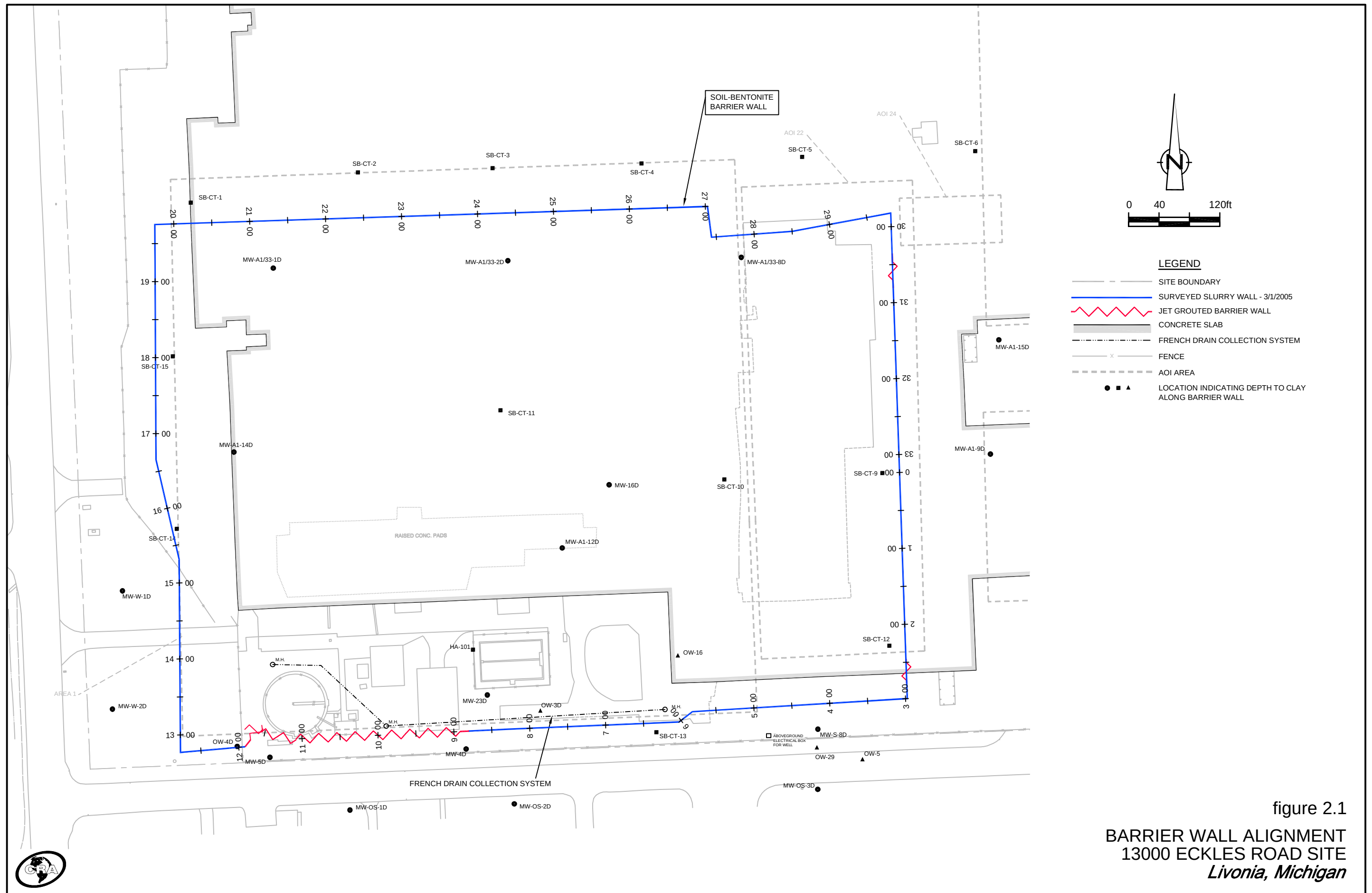


TABLE 3.1

SOIL-BENTONITE SLURRY WALL - QUALITY CONTROL TESTING SUMMARY

<i>BARRIER WALL QUALITY CONTROL TESTING</i>			
<i>Subject</i>	<i>Standard</i>	<i>Specific Test</i>	<i>Frequency</i>
Bentonite Powder	API 13A	Wet Screen Analysis Suspension Properties Filtrate Loss Yield Point Moisture Content	1 per truck shipment
Chemical Analysis of Water	ASTM D512	Chloride Ion in Water Particulate and Dissolved Matter in Water	1 per water supply source or as changes occur
Initial Bentonite Slurry Properties	API RP13B	Density Viscosity pH Filtrate Loss	3 per shift 3 per shift 1 per shift 1 per shift (see Note 1)
In-trench Bentonite Slurry Properties	API RP13B	Viscosity Density Filtrate Loss	3 per shift 3 per shift 1 per shift
	ASTM D4381	Sand Content	1 per shift (see Note 1)
Imported Backfill Material	ASTM D422 or ASTM D1140	Grain Size	1 per 200 C.Y. or 1 per shift, whichever is more frequent
Soil-bentonite Backfill Material	ASTM C143/C143M	Slump Cone	2 per shift (when placing backfill)
	ASTM D4380	Density	2 per shift (when placing backfill)
	ASTM D422 ASTM D2216	Grain Size (No. 200 Sieve) Water Content	1 per 1,000 C.Y. 2 per shift (when placing backfill)
In-place Barrier Wall	ASTM D5084	Permeability	1 per 1,000 C.Y. (grab samples)

Note:

- (1) If more than 1 batching plant is being used, apply these frequencies to each batching plant separately. (A shift is considered to be a maximum of 10 hours.)

TABLE 3.2

JET GROUT BARRIER WALL - QUALITY CONTROL TESTING SUMMARY

<i>Subject</i>	<i>Standard</i>	<i>Specific Test</i>	<i>Frequency</i>
Cement	ASTM C150	Manufacturer's certificate of compliance	1 per truck shipment
Impermix Materials	Manufacturers COC	Manufacturer's certificate of compliance	1 per truck shipment
Additives	Manufacturers COC		1 per truck shipment
Initial Grout Mixture Properties	API RP-13B	1. Slag content 2. Attapulgate content 3. Density	1 per batch 1 per batch 4 per shift
In-place Grout from Return	ASTM D-5084	Permeability	1 per 200 lf
In-place Grout	ASTM D-5084	Permeability	1 per 100 lf

APPENDIX A

SOIL-BENTONITE MIX STUDY REPORT



GAI Consultants, Inc.
Pittsburgh Office
385 East Waterfront Drive Homestead, PA 15120-5005
Tel 412.476.2000 Fax 412.476.2020
www.gaiconsultants.com

To: C.R. Hockstra Date: 9.24.04
Company: Conestoga-Rovers & Assoc.
FAX No.: 519.884.0525 Telephone No.: _____
From: Dennis Rebiolo
Project No.: 040456 Verification No.: _____
Pgs (inc. cover): 20
Message:

Original will:

- ☒ Follow via mail
☐ Follow via overnight delivery
☐ Not be sent

If you have experienced a problem in receiving this transmission – please contact us immediately, at 412.476.2000.

Number Faxed to _____
cc: Name _____ cc: Fax No. _____
cc: Name _____ cc: Fax No. _____

Facsimile

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September 23, 2004

Project C040456

Mr. C.R. Hoekstra, P.E.
Conestoga-Rovers & Associates
651 Colby Drive
Waterloo, Ontario N2V 1C2
Canada

Laboratory Testing Results
Livonia (#12607-207-0002)

Dear Mr. Hoekstra:

On August 25, 2004, GAI laboratory received the following samples representing site materials from the General Motors Site in Livonia, MI.

Site Sand – 3 5 gallon buckets

Site Silt – 1 5 gallon bucket

Site Key Clay – 1 5 gallon bucket

Site Tap Water – 2 5 gallon buckets

Site groundwater from GWTP influence August 24, 2004 – 1 5 gallon bucket

Respective soils were mixed prior to subsampling for laboratory classification testing. Site water was used to prepare a Standard API 13A bentonite slurry using Fed Jel 90. As per your request, two composite soil blends were generated on a wet weight basis as follows:

- Blend #1 Silt 20%; 5% clay; sand 75%
- Blend #2 Silt 40%; 10% clay; sand 50%
- Blend #2 met fines requirement of 25% and was used in the Actual Batch Testing.

Four Batch mix Design, based on your directive, were then generated. They are as follows:

- Mix #1 (control) Blend #2 with 0% bentonite
- Mix #2 Blend #2 + Fed Jel 90 Slurry to Slump
- Mix #3 Blend #2 + 2% Dry Fed Jel 90 + Slurry to Slump
- Mix #4 Blend #2 + 4% Dry Fed Jel 90 + Slurry to Slump

Representative material was removed from each mix, consolidated and placed into hydraulic conductivity testing. Specimens were permeated with Deaired Pittsburgh Tap Water and then at your request switched over to ground water. Mix #1 was eliminated from the testing program after the tap water hydraulic conductivity was completed. Testing was performed in accordance with following standards:

1. American Petroleum Institute (API 13A/13B) Standard Procedure for Drilling-Fluid Materials
2. American Society for Testing and Materials (ASTM D2487, Classification of Soils for Engineering Purposes
3. ASTM D 422 Particle Size Analysis of Soil

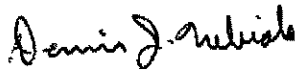
C.R. Hoekstra
Project C040456.10
September 23, 2004

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4. ASTM D4318, Liquid Limit, Plastic Limit and Plasticity Index of Soils
5. ASTM D2216, Laboratory Determination of (Moisture) Content
6. ASTM D1140, Amount of Material in Soils Finer than the No. 200 Sieve
7. ASTM D 5084, Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter

The results of the laboratory testing are attached.

Sincerely,
GAI Consultants, Inc.



Dennis J. Nebiolo
Sr. Laboratory Technician

DJN/bas

Enclosure

**CRA
GENERAL MOTORS SITE
LIVONIA, MI.**

C040466.10

Hydraulic Conductivity Testing Summary

Phase 2 to Phase 3

NO. NUMBER	DESCRIPTION	Borehole	Batching Data										HYDRAULIC CONDUCTIVITY (cm/sec)							
			Bentonite Slurry Added (%) ¹	Bentonite Dry Added (%) ²	Bentonite Total Addition (%) ²	Mid Slump (in.)	End Slump (in.)	Moisture Content (%)	30-sec Retention (sec)	pH	Waters K ₂ SO ₄ (%)	Final % (ppm)	Waters 250 perm. spec. (µ)	Type	PERMEANT (Measured)	DETAILED-TAP PORE VOLUMES	LEACHATELY PORE VOLUMES	TAP K (cm/sec)	LEACH K (cm/sec)	
1 (control)	50% sand 40% sil 10% lay clay	None	0	0	0	2.000	5.9	18.84	130.9	7.74	72.8	118.0	28.7	Flowcell	Site Tap Water	7.8		4.2 x 10 ⁻⁸		
2	50% sand 40% sil 50% lay clay	Fed-Jul-80	0.28	0	0.28	2.125	8.1	21.4	127.2	7.85	28.4			Flowcell	Site Tap Water / LeadPb ³	8.8	2.8	1.0 x 10 ⁻⁸	1.3 x 10 ⁻⁸	
3	50% sand 40% sil 10% lay clay	Fed-Jul-80	0.54	2.17	2.7	2.003	8.0	21.4	123.9	8.00	29.8			Flowcell	Site Tap Water / LeadPb ³	0.14	0.23	8.8 x 10 ⁻⁸	8.0 x 10 ⁻⁸	
4	50% sand 40% sil 10% lay clay	Fed-Jul-80	0.8	4.3	5.2	1.878	5.8	30.9	118.2	8.08	33.2			Flowcell	Site Tap Water / LeadPb ³	0.033	0.05	2.8 x 10 ⁻⁸	2.0 x 10 ⁻⁸	

¹ Amount of bentonite added is calculated on a dry weight basis of soil.
Slurry added to produce a slump between four and six inches.

² Groundwater from GWPT Inflow 10/24/04

	In progress
	Final
	Unchecked values

LABORATORY TESTING SUMMARY
CRA
GENERAL MOTORS SITE
LIVONIA, MICHIGAN

Project No. : C040456.10

SOIL

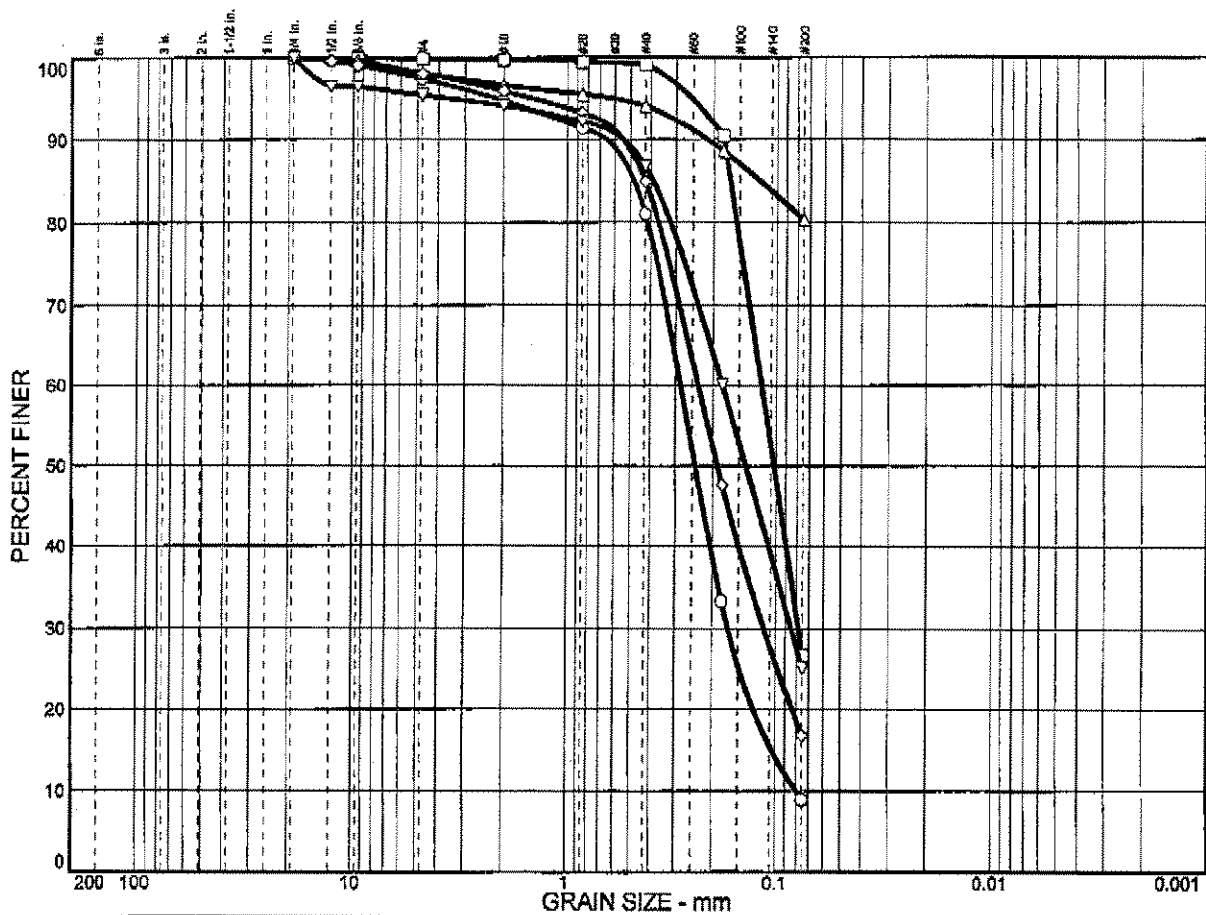
IDENTIFICATION	DATE RECEIVED	DESCRIPTION	MOISTURE CONTENT %	GRAIN SIZE % PASSING - SIEVES			LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	USCS SYMBOL
				#4	#40	#200				
Site Soils & Composites	08/30/04									
Site Sand	08/30/04	Poorly graded sand with silt	16.6	97.4	81	8.9	NV *	NP *	NP *	SP-SM
Site Silt	08/30/04	Silty sand	20.3	99.8	99.1	28.7	NV *	NP *	NP *	SM
Key Clay	08/30/04	Lean clay with sand	17.7	98.1	94.0	80.9	29.6	16.6	13.0	CL
Composite #1 ¹	09/08/04	Silty sand	18.4	98.0	84.9	18.8	--	--	--	SM
Composite #2 ²	09/09/04	Silty sand	17.3	95.4	88.7	25.1	--	--	--	SM

¹ Sand 75% : Silt 20% : Clay 5% by total wet weight

² Sand 50% : Silt 40% : Clay 10% by total wet weight

* NV - non-viscous NP - non-plastic

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.6	88.5	8.9	
□	0.0	0.2	73.1	26.7	
△	0.0	1.9	17.8	80.3	
◇	0.0	2.0	81.2	16.8	
▽	0.0	4.6	70.3	25.1	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	USCS
○		Site Sand		Poorly graded sand with silt	SP-SM
□		Site Silt		Silty sand	SM
△		Key Clay		Lean clay with sand	CL
◇		Comp.#1		Silty sand	SM
		75%:20%:5%			



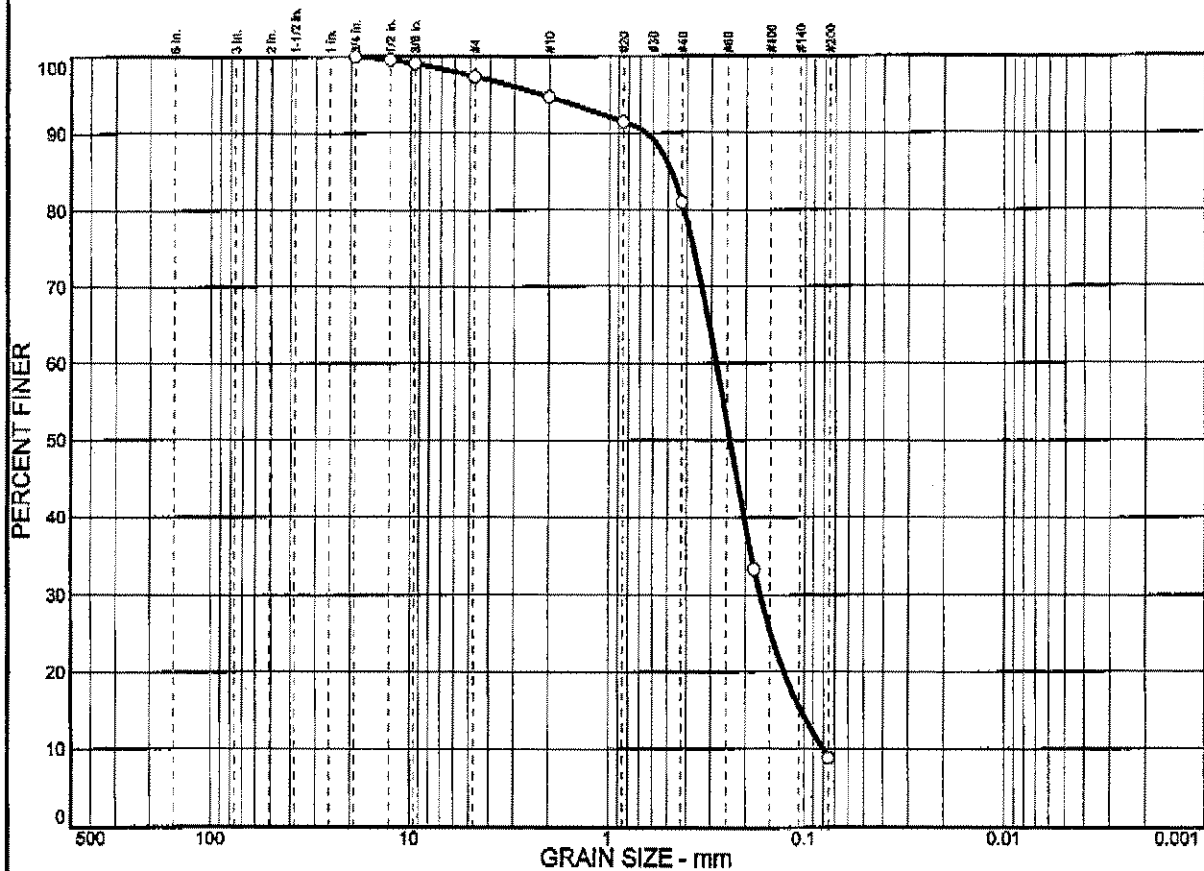
Client: Conestoga-Rovers & Associates

Project: Eckles Road Site Livonia MI. 12607-204

Project No.: C040456.10

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.6	88.5		8.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
0.5 in.	99.6		
0.375 in.	99.1		
#4	97.4		
#10	94.7		
#20	91.4		
#40	81.0		
#80	33.3		
#200	8.9		

* (no specification provided)

Soil Description

Poorly graded sand with silt

Atterberg Limits

PL= NP

LL= NV

PI= NP

Coefficients

D₈₅= 0.482

D₆₀= 0.284

D₅₀= 0.242

D₃₀= 0.168

D₁₅= 0.104

D₁₀= 0.0799

C_u= 3.56

C_c= 1.24

Classification

USCS= SP-SM

AASHTO=

Remarks

Tested by DJN

Entered by DJN

Checked by DFS

Sample No.: Site Sand
Location: Site Sand

Source of Sample:

Date: 09/03/04
Elev./Depth:



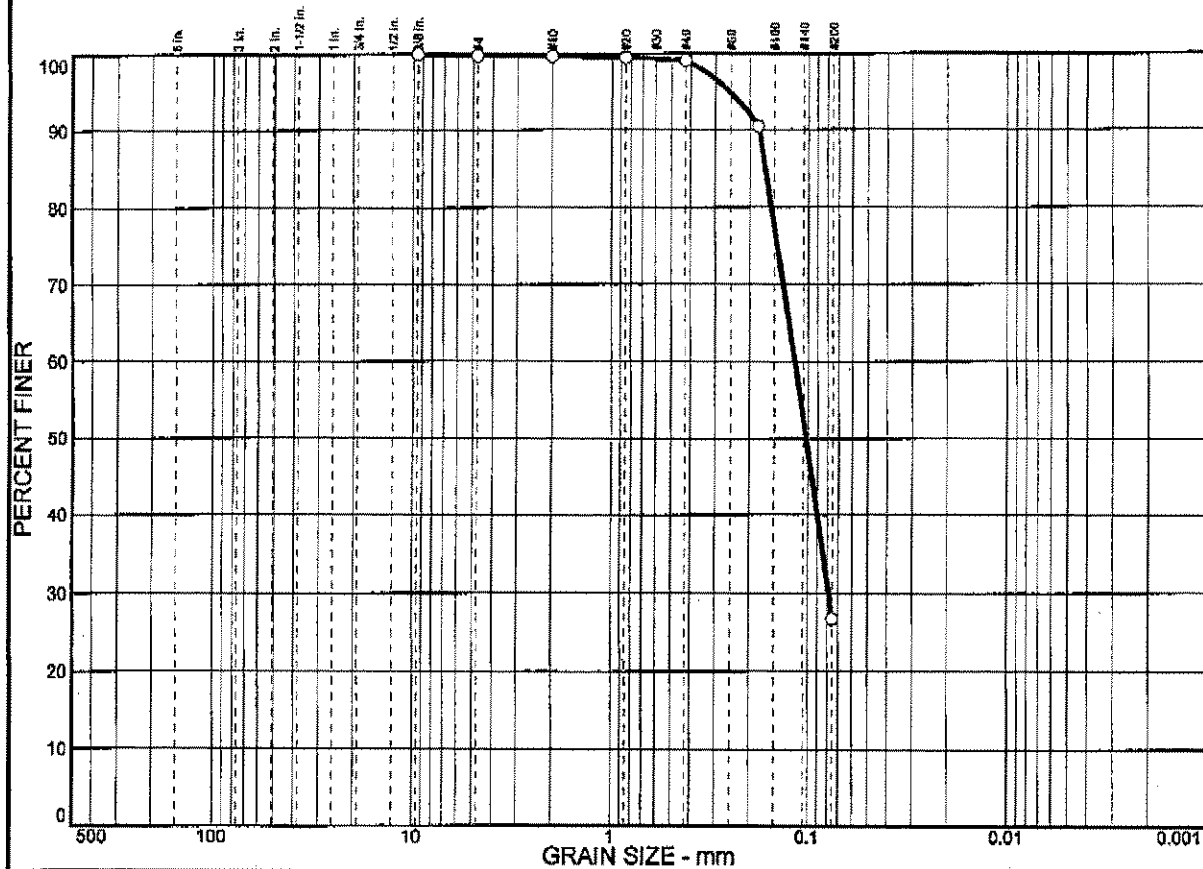
Client: Conestoga-Rovers & Associates

Project: Eckles Road Site Livonia MI. 12607-204

Project No: C040456.10

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	73.1	26.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.375 in.	100.0		
#4	99.8		
#10	99.7		
#20	99.5		
#40	99.1		
#80	90.4		
#200	26.7		

Soil Description

Silty sand

PL= NP

Atterberg Limits

$$L = N$$


Coefficients

$$D_{R5} = 0.167$$
 $D_{\text{an}} = 0,118$ $D_{50} = 0.103$
$$D_{30} = 0.0784$$

015

D10=

C-338

Cc#

Classification

USCS= SM

AASHTO

Remarks

Tested by DJN

Entered by DJN

Checked by DFS

(no specification provided)

Sample No.: Site Silt

Location: Site silty sand

Source of Sample:

Date: 09/03/04

Elev./Depth:



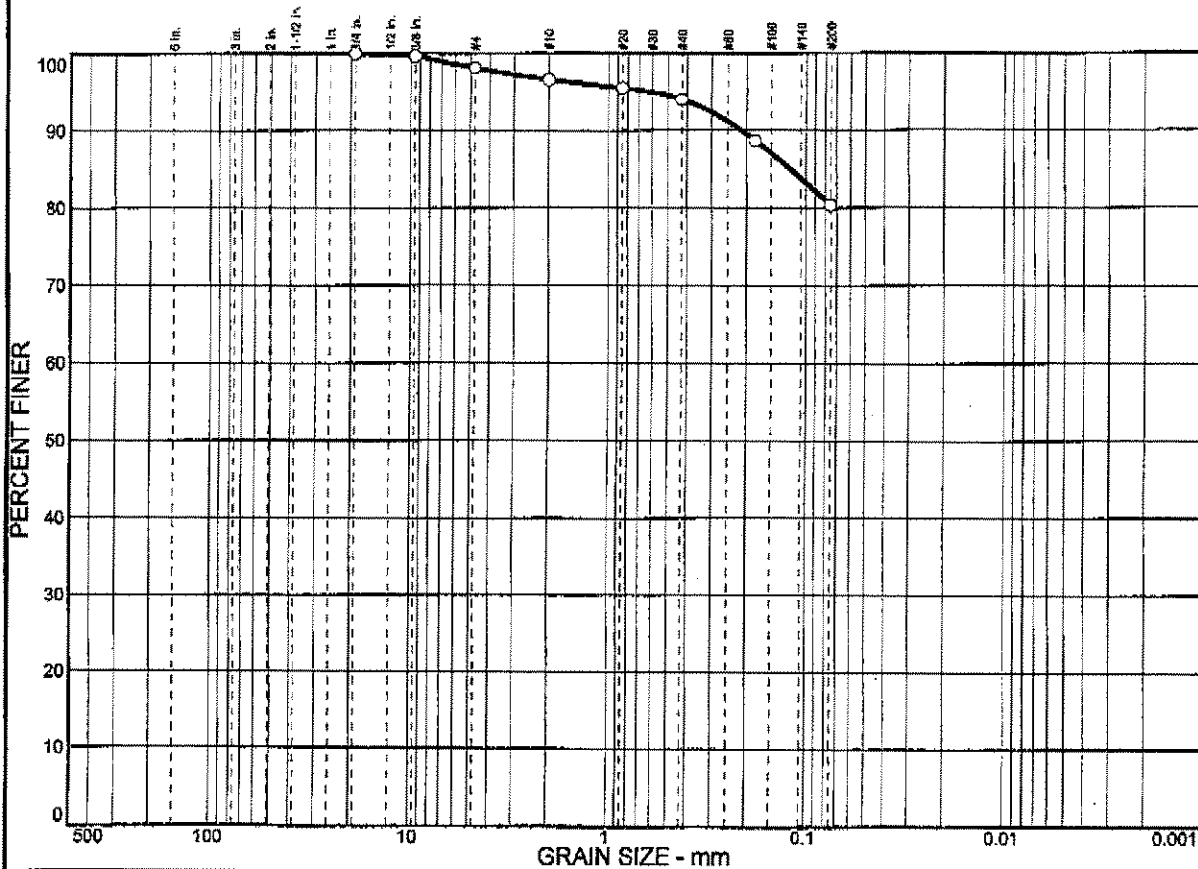
Client: Conestoga-Rovers & Associates

Project: Eckles Road Site Livonia MI. 12607-204

Project No: C040456.10

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	1.9	17.8	80.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
0.375 in.	99.7		
#4	98.1		
#10	96.6		
#20	95.5		
#40	94.0		
#80	88.6		
#200	80.3		

Soil Description

Lean clay with sand

Atterberg Limits

PL= 16.6

LL= 29.6

PI= 13.0

Coefficients

D₈₅= 0.121D₆₀=D₅₀=D₃₀=D₁₅=D₁₀=C_u=C_c=

Classification

USCS= CL

AASHTO=

Remarks

Tested by DFS

Entered by DJN

Checked by DFS

* (no specification provided)

Sample No.: Key Clay
Location: Key - clay

Source of Sample:

Date: 09/05/04
Elev./Depth:



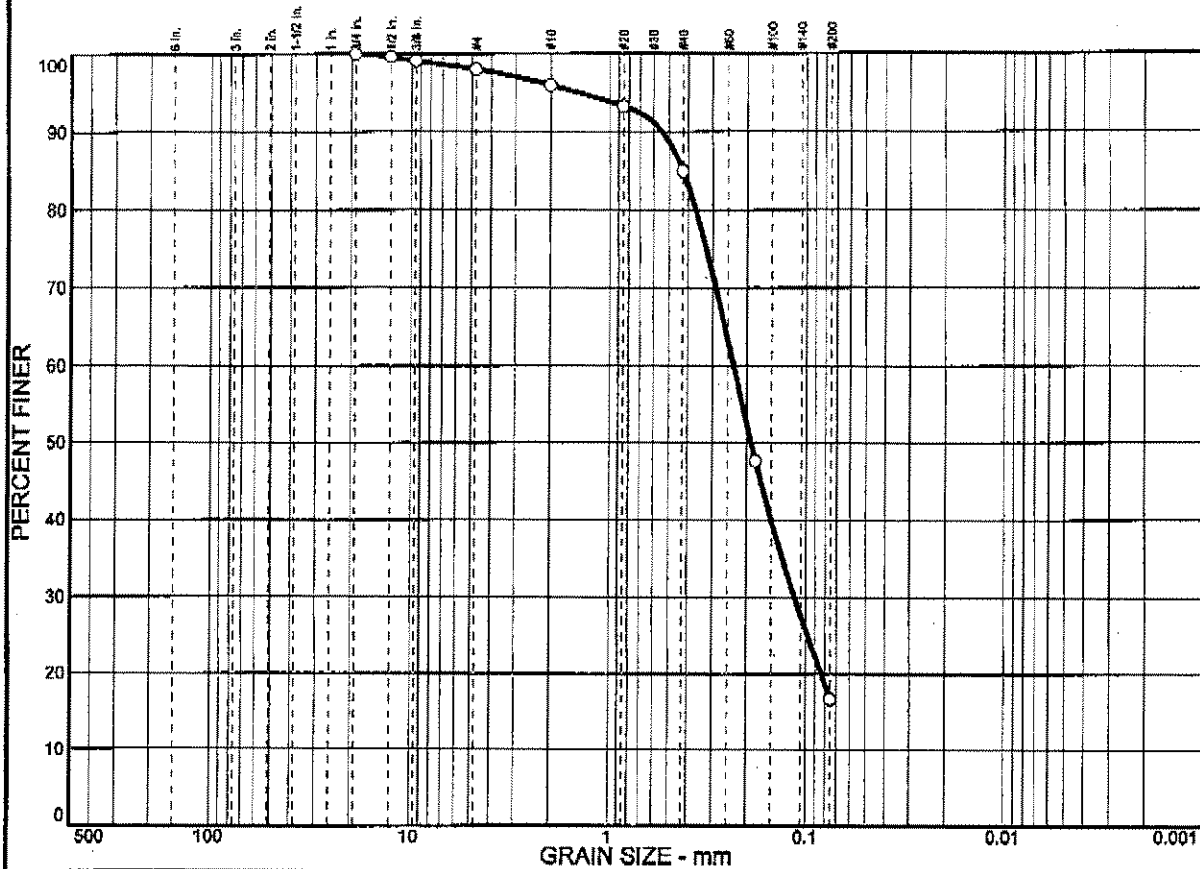
Client: Conestoga-Rovers & Associates

Project: Eckles Road Site Livonia MI. 12607-204

Project No: C040456.10

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.0	81.2	16.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
0.50 in.	99.6		
0.375 in.	99.1		
#4	98.0		
#10	95.9		
#20	93.2		
#40	84.9		
#80	47.6		
#200	16.8		

(no specification provided)

Soil Description

Silty sand

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₈₅= 0.427D₆₀= 0.234D₅₀= 0.190D₃₀= 0.114D₁₅=D₁₀=C_u=C_c=

Classification

USCS= SM

AASHTO=

Remarks

Tested by DJN

Entered by DJN

Checked by DFS

Sample No.: Comp.#1 75%:20%:5% Source of Sample:
 Location: Composite #1 - 75% sand 20% silt 5% key

Date: 09/08/04
 Elev./Depth:

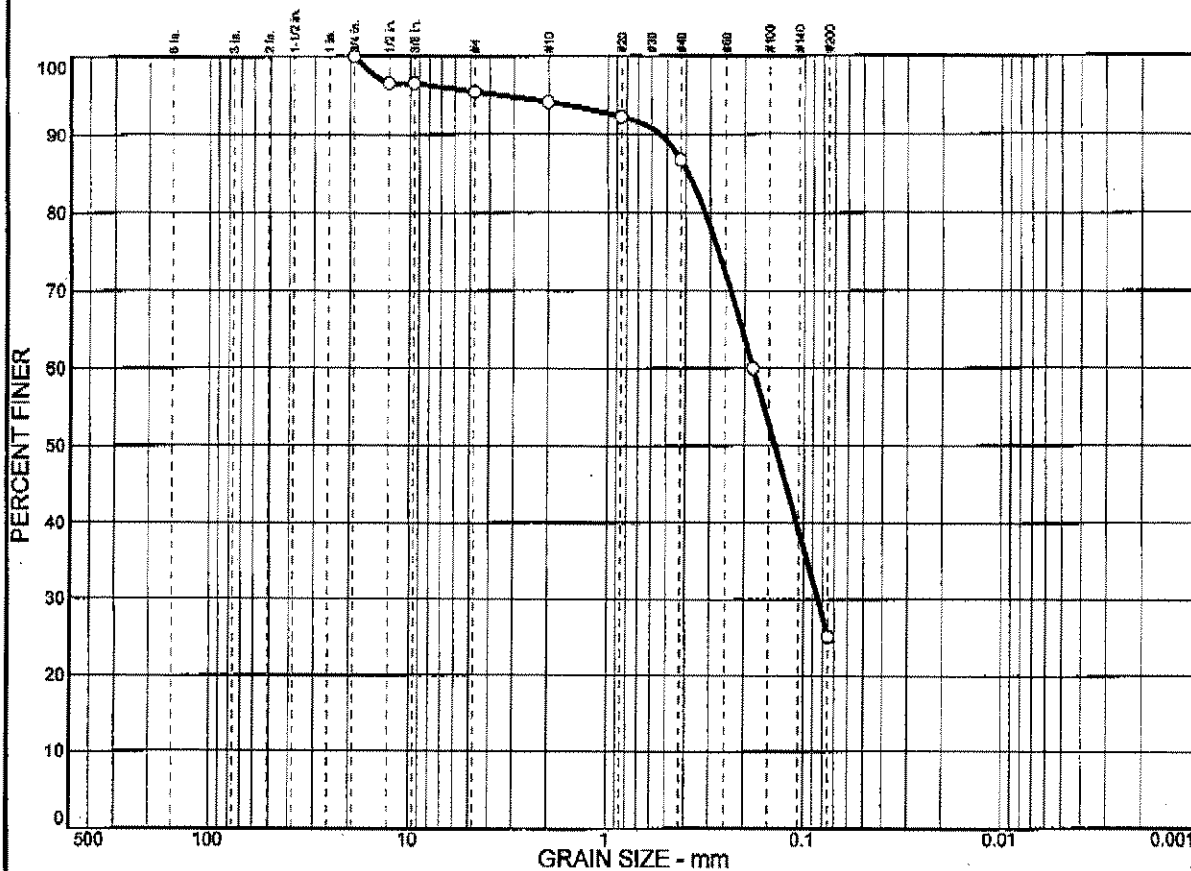


Client: Conestoga-Rovers & Associates
 Project: Eckles Road Site Livonia MI. 12607-204

Project No: C040456.10

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	4.6	70.3	25.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
0.50 in.	96.5		
0.375 in.	96.5		
#4	95.4		
#10	94.1		
#20	92.2		
#40	86.7		
#80	60.0		
#200	25.1		

Soil Description

Silty sand

Atterberg Limits

PL=

U=

非

Coefficients

 $D_{85} = 0.390$
$$D_{50} = 0.180$$

D₅₀= 0.139

 $D_{30} = 0.0846$

D-15=

D-10=

 $C_{U=}$ $C_{C\#}$

Classification

USCS= SM

AASHTO=

Remarks

Tested by DJN

Entered by DJN

Checked by DFS

(no specification provided)

Sample No.: Comp.#2 50%:40%:10% **Source of Sample:**

Location: Composite #2 -50% sand 40% silt 10% clay

Date: 09/09/04

Elev./Depth:



Client: Conestoga-Rovers & Associates

Project: Eckles Road Site Livonia MI. 12607-204

Project No: C040456.10

Figure

LABORATORY TESTING SUMMARY
CRA
GENERAL MOTORS SITE LIVONIA, MICHIGAN
BENTONITE SUSPENSION PROPERTIES

09/24/2004 11:17 GAI → 915198840525

NO. 256 P013

GAI Consultants, Inc.

CRA
General Motors Site
Livonia, MI.

C040456.10

Soil / Bentonite

Date: 09/10/04

Mix No. #1

soil moisture content

Soil:	Composite	Borrow	NA	site composite	Borrow
				tare no. L-48	tare no.
Wt. of soil	4000 g	Wt. of soil		wt. tare + ws	918.68 g
WC. of soil	17.38%	WC. of soil		wt. tare + ds	784.32 g
Dry wt. of soil	3409.1 g	Dry wt. of soil		tare wt.	9.20 g
				%	17.33%
Total Wet Wt. of soil component		3409.1 g		Total Dry Wt. of soil component	

<u>Bentonite Slurry</u>	NA	Initial tare + site tap water	206.25
Bentonite		Final tare + site tap water	105.33
% solids		Water wt. added (grams)	100.92
Wt. of slurry			
Dry wt. of bentonite			
Wt. of water			
pH			

SBsoil / bentonite wc.

Slump (lab size)	2.0 in. (1.0 in. to 2.1 in.)	tare no.	L-50
Density (mud balance)	130.0 pcf	wt. tare + ws	280.96 g
WC.	18.64%	wt. tare + ds	238.27 g
pH	7.74	tare wt.	9.20 g
		%	18.64%

Date Batched: 09/10/04 Time Batched: 8:00

GAI Consultants, Inc.

CRA
General Motors Site
Livonia, MI.

C040456.10

Soil / Bentonite

Date: 09/10/04

Mix No. #3

soil moisture content

Soil: Composite

Wt. of soil 4000 g

WC of soil 16.85%

Dry wt. of soil 3423.2 g

Wt. of soil

WC of soil

Dry wt. of soil

site composite

tare no. L-71

wt. tare + ws 288.27 g

wt. tare + ds 247.87 g

tare wt. 8.15 g

% 16.85%

Bentonite

tare no.

wt. tare + ws

wt. tare + ds

tare wt.

%

Total Wet Wt. of soil component

3423.2 g

Total Dry Wt. of soil component

Bentonite Slurry

Bentonite Fed Jel 90

% solids 5.56%

Wt. of slurry 307.44 g

Dry wt. of bentonite 17.09 g

Wt. of water 290.35 g

pH 8.30

Initial tare + slurry 1849.10 g

Final tare + slurry 1541.66 g

Slurry wt. added 307.44 g

SB

Slump (lab size) 2.0625 in. (1.0 in. to 2.1 in.)

Density (mud balance) 123.6 pcf

WC. 24.40%

pH 8.00

soil / bentonite wc.

tare no. L-25

wt. tare + ws 265.92 g

wt. tare + ds 215.37 g

tare wt. 8.21 g

% 24.40%

Date Batched: 09/10/04

Time Batched:

11:30

Bentonite via slurry - 0.54%

Bentonite dry addition - 2.17%

Total Bentonite addition - 2.70%

GAI Consultants, Inc.

CRA
General Motors Site
Livonia, MI.

C040456.10

Soil / Bentonite

Date: 09/10/04

Mix No. 4

soil moisture content

Soil: Composite~~Borrow~~

site composite

~~borrow~~

tare no. L-64

~~tare no.~~

wt. tare + ws 481.02

~~wt. tare + ws~~

wt. tare + ds 410.69

~~wt. tare + ds~~

tare wt. 8.21

~~tare wt.~~

% 17.47

~~%~~

Wt. of soil 4000 g

~~Wt. of soil~~

WC. of soil 17.47%

~~WC. of soil~~

Dry wt. of soil 3405.0 g

~~Dry wt. of soil~~

Total Wet Wt. of soil component

4000 g

Total Dry Wt. of soil component

3405.0 g

Bentonite Slurry

Bentonite Fed Jel 90
% solids 5.56%
Wt. of slurry 520.47
Dry wt. of bentonite 28.94
Wt. of water 491.53
pH 8.30

Initial tare + slurry 1540.32 g
Final tare + slurry 1019.85 g
Slurry wt. added 520.47 g

SB

soil / bentonite wc.

Slump (lab size) 1.875 in. (1.0 in. to 2.1 in.)
Density (mud balance) 119.2 pcf
WC. 30.34%
pH 8.05

tare no. L-39
wt. tare + ws 424.97 g
wt. tare + ds 327.95 g
tare wt. 8.16 g
% 30.34

Date Batched: 09/10/04 Time Batched: 7:00

Bentonite via slurry - 0.9%

Bentonite dry addition - 4.3%

Total Bentonite addition - 5.20%

GAI Consultants, Inc.
Amount of Material in Soils Finer Than the No. 200 Sieve
ASTM D 1140

Project : CRA
 Project No. : C040456.10

Tested by : DJN
 Date tested : 09/12/04
 Checked by : DFS

Sample : Mix # 1

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare 635.57 g
 Tare 0 g
 Soil (Wet) _____
 Soil (Dry) 635.57 g

Washed Sample Weight

Soil + Tare 492.37 g
 Tare 0 g
 Soil 492.37 g

% Passing #200 = 22.5%

Sample : Mix # 2

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare 596.44 g
 Tare 0 g
 Soil (Wet) _____
 Soil (Dry) 596.44 g

Washed Sample Weight

Soil + Tare 427.12 g
 Tare 0 g
 Soil 427.12 g

% Passing #200 = 28.4 %

Sample : Mix # 3

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare 532.91 g
 Tare 0 g
 Soil (Wet) _____
 Soil (Dry) 532.91 g

Washed Sample Weight

Soil + Tare 392.71 g
 Tare 0 g
 Soil 392.71 g

% Passing #200 = 26.3 %

GAI Consultants, Inc.
Amount of Material in Soils Finer Than the No. 200 Sieve
ASTM D 1140

Project : CRA
 Project No. : C040456.10

Tested by : DJN
 Date tested : 09/12/04
 Checked by : DFS

Sample : Mix # 4

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare 500.93 g
 Tare 0 g
 Soil (Wet) _____
 Soil (Dry) 500.93 g

Washed Sample Weight

Soil + Tare 334.69 g
 Tare 0 g
 Soil 334.69 g

% Passing #200 = 33.2 %

Sample :

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare _____
 Tare _____
 Soil (Wet) _____
 Soil (Dry) _____

Washed Sample Weight

Soil + Tare _____
 Tare _____
 Soil _____

% Passing #200 = %

Sample :

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare _____
 Tare _____
 Soil (Wet) _____
 Soil (Dry) _____

Washed Sample Weight

Soil + Tare _____
 Tare _____
 Soil _____

% Passing #200 = %

GAI Consultants, Inc.
Amount of Material in Soils Finer Than the No. 200 Sieve
ASTM D 1140

Project : CRA
 Project No. : C040456.10

Tested by : DJN
 Date tested : 09/12/04
 Checked by : DFS

Sample : Mix # 1 perm. Specimen

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare 490.12 g
 Tare 16.17 g
 Soil (Wet) _____
 Soil (Dry) 473.95 g

Washed Sample Weight

Soil + Tare 338.04 g
 Tare 0.0 g
 Soil 338.04 g

% Passing #200 = 28.7 %

Sample :

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare _____
 Tare _____
 Soil (Wet) _____
 Soil (Dry) _____

Washed Sample Weight

Soil + Tare _____
 Tare _____
 Soil _____

% Passing #200 = %

Sample :

Water Content of Sample

Tare + WS _____
 Tare + DS _____
 Tare _____
 W.C. _____

Total Sample Weight

Soil + Tare _____
 Tare _____
 Soil (Wet) _____
 Soil (Dry) _____

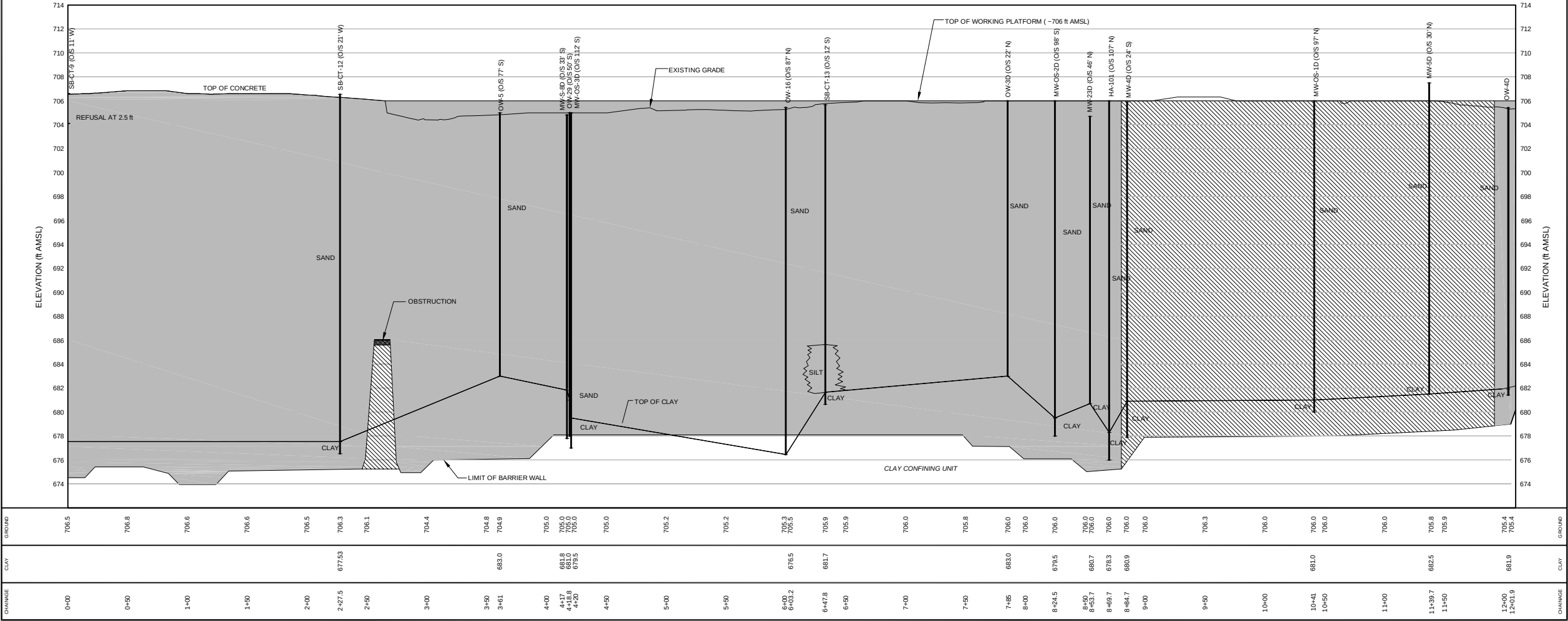
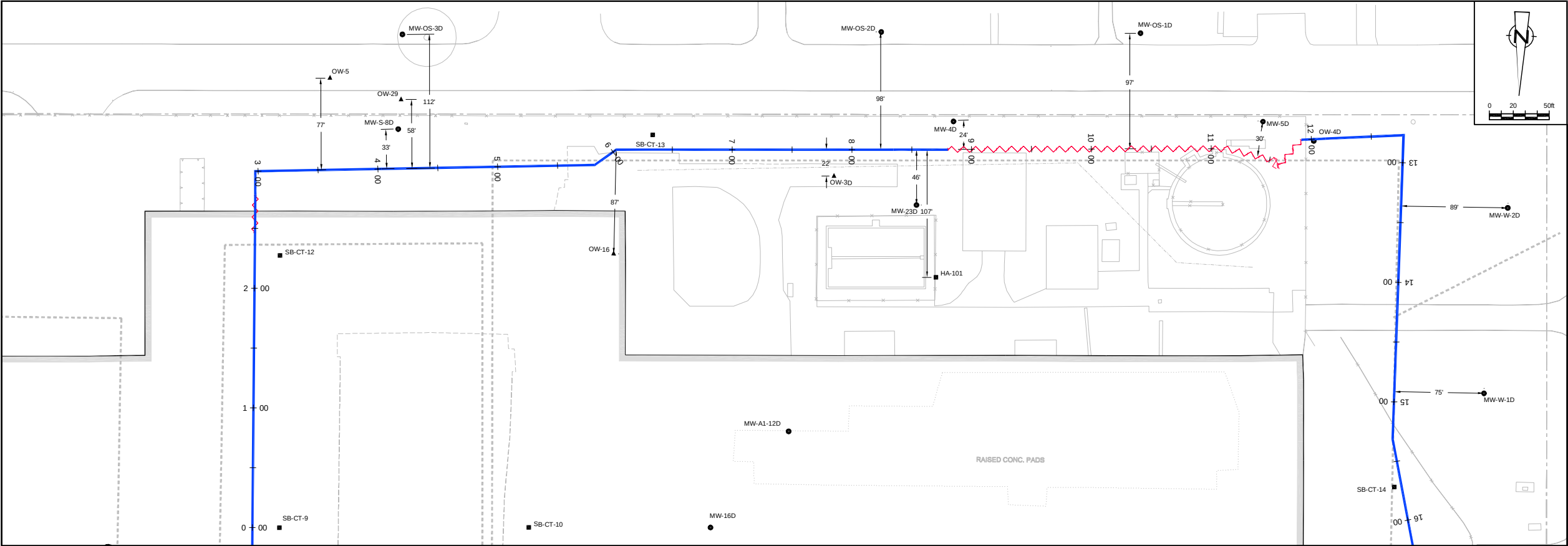
Washed Sample Weight

Soil + Tare _____
 Tare _____
 Soil _____

% Passing #200 = %

APPENDIX B

AS-RECORDED DRAWINGS

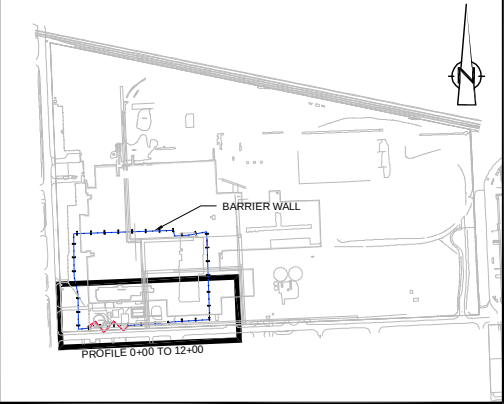


Nº	Revision	Date	Initial

LEGEND

- SITE BOUNDARY
- BARRIER WALL ALIGNMENT
- JET GROUTED BARRIER WALL
- CONCRETE SLAB
- FRENCH DRAIN COLLECTION SYSTEM
- FENCE
- AOI AREA
- LOCATION INDICATING DEPTH TO CLAY ALONG BARRIER WALL
- SOIL-BENTONITE BARRIER WALL
- JET GROUT BARRIER WALL

KEY MAP
SCALE: 1"=700'



SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved		

DRAWING STATUS		

13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN

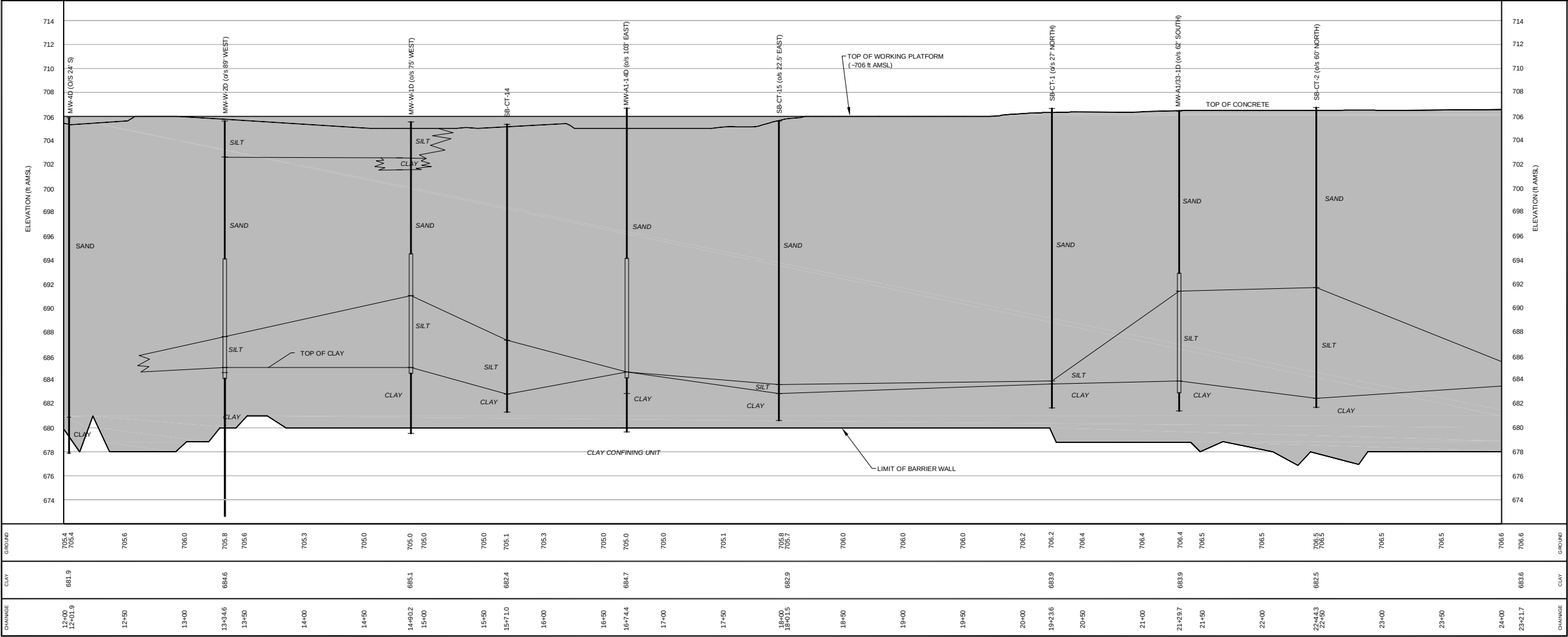
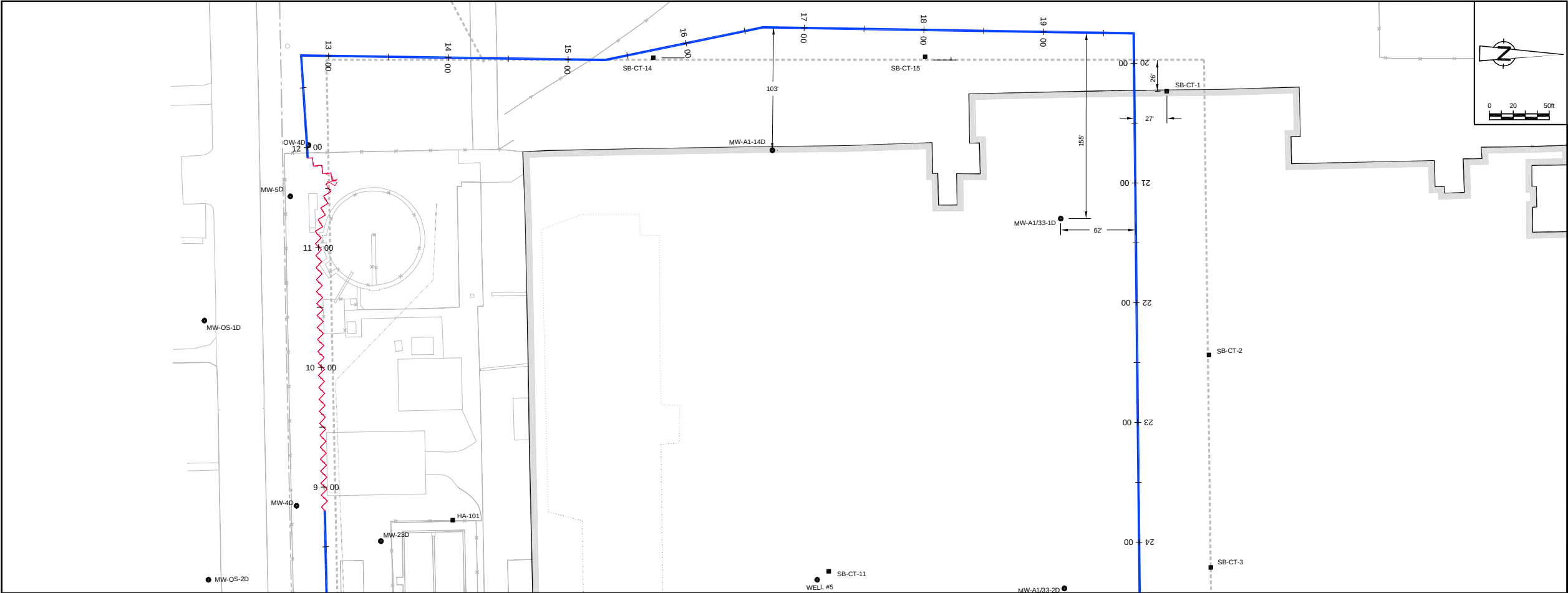
AREA 1 BARRIER WALL

BARRIER WALL PLAN AND PROFILE
0+00 TO 12+00

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager: M.T.	Reviewed By: A.T.	Date: NOVEMBER 2006
Scale: HORZ. 1"=50' VERT. 1"=5'	Project N°: 12607-211	Report N°: 044 Drawing N°: 2

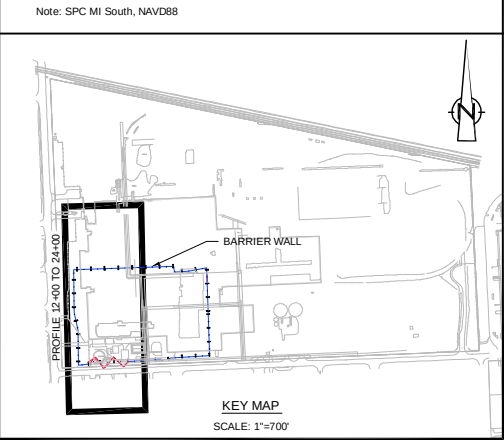


Nº	Revision	Date	Initial

LEGEND

- SITE BOUNDARY
- BARRIER WALL ALIGNMENT
- JET GROUTED BARRIER WALL
- CONCRETE SLAB
- FRENCH DRAIN COLLECTION SYSTEM
- FENCE
- AOI AREA
- LOCATION INDICATING DEPTH TO CLAY ALONG BARRIER WALL
- SOIL-BENTONITE BARRIER WALL

Note: SPC MI South, NAVD88



SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS		
AS RECORDED	NOV /06	MRT
ISSUED FOR CONSTRUCTION	SEPT 27/04	CRH
ISSUED FOR BID	SEPT 1/04	CRH
ISSUED TO CLIENT FOR REVIEW	AUG 27/04	CRH
Status	Date	Initial

**13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

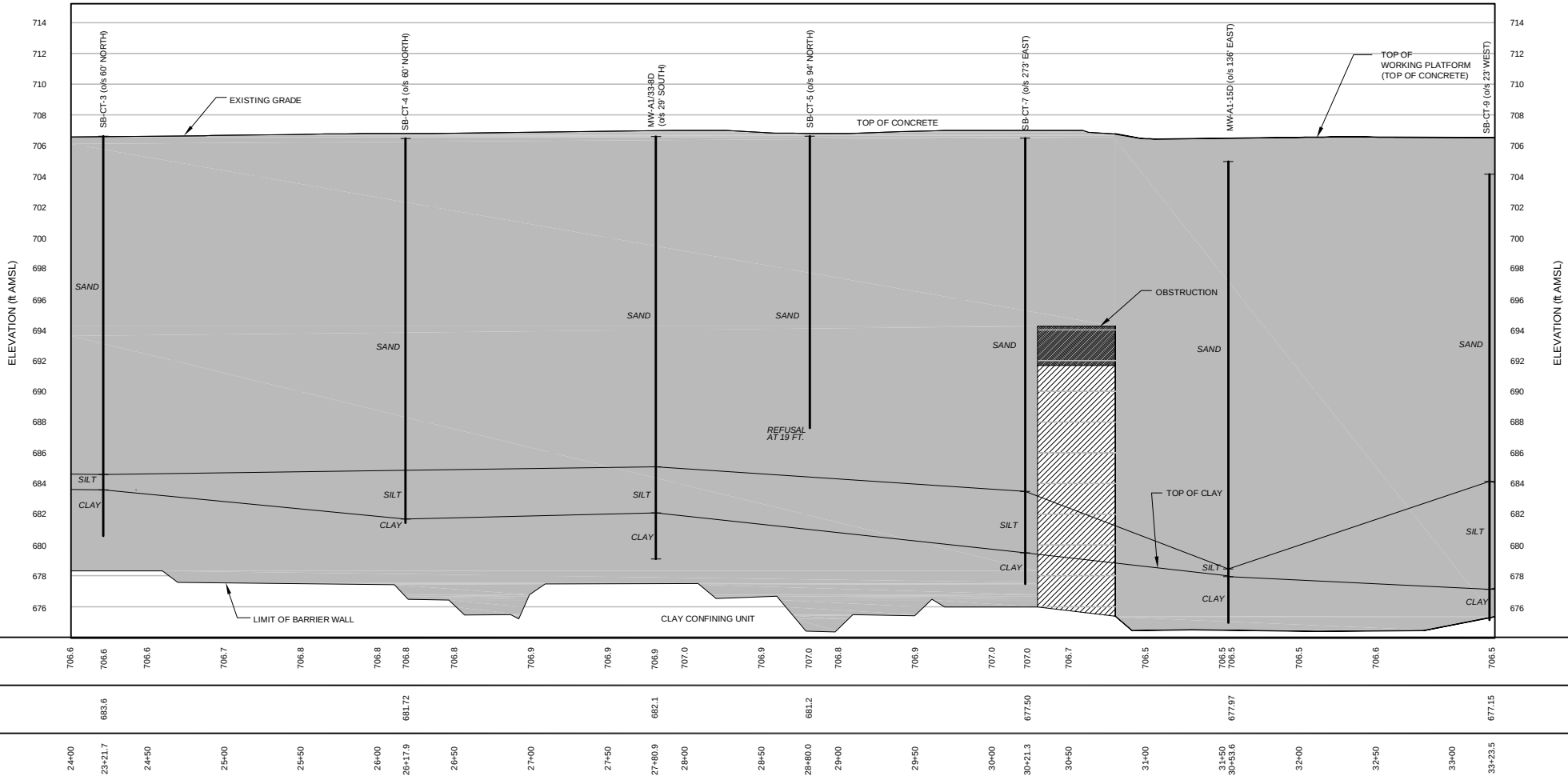
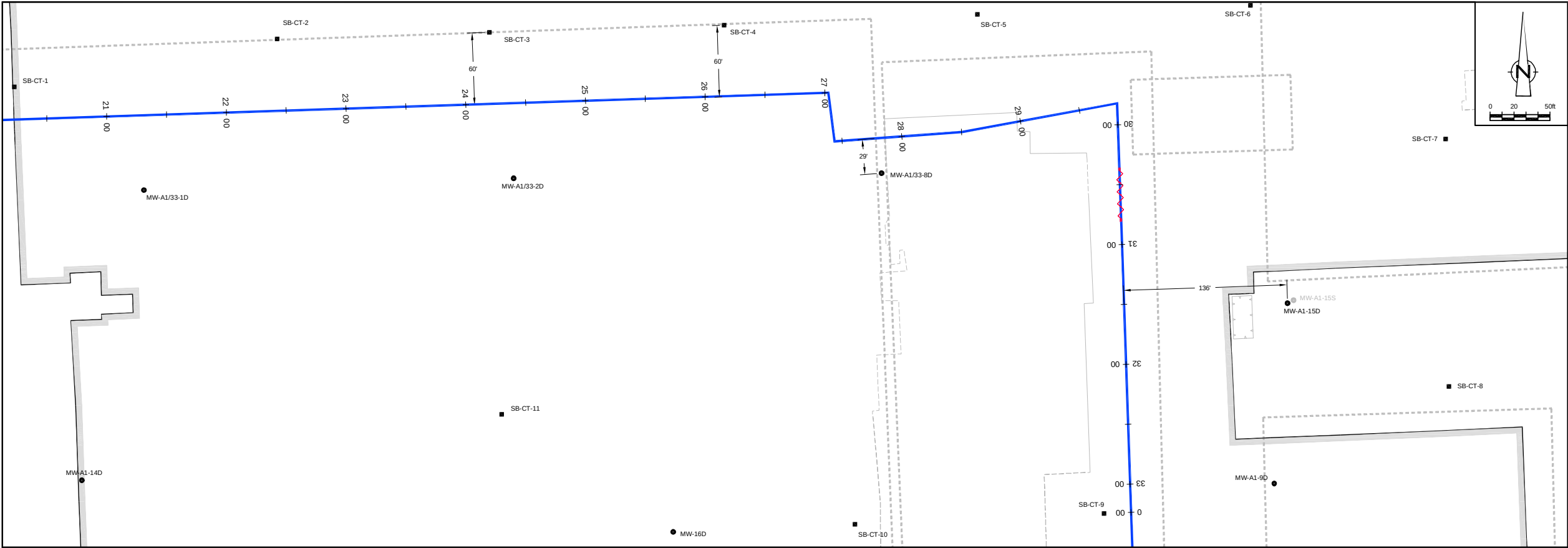
AREA 1 BARRIER WALL

**BARRIER WALL PLAN AND PROFILE
12+00 TO 24+00**

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

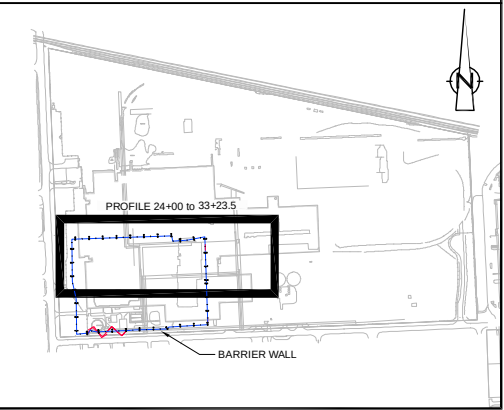
Project Manager: M.T.	Reviewed By: A.T.	Date: NOVEMBER 2006
Scale: HOZ. 1"=50' VER. 1"=5'	Project N°: 12607-211	Report N°: 044 Drawing N°: 3



Nº	Revision	Date	Initial

- LEGEND**
- SITE BOUNDARY
 - BARRIER WALL ALIGNMENT
 - ~ JET GROUTED BARRIER WALL
 - CONCRETE SLAB
 - FRENCH DRAIN COLLECTION SYSTEM
 - FENCE
 - AOI AREA
 - ■ ▲ LOCATION INDICATING DEPTH TO CLAY ALONG BARRIER WALL
 - SOIL-BENTONITE BARRIER WALL
 - ▨ JET GROUT BARRIER WALL

KEY MAP
SCALE: 1"=700'



SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.



Approved		

DRAWING STATUS

AS RECORDED	NOV /06	MRT
ISSUED FOR CONSTRUCTION	SEPT 27/04	CRH
ISSUED FOR BID	SEPT 1/04	CRH
ISSUED TO CLIENT FOR REVIEW	AUG 27/04	CRH
Status	Date	Initial

**13000 ECKLES ROAD SITE
LIVONIA, MICHIGAN**

AREA 1 BARRIER WALL

**BARRIER WALL PLAN AND PROFILE
24+00 to 33+23.5**



Source Reference:			
Project Manager: M.T.	Reviewed By: A.T.	Date: NOVEMBER 2006	
Scale: HORZ. 1"=50' VERT. 1"=5'	Project Nº: 12607-211	Report Nº: 044	Drawing Nº: 4

APPENDIX C

DAILY CONTRACTOR QUALITY CONTROL REPORTS – SOIL-BENTONITE SLURRY WALL



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/11/04
Shift: 7:00am - 5:00pm
Weather: Clear

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con	Equipment Onsite
Testing Performed Today 	Meetings Held Today Toolbox Safety Site Specific Training
Activities Today Walked Trench alignment Received Verbal permission to move east trench alignment 11.5 feet to the East to avoid several I-Beams visible on surface. Painted 6' trench width lines in preparation for sawcutting tomorrow. Began placing orange barrier fence around work area on West Side	
Issues/Deficiencies I-Beams in trench alignment on East Side	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
URS Corp.
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/12/04
Shift: 7:00am - 5:00pm
Weather: Clear

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con American 1 sawcut operator	Equipment Onsite 330 CAT
Testing Performed Today	Meetings Held Today Toolbox Safety Site Specific Training
Activities Today American Concrete Onsite - Sawcut driveway. Received verbal permission to relocate small portion of West alignment to avoid Metal vault along driveway - no change in square footage Completed placement of orange barrier fence around work area on West Side Received water usage permit, meter and backflow preventer from City of Livonia	
Issues/Deficiencies	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By:

Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

[Signature]
~~URS Corp.~~
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/¹³~~12~~/04
Shift: 7:00am - 5:00pm
Weather: P. Cloudy - Showers

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con CC&B 2 Sawcut operators	330 CAT CAT 460 Backhoe and Concrete Hammer 2 Concrete Saws (CC&B)
Testing Performed Today	Meetings Held Today
	Toolbox Safety Site Specific Training
Activities Today	
Offset slurry trench alignment on West side to prepare for pretrenching Sawcut operators cut 1880LF (940LF both sides) of Trench Alignment - depth was 8 to 10 inches. Began Pretrenching - Pre trenched 500LF and located utilities to be abandoned - see pretrench log for additional information.	
Issues/Deficiencies	Materials Received

On behalf of the contractor, I certify this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

SDH
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/¹⁴~~12~~/04
Shift: 7:00am - 5:00pm
Weather: Overcast, Rain

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con CC&B 1 Sawcut operator	Equipment Onsite 330 CAT CAT 460 Backhoe and Concrete Hammer 1 Concrete Saw (CC&B)
Testing Performed Today	Meetings Held Today Toolbox Safety Weekly Progress Meeting Next weeks meeting moved to Wednesday at 1:00pm
Activities Today Sawcut operators cut 980LF (490LF both sides) of Trench Alignment - depth was 8 to 10 inches. Completed Sawcutting Continued Pretrenching - Pre trenched 185LF and located utilities to be abandoned - see pretrench log for additional information. Performed several "exploratory" pre trenches along West alignment - believed to be directly over 42" Storm Line which is full of water. Received response to Sediment and Erosion Control Permit - One is not required for our scope of work - A letter will follow to document this.	
Issues/Deficiencies Believed to be directly over 42" Storm line on West side, requesting change in alignment 20' to west.	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: SDM
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/15/04
Shift: 7:00am - 5:00pm
Weather: Overcast, Rain

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Operator Geo-Con	Equipment Onsite 330 CAT CAT 460 Backhoe and Concrete Hammer 330 CAT w/ 10,000lb Breaker
Testing Performed Today	Meetings Held Today Toolbox Safety
Activities Today Continued Breaking and Removing Concrete along trench alignment. Continued Pretrenching - Pre trenched 170LF and located utilities to be abandoned - see pretrench log for additional information. Encountered Electrical Panel and Live line crossing at St. 4+90 - ceased pre-trenching to await direction from CRA as to how to proceed. Awaiting written direction regarding trench re-alignments on West Side St. 17+00 to 20+00 as well as Southwest corner.	
Issues/Deficiencies Re-Alignments Electric Panel on South Alignment	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/16/04
Shift: 7:00am - 5:00pm
Weather: Overcast, Rain

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Aaron Handel SSO Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker
Testing Performed Today	Meetings Held Today Toolbox Safety
Activities Today Continued Breaking and Removing Concrete along trench alignment. Continued Pretrenching - Pre trenched 700LF and located utilities to be abandoned - see pretrench log for additional information. Awaiting written direction regarding trench re-alignments on West Side St. 17+00 to 20+00, Southwest corner, and how to proceed past electrical panel.	
Issues/Deficiencies Re-Alignments Electric Panel on South Alignment	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/18/04
Shift: 7:00am - 5:00pm
Weather: Overcast, cold

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker
Testing Performed Today	Meetings Held Today
	Toolbox Safety
Activities Today	
Completed Breaking and Removing Concrete Pad (0-12") along trench alignment. Continued Pretrenching - Pre trenched 155LF and located utilities to be abandoned - see pretrench log for additional information. Began Removing subsurface structures (12"+) see daily log sheet for operator time etc. Awaiting written direction regarding trench re-alignments on West Side St. 17+00 to 20+00, Southwest corner, and how to proceed past electrical panel.	
Issues/Deficiencies	Materials Received
Re-Alignments Electric Panel on South Alignment	Received 1 Truckload of Bentonite(100lb Bags) from Federal.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/19/04
Shift: 7:00am - 5:00pm
Weather: Overcast, cold

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker
Testing Performed Today	Meetings Held Today Toolbox Safety
Activities Today Continued Pretrenching - Pre trenched 671LF and located utilities to be abandoned - see pretrench log for additional information. Continued Removing subsurface structures (12"+) see daily log sheet for operator time etc. Discovered Walkway tunnel and smaller basement in NE Corner	
Issues/Deficiencies Re-Alignments Electric Panel on South Alignment NE Corner	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: SDM
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/20/04
Shift: 7:00am - 5:00pm
Weather: Overcast, cold

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight
Testing Performed Today	Meetings Held Today
	Toolbox Safety Weekly Progress Meeting
Activities Today	
Continued Pretrenching - Pre trenched 350LF and located utilities to be abandoned - see pretrench log for additional information. Continued Removing subsurface structures (12"+) see daily log sheet for operator time etc. Began exploratory around Walkway Tunnel etc. to determine if there is a clear path through NE Corner.	
Issues/Deficiencies	Materials Received
Re-Alignment of Southern Leg Electric Panel on South Alignment NE Corner	Received 1 Load of Bentonite (100lb Bags) from Federal

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA

Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date:	10/21/04
Shift:	7:00am - 5:00pm
Weather:	Overcast, cold

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con		Equipment Onsite 330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps
Testing Performed Today	Meetings Held Today Toolbox Safety	
Activities Today Began Receiving Owned Equipent (Boom and Stick, Batch Plant, Pumps, Etc. Assembled 375 Boom and Stick. Began Staging Equipment for Batch Plant Assembly Continued exploratory around Walkway Tunnel etc. to determine if there is a clear path through NE Corner. Geo-Con/CRA/REALM discussed re-alignment of south alignment CRA will locate sewer lines and French Drain to finalize slurry trench re-alignment. Electric Panel will be disconnected.		
Issues/Deficiencies Re-Alignment of Southern Leg Electric Panel on South Alignment NE Corner	Materials Received Received 3 Loads of Bentonite (1-100lb Bags 2-Jumbos)	

On behalf of the contractor, I certify this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/22/04
Shift: 7:00am - 5:00pm
Weather: Overcast, cold, drizzle

Page 1 of 1

Personnel Onsite	Equipment Onsite
Mark Kitko Eng. Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps
Testing Performed Today	Meetings Held Today
	Toolbox Safety
Activities Today	
Continued Receiving Owned Equipent (Boom and Stick, Batch Plant, Pumps, Etc.) Began Batch Plant Assembly Completed utility abandonment as per concrete encasement alternative at the following stations: 14+10, 18+00, 19+85, 22+68, 26+77 Additionally, utility at St. 25+68 was abandoned between manholes - 1 filled with dirt, the other with concrete. CRA Located Storm/Sanitary Sewers and French Drain on South Alignment - Trench alignment will be adjusted.	
Issues/Deficiencies	Materials Received
NE Corner	Received 2 Loads of Bentonite (2-Jumbos) Received 1 Load of Ready Mix Concrete - 12yds.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

SDM
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/23/04

Page 1 of 1

Shift: 7:00am - 5:00pm

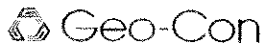
Weather: Overcast, cold, rain in afternoon

Personnel Onsite	Equipment Onsite
Mark Kitko Eng. Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps
Harry Barskite Op. Geo-Con	
Doug Healey Lab/Op Geo-Con	
Wes Barber Lab/Op Geo-Con	
Levi Barber Lab/Op Geo-Con	
Testing Performed Today	Meetings Held Today
	Toolbox Safety
Activities Today	
Continued Batch Plant Assembly Adjusted South Trench Alignment Continued pre-trenching on southern alignment. See pretrench log for details	
Issues/Deficiencies	Materials Received
NE Corner	Received 2 Loads of Bentonite (2-Jumbos) Received 1 Load of Ready Mix Concrete - 12yds.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: SDM
CRA



Area I Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/²⁵~~23~~/04
Shift: 7:00am - 5:00pm
Weather: Clear, warmer.

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer
Testing Performed Today	Meetings Held Today
	Toolbox Safety
Activities Today	
Completed batch plant assembly and preparations for slurry trenching. Continued pretrenching south alignment. Lifted driveway slab and pretrenched through driveway area. See pretrench log for details	
Issues/Deficiencies	Materials Received
NE Corner	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/26/04
Shift: 7:00am - 5:00pm
Weather: Clear, warmer.

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer
Testing Performed Today	Meetings Held Today
Slurry Testing - See attached Sheet	Toolbox Safety Issues/Deficiencies Meeting (CRA&Geo-Con)
Activities Today	
Began Slurry Trenching See Attached Sheet for applicable information.	
Issues/Deficiencies	Materials Received
NE Corner	Received 1 Load of Clay and 1 Load of Crushed Stone from StoneCo. Dennison.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

James P. Kear
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/27/04 **Page 1 of 1**
Shift: 7:00am - 5:00pm
Weather: Clear.

Personnel Onsite		Equipment Onsite
Greg White	Supt Geo-Con	330 CAT
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Aaron Handel	SSO Geo-Con	330 CAT w/ 10,000lb Breaker
Harry Barskite	Op. Geo-Con	375 CAT and Counterweight
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps
Wes Barber	Lab/Op Geo-Con	CAT D5 Dozer
Levi Barber	Lab/Op Geo-Con	CAT 320 Excavaor
Testing Performed Today		Meetings Held Today
Slurry Testing - See attached Sheet		Toolbox Safety Weekly Progress Meeting
Activities Today		
Continued Slurry Trenching See Attached Sheet for applicable information. Hammered roof of tunnel began creating broken concrete barriers on either side of center line through tunnel. Attempted to remove remaining portions of structures in NE corner. Encountered another utility - excavation filled with water.		
Issues/Deficiencies		Materials Received
NE Corner		

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: Thomas J. Kean
CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 10/27/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086
Livonia, Michigan

STATION	Excavation				Average Square	COMMENTS
	Top of Workpad	Bottom of Excavation		DEPTH		
	EL.	Depth	EL.			
12+60	706.00	28.0	678.0	28.0		
12+70	706.00	28.0	678.0	28.0	280	
12+80	706.00	28.0	678.0	28.0	280	
12+90	706.00	28.0	678.0	28.0	280	
13+00	706.00	27.0	679.0	27.0	275	
13+10	706.00	27.0	679.0	27.0	270	
13+20	706.00	27.0	679.0	27.0	270	
13+30	706.00	26.0	680.0	26.0	265	
13+40	706.00	26.0	680.0	26.0	260	
13+50	706.00	25.0	681.0	25.0	255	
13+60	706.00	25.0	681.0	25.0	250	
13+70	706.00	25.0	681.0	25.0	250	Clay observed at bottom of cut.
Linear Feet Excavation Today:			110.0	SQUARE FEET TODAY:		2935
Linear Feet Excavation To Date:			170	SQUARE FEET TO DATE:		4580

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
10:00	12+00	128.5	6	35.0%

Comments:

Received By:

Mark Kisko - Geo-Con, Inc.



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/28/04
Shift: 7:00am - 5:00pm
Weather: Clear.

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Wes Barber Lab/Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today	Meetings Held Today
Slurry Testing - See attached Sheet	Toolbox Safety
Activities Today	
Continued Slurry Trenching See Attached Sheet for applicable information. Continued creating broken concrete barriers on either side of center line through tunnel. Filled centerline between concrete with soil. Attempted to excavate soil to remove bottome slab. Water eventually broke through upper South West corner of soil dam before bottom was reached filling excavation with water. Removed 2 utilities that were not encountered during 8' pre-excavation (1) 42" at old station 19+70 and (1) 30" at old station 26+80.	
Issues/Deficiencies	Materials Received
NE Corner	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

DM
CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 10/28/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

STATION	Excavation					COMMENTS
	Top of Workpad	Bottom of Excavation		DEPTH	Average Square	
	EL.	Depth	EL.			
13+70	706.00	25.0	681.0	25.0		
13+80	706.00	26.0	680.0	26.0	255	
13+90	706.00	26.0	680.0	26.0	255	260
14+00	706.00	26.0	680.0	26.0	260	
14+10	706.00	26.0	680.0	26.0	260	
14+20	706.00	26.0	680.0	26.0	260	
14+30	706.00	26.0	680.0	26.0	260	
14+40	706.00	26.0	680.0	26.0	260	
14+50	706.00	26.0	680.0	26.0	260	
14+60	706.00	26.0	680.0	26.0	260	
14+70	706.00	26.0	680.0	26.0	260	
14+80	706.00	26.0	680.0	26.0	260	Clay observed at bottom of all cuts.
14+90	707.00	26.0	681.0	26.0	260	
15+00	708.00	26.0	682.0	26.0	260	
15+10	709.00	26.0	683.0	26.0	260	
						+5'
Linear Feet Excavation Today:			140.0	SQUARE FEET TODAY:		
Linear Feet Excavation To Date:			310	SQUARE FEET TO DATE:		

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
10:30	12+30	122.9	3.5	37.7%
16:48	13+70	135	3.5	33.7%

Comments:

Received By:

Mark E. Hill

Mark Kitzko - Geo-Con, Inc.

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/29/04
Shift: 7:00am - 5:00pm
Weather: Overcast Heavy Rain

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Tom Cook Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 330 CAT w/ 10,000lb Breaker 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today	Meetings Held Today
Slurry Testing - See attached Sheet	Toolbox Safety
Activities Today	
Continued Slurry Trenching See Attached Sheet for applicable information. Began pumping water from tunnel to shallow ponds created in press pit basement area. Attempted again to excavate through soil placed in tunnel. Water entered from west side and filled excavation area. Pumping effort will be continued to drain both sides of soil "dam" and area will be excavated again to remove bottom slab. Poured 12 yards of concrete into various manholes abandoning 7 utilities. Bagan removing remainder of subsurface structures at stations 26+80 and 26+90, at 20+ feet.	
Issues/Deficiencies	Materials Received
NE Corner	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

Stacy
CRA

Daily Trench Profile

	A.M.	P.M.
	Time: 7:30	Time: 5:30
Station	Depth (Ft.)	Depth (Ft.)
13+20	Top Out	
13+30	5	
13+40	5	
13+50	10	
13+60	12	
13+70	14	
13+80	14.5	
13+90	16	
14+00	19	
14+10	21	
14+20	20	Top Out
14+30	22.5	5
14+40	22.5	9
14+50	26	10
14+60	26	11
14+70	26	12
14+80	27.5	13
14+90	28	14
15+00	26	16
15+10	26	17
15+20		20
15+30		21
15+40		22
15+50		22
15+60		23
15+70		24
15+80		26
15+90		27
16+00		27
16+10		25
16+20		26
16+30		25
		26
		27
		26



Area I Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 10/30/04

Page 1 of 1

Shift: 7:00am - 5:00pm

Weather: Brief Rain - High Winds (40+mph)

Personnel Onsite		Equipment Onsite	
Greg White	Supt Geo-Con	330 CAT	
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift	
Aaron Handel	SSO Geo-Con	330 CAT w/ 10,000lb Breaker	
Harry Barskite	Op. Geo-Con	375 CAT and Counterweight	
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op Geo-Con	CAT D5 Dozer	
Levi Barber	Lab/Op Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Continued Slurry Trenching See Attached Sheet for applicable information. Removed Floor slab and walls of tunnel in trench alignment. It was decided that the tunnel floor and walls had been removed and enough exploratory had been done to determine that remaining subsurface structures could be jetted around, therefore, CRA will be demobilizing the 330 and 10,000lb hammer			
Issues/Deficiencies		Materials Received	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

[Signature]
CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 10/30/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086
Livonia, Michigan

REVISION 1

STATION	Excavation					COMMENTS
	Top of Workpad	Bottom of Excavation		DEPTH	Average Square	
	EL.	Depth	EL.			
16+60	706.00	26.0	680.0	26.0		
16+70	706.00	26.0	680.0	26.0	260	
16+80	706.00	26.0	680.0	26.0	260	
16+90	706.00	26.0	680.0	26.0	260	
17+00	706.00	26.0	680.0	26.0	260	
17+10	706.00	26.0	680.0	26.0	260	
17+20	706.00	26.0	680.0	26.0	260	
17+30	706.00	26.0	680.0	26.0	260	
17+40	706.00	26.0	680.0	26.0	260	
17+50	706.00	26.0	680.0	26.0	260	
17+60	706.00	26.0	680.0	26.0	260	
17+70	706.00	26.0	680.0	26.0	260	Clay observed at bottom of all cuts.
						Keyed at least 3' into clay layer
Linear Feet Excavation Today:			110.0	SQUARE FEET TODAY:		2860
Linear Feet Excavation To Date:			570	SQUARE FEET TO DATE:		14970

Bentonite Slurry Quality Control

[illegible]

Backfill Quality Control

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
10:00	15+10	131.0	4	27.2%
16:30	15+50	143.52	4	48.0%

Comments:

Received By.

Mark E. Kitz

Mark Kitzko - Geo-Link, Inc.

Daily Trench Profile

	A.M.	P.M.
	Time: 7:30	Time: 5:30
Station	Depth (Ft.)	Depth (Ft.)
14+20	Top Out	
14+30	5	
14+40	9	
14+50	10	
14+60	11	
14+70	12	
14+80	13	
14+90	14	
15+00	15	
15+10	16	
15+20	20	
15+30	21	
15+40	21	
15+50	22	
15+60	23	
15+70	23	Top Out
15+80	25	2
15+90	25	7
16+00	25	10
16+10	26	11.5
16+20	26	13
16+30	26	14
16+40	26	18
16+50	26	19
16+60	26	19
16+70		21 21
16+80		22
16+90		22
17+00		24
17+10		26
17+20		26
17+30		26
17+40		26
17+50		26
17+60		26
17+70		26



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/1/04
Shift: 7:00am - 5:00pm
Weather: Overcast - Cool

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Tom Cook Op Geo-Con Levi Barber Lab/Op Geo-Con	330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today	Meetings Held Today
Slurry Testing - See attached Sheet	Toolbox Safety
Activities Today	
Continued Slurry Trenching See Attached Sheet for applicable information. Took location measurements on all remaining structures in North East Corner Alignment and backfilled entire alignment.	
Issues/Deficiencies	Materials Received
	One Load of Clay from Stone - Co.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

DM
CRA

11/1

Daily Trench Profile

Station	A.M.	P.M.
	Time: 7:30	Time: 5:30
	Depth (Ft.)	Depth (Ft.)
15+70	TOP OUT	
15+80	3	
15+90	8	
16+00	10	
16+10	12	
16+20	14	
16+30	14	
16+40	18	
16+50	19	
16+60	19	
16+70	21	
16+80	22	
16+90	22	
17+00	24.5	
17+10	26	
17+20	26	
17+30	26	TOP OUT
17+40	26	2
17+50	26	6
17+60	26	9
17+70	26	10
17+80		12
17+90		14
18+00		15
18+10		16
18+20		17
18+30		18
18+40		22
18+50		23
18+60		23
18+70		23
18+80		23
18+90		23
19+00		27
19+10		29
19+20		26
19+30		26



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/2/04
Shift: 7:00am - 5:00pm
Weather: Overcast - Rain - Cool

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Mark Kitko Eng. Geo-Con Aaron Handel SSO Geo-Con Harry Barskite Op. Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op Geo-Con Levi Barber Lab/Op Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information.	
Issues/Deficiencies	Materials Received Seven Loads of Clay

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: ADM
CRA

11/2

Daily Trench Profile

	A.M.	P.M.
	Time: 7:30	Time: 5:30
Station	Depth (Ft.)	Depth (Ft.)
17+30	TOP OUT	
17+40	2	
17+50	6	
17+60	9	
17+70	10	
17+80	12	
17+90	14	
18+00	15	
18+10	16	
18+20	17	
18+30	18	
18+40	22	
18+50	23	
18+60	23	
18+70	23	
18+80	23	
18+90	23	
19+00	27	
19+10	29	
19+20	26	
19+30	26	
19+40		
19+50		
19+60		TOP
19+70		3
19+80		7
19+90		13
20+00		16
20+10		18
20+20		20
20+30		21
20+40		24
20+50		26
20+60		27
20+70		27
20+80		27
20+90		27



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/3/2004

Shift: 7:00am - 5:00pm

Page 1 of 1

Weather: Overcast - AM Partly Cloudy/Sunny - PM

Personnel Onsite		Equipment Onsite	
Greg White	Supt Geo-Con	330 CAT	
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift	
Aaron Handel	SSO Geo-Con		
Harry Barskite	Op. Geo-Con		
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op Geo-Con	CAT D5 Dozer	
Levi Barber	Lab/Op Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety Weekly Progress Meeting	
Activities Today			
Continued Slurry Trenching See Attached Sheet for applicable information.			
Issues/Deficiencies		Materials Received	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

SDM
CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/3/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

Livonia, Michigan

Revision 1 SF Credited for overdepth

STATION (NEW)	Station (Old)	Excavation				Average Square Footage	COMMENTS
		Top of Workpad EL.	Bottom of Excavation Depth	EL.	DEPTH		
9+10	20+90	706.30	27.0	679.3	27.0		New Stations have been entered today's report.
9+20	21+00	706.40	27.0	679.4	27.0	270	
9+30	21+10	706.40	27.0	679.4	27.0	270	
9+40	21+20	706.40	27.0	679.4	27.0	270	
9+50	21+30	706.40	27.0	679.4	27.0	270	
9+60	21+40	706.50	27.0	679.5	27.0	270	
9+70	21+50	706.50	27.0	679.5	27.0	270	
9+80	21+60	706.50	27.0	679.5	27.0	270	
9+90	21+70	706.50	27.0	679.5	27.0	270	
10+00	21+80	706.50	27.0	679.5	27.0	270	
10+10	21+90	706.50	27.0	679.5	27.0	270	
10+20	22+00	706.50	27.0	679.5	27.0	270	Clay observed at bottom of all cuts.
10+30	22+10	706.50	28.0	678.5	28.0	275	Keyed at least 3' into clay layer
10+40	22+20	706.50	28.0	678.5	28.0	280	Final depths deeper than design necessary for 3' key
10+50	22+30	706.50	28.0	678.5	28.0	280	
10+60	22+40	706.50	28.0	678.5	28.0	280	
10+70	22+50	706.50	28.0	678.5	28.0	280	
10+80	22+60	706.50	28.0	678.5	28.0	280	
10+90	22+70	706.50	28.0	678.5	28.0	280	
11+00	22+80	706.50	28.0	678.5	28.0	280	
Linear Feet Excavation Today:		190.0		SQUARE FEET TODAY:		5205	
Linear Feet Excavation To Date:		1080		SQUARE FEET TO DATE:		28560	

Bentonite Slurry Quality Control											
Batch Plant					Trench						
Time	VISC (MFV) Seconds	Density PCF	pH	Filtrate Loss mL	Station	Time	VISC (MFV) Seconds	pH	Density PCF	Filtrate Loss mL	Sand Content %
8:00	41	64.3	7	22.00	20+80	7:45	43	8	71.1		7%
11:00	68.5	64.9			21+50	14:50	58.6		66.70	21.00	
13:00	58	65.5									
16:20	56	65.5									

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
8:50	19+80	127.9	5	34.0%
14:30	20+50	125.4	5	33.5%

Comments:

Received By: _____



Mark Kisko - Geo-Con, Inc.

Daily Trench Profile

	A.M.	P.M.
	Time: 7:30	Time: 5:30
Station	Depth (Ft.)	Depth (Ft.)
7+60	TOP OUT	
7+70	3	
7+80	5	
7+90	6	
8+00	7	
8+10	13	
8+20	16	
8+30	18	
8+40	20	
8+50	21	
8+60	24	
8+70	26	
8+80	27	
8+90	27	
9+00	27	
9+10	27	
9+20		
9+30		
9+40		
9+50		TOP
9+60		5
9+70		8
9+80		11
9+90		13
10+00		14
10+10		15
10+20		17
10+30		19
10+40		20
10+50		20
10+60		22
10+70		24
10+80		25
10+90		26
11+00		26



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/4/04
Shift: 7:00am - 5:00pm
Weather: Cloudy and Rain

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Aaron Handel SSO Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information.	
Issues/Deficiencies	Materials Received Eleven jumbo bags of Bentonite @ 4000 lbs each. Three loads of clay.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: [Signature]
CRA



Linnaeus, Nicholas

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
8:38	9+70	99.2	4	31.4%
14:30	10+80	126	4.5	32.7%

(Only had one P.M. Plant Mix.

Mark Kibben - Vice-President

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/5/04
Shift: 7:00am - 5:00pm
Weather: Cold / Sunny / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Greg White	Supt Geo-Con	330 CAT	
Norm Mayo	Supt Geo-Con	CAT TH83 Forklift	
Aaron Handel	SSO Geo-Con		
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op Geo-Con	CAT D5 Dozer	
Levi Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Continued Slurry Trenching See Attached Sheet for applicable information.			
Issues/Deficiencies		Materials Received	
Blown hydraluic hose on 375 cut digging time.		Fisher Fuel Delievery 11 Jumbo bags of bentonite @ 4000 lbs each. 2 Loads ofclay.	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

SDM

CRA

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/6/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Aaron Handel SSO Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op. Geo-Con Levi Barber Op. Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information. Measured and filled man hole part of the day.	
Issues/Deficiencies CAT Mechanic came out to check the pressure on the 375.	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

[Signature]
CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/6/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: PD4-086

1. Introduction

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad EL.	Bottom of Excavation		DEPTH	Average Square Footage	
			Depth	EL.			
13+50	25+30	706.50	29.0	677.5	29.0		
13+60	25+40	706.50	29.0	677.5	29.0	290	
13+70	25+50	706.50	29.0	677.5	29.0	290	
13+80	25+60	706.50	29.0	677.5	29.0	290	
13+90	25+70	706.50	29.0	677.5	29.0	290	
14+00	25+80	706.50	29.0	677.5	29.0	290	
14+10	25+90	706.50	29.0	677.5	29.0	290	
14+20	26+00	706.50	29.0	677.5	29.0	290	
14+30	26+10	706.50	29.0	677.5	29.0	290	
14+40	26+20	706.50	30.0	676.5	30.0	295	
14+50	26+30	706.50	30.0	676.5	30.0	300	
14+60	26+40	706.50	30.0	676.5	30.0	300	
14+70	26+50	706.50	30.0	676.5	30.0	300	Clay observed at bottom of all cuts
14+80	26+60	706.50	31.0	675.5	31.0	305	Keyed at least 3' into clay layer
14+90	26+70	706.50	31.0	675.5	31.0	310	Final depths deeper than design necessary for 3' key
15+00	26+80	706.50	31.0	675.5	31.0	310	
15+10	26+90	706.50	31.0	675.5	31.0	310	
Linear Feet Excavation Today: 160.0				SQUARE FEET TODAY: 4750			
Linear Feet Excavation To Date: 1490				SQUARE FEET TO DATE: 40415		40375	

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
9:50	12+30	122.3	4	32.4%
14:05	12+80	121.1	4	28.2%

Comments:

Received By:

Mark E. Kil

Mark Kitko • Geo-Con, Inc.

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/8/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Aaron Handel SSO Geo-Con Mark Kitko Eng. Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op. Geo-Con Levi Barber Op. Geo-Con	Equipment Onsite 330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information. Pre-Trenched 29+60(8+80) to 27+55(6+75) (205 LF See Pretrench Log) Pre-Trenching is complete. End Slurry Trench on North Side at St. 15+70 (27+50) Begin Slurry Trenching on South Side - Begin Lead-In at Station 29+60 (8+80)	
Issues/Deficiencies 15+30 (27+10) to 15+70 Hit Wall/ Floor	Materials Received Received 2 Trucks (23 4000lb Jumbo Bags) of Bentonite Received 10 Loads Clay from Stone Co.

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

[Signature]
CRA

[illegible]

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/9/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Greg White	Supt Geo-Con	330 CAT CAT TH83 Forklift 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavator	
Norm Mayo	Supt Geo-Con		
Aaron Handel	SSO Geo-Con		
Mark Kitko	Eng. Geo-Con		
Doug Healey	Lab/Op Geo-Con		
Dave Gayer	Op. Geo-Con		
Tom Cook	Op. Geo-Con		
Levi Barber	Op. Geo-Con		
Testing Performed Today Slurry Testing - See attached Sheet		Meetings Held Today Toolbox Safety	
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information. Placed Inflatable Plug in Manhole 18 St. 28+40 - Pipe Crossing - Manhole to North abandoned, experienced slurry loss until slurry level in manhole stabilized.			
Issues/Deficiencies		Materials Received Received Clay (total # Loads to follow) from StoneCo.	

On behalf of the contractor, I certify this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/9/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

Livonia, Michigan

REVISION 1

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad EL.	Bottom of Excavation		DEPTH	Average Square Footage	
			Depth	EL.			
29+30	8+50	706.00	31.0	675.0	31.0		
29+20	8+40	706.00	30.0	676.0	30.0	305	
29+10	8+30	706.00	30.0	676.0	30.0	300	Keyed at least 3' into clay layer
29+00	8+20	706.00	30.0	676.0	30.0	300	Final depths deeper than design necessary for 3' key
28+90	8+10	706.00	30.0	676.0	30.0	300	
28+80	8+00	706.00	30.0	676.0	30.0	300	
28+70	7+90	706.00	29.0	677.0	29.0	295	
28+60	7+80	706.00	29.0	677.0	29.0	290	
28+50	7+70	706.00	29.0	677.0	29.0	290	
28+40	7+60	706.00	29.0	677.0	29.0	290	
28+30	7+50	706.00	28.0	678.0	28.0	285	
28+20	7+40	706.00	28.0	678.0	28.0	280	
28+10	7+30	706.00	28.0	678.0	28.0	280	
28+00	7+20	706.00	28.0	678.0	28.0	280	
27+90	7+10	706.00	28.0	678.0	28.0	280	
27+80	7+00	706.00	28.0	678.0	28.0	280	
27+70	6+90	706.00	28.0	678.0	28.0	280	Station Flags Adjusted
Linear Feet Excavation Today:				160.0	SQUARE FEET TODAY:		4635
Linear Feet Excavation To Date:				1750	SQUARE FEET TO DATE:		46905

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
No AM Backfill Placed				
14:10	29+30	122	4.5	37.5%

Comments:

Received By:

Mark E. Kirk

Mark Kitko - Geo-Con, Inc.

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan

Daily Contractor Quality Control Report

Date:

11/9/04

Shift:

7:00am - 5:00pm

Weather:

Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Greg White	Supt Geo-Con	CAT 320 Excavaor	
Norm Mayo	Supt Geo-Con	CAT TH83 Forklift	
Mark Kitko	Eng. Geo-Con	375 CAT and Counterweight	
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Dave Gayer	Op. Geo-Con	CAT D5 Dozer	
Tom Cook	Op. Geo-Con	CAT 320 Excavaor	
Levi Barber	Op. Geo-Con		
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety Weekly Progress Meeting	
Activities Today			
Continued Slurry Trenching See Attached Sheet for applicable information. Removed Inflatable Plug from Manhole 18			
Issues/Deficiencies		Materials Received	
		Received Clay (total # Loads to follow) from StoneCo.	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Area 1 Barrier Wall - Eckles Road Site

 DATE: 11/10/04

 JOB NAME: Area 1 Barrier Wall
Eckles Road Site

 JOB NUMBER: P04-086
Livonia, Michigan

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad	Bottom of Excavation		DEPTH	Average Square Footage	
		EL.	Depth	EL.			
27+70	6+90	706.00	28.0	678.0	28.0		
27+60	6+80	706.00	28.0	678.0	28.0	280	
27+50	6+70	706.00	28.0	678.0	28.0	280	Keyed at least 3' into clay layer
27+40	6+60	706.00	28.0	678.0	28.0	280	Minimum Profile Depths not met - CRA directed bottom
27+30	6+50	706.00	28.0	678.0	28.0	280	of excavation.
27+20	6+40	706.00	28.0	678.0	28.0	280	
27+10	6+30	706.00	28.0	678.0	28.0	280	
27+00	6+20	706.00	28.0	678.0	28.0	280	
26+90	6+10	706.00	28.0	678.0	28.0	280	
26+80	6+00	706.00	28.0	678.0	28.0	280	
26+70	5+90	706.00	28.0	678.0	28.0	280	
26+60	5+80	706.00	28.0	678.0	28.0	280	
26+50	5+70	706.00	28.0	678.0	28.0	280	
26+40	5+60	706.00	28.0	678.0	28.0	280	
26+30	5+50	706.00	28.0	678.0	28.0	280	
26+20	5+40	706.00	28.0	678.0	28.0	280	
26+10	5+30	706.00	28.0	678.0	28.0	280	
26+00	5+20	706.00	28.0	678.0	28.0	280	
25+90	5+10	706.00	28.0	678.0	28.0	280	
25+80	5+00	706.00	28.0	678.0	28.0	280	
25+70	4+90	706.00	28.0	678.0	28.0	280	
Linear Feet Excavation Today: 200.0					SQUARE FEET TODAY: 5600		
Linear Feet Excavation To Date: 1950					SQUARE FEET TO DATE: 52505		59465

Bentonite Slurry Quality Control											
Batch Plant					Trench						
Time	VISC (MFV) Seconds	Density PCF	pH	Filtrate Loss mL	Station	Time	VISC (MFV) Seconds	pH	Density PCF	Filtrate Loss mL	Sand Content %
11:30	42	64.3	8		28+00	8:20	52	8	91.1	16.00	
14:50	42	64.9		19.00	27+50	14:40	45		78.60		16%
15:30	41	64.3									

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
8:40	29+30	130.4	6	39.8%
14:30	28+80	126	5	33.9%

Comments:

Received By:



Mark Kitko - Geo-Con, Inc.

Daily Trench Profile

	A.M.	P.M.
	Time: <u>7:30</u>	Time: <u>5:30</u>
	Depth (Ft.)	Depth (Ft.)
29+60	0	
29+50	10	
29+40	12	
29+30	13	
29+20	14	
29+10	15	
29+00	16	
28+90	17	
28+80	18	
28+70	19	
28+60	21	
28+50	22	
28+40	23	
28+30	24	
28+20	25	
28+10	28	
28+00	28	
27+90	28	
27+80	28	
27+70	28	
27+60		
27+50		
27+40		
27+30		Top Out
27+20		6
27+10		10
27+00		10
26+90		13
26+80		15
26+70		17
26+60		19
26+50		22
26+40		24
26+30		25
26+20		26
26+10		27
26+00		28
25+90		28
25+80		28
25+70		28



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/11/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Mark Kitko Eng. Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op. Geo-Con Levi Barber Op. Geo-Con	Equipment Onsite CAT 320 Excavaor CAT TH83 Forklift Light Plant 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety Weekly Progress Meeting
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information. 375 Down for approx 3.5 hrs for broken hydraulic hose fitting in AM. Received light plant to maximize hours that work can safely be performed.	
Issues/Deficiencies	Materials Received Received 1 Truckload of Bentonite (4000lb Bags)

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA



Area 1 Barrier Wall - Eckles Road Site

DATE: 11/11/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

Livonia, Michigan

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad E.L.	Bottom of Excavation		DEPTH	Average Square Footage	
			Depth	E.L.			
25+70	4+90	706.00	28.0	678.0	28.0		
25+60	4+80	706.00	28.0	678.0	28.0	280	Keyed at least 3' into clay layer
25+50	4+70	706.00	28.0	678.0	28.0	280	Minimum Profile Depths not met - CRA directed bottom
25+40	4+60	706.00	28.0	678.0	28.0	280	of excavation.
25+30	4+50	706.00	28.0	678.0	28.0	280	
25+20	4+40	706.00	28.0	678.0	28.0	280	
25+10	4+30	706.00	28.0	678.0	28.0	280	
25+00	4+20	706.00	28.0	678.0	28.0	280	
24+90	4+10	706.00	28.0	678.0	28.0	280	
24+80	4+00	706.00	29.0	677.0	29.0	285	
24+70	3+90	706.00	30.0	676.0	30.0	295	
24+60	3+80	706.00	30.0	676.0	30.0	300	
24+50	3+70	706.00	30.0	676.0	30.0	300	
24+40	3+60	706.00	30.0	676.0	30.0	300	
Linear Feet Excavation Today:				130.0	SQUARE FEET TODAY:		
Linear Feet Excavation To Date:				2070	SQUARE FEET TO DATE:		

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
10:10	28+00	127.3	3.5	34.4%
14:30	27+50	130.4	4	30.0%

Comments:

Received By:

Mark E. Kirk

Mark Kitko - Geo-Con, Inc.

Daily Trench Profile

Station	A.M.	P.M.
	Time: 7:30	Time: 5:30
	Depth (Ft.)	Depth (Ft.)
27+20	Top Out	
27+10	7	
27+00	10	
26+90	11	
26+80	13	
26+70	16	
26+60	18	
26+50	20	
26+40	23	
26+30	24	
26+20	25	
26+10	26	
26+00	28	
25+90	28	
25+80	28	Top Out
25+70	28	5
25+60	28	8
25+50		10
25+40		13
25+30		15
25+20		17
25+10		20
25+00		22
24+90		24
24+80		25
24+70		26
24+60		30
24+50		30
24+40		30
24+30		
24+20		
24+10		
24+00		
23+90		
23+80		
23+70		
23+60		
23+50		
23+40		
23+30		



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/12/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Mark Kitko Eng. Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op. Geo-Con Levi Barber Op. Geo-Con	Equipment Onsite CAT 320 Excavaor CAT TH83 Forklift Light Plant 375 CAT and Counterweight Geo-Con Boom &Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today Slurry Testing - See attached Sheet	Meetings Held Today Toolbox Safety ~~Weekly Progress Meeting~~
Activities Today Continued Slurry Trenching See Attached Sheet for applicable information.	
Issues/Deficiencies Hit concrete floor at 20 feet between stations 23+59 and 23+45.	Materials Received Received 2 Truckloads of Bentonite (4000lb Jumbos) Received 1 Truckload of Attapulgitic Clay (Impermix)

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/12/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086
Livonia, Michigan

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad EL.	Bottom of Excavation Depth EL.		DEPTH	Average Square Footage	
24+40	4+90	706.00	30.0	676.0	30.0		
24+30	4+80	706.00	30.0	676.0	30.0	300	
24+20	4+70	706.00	30.0	676.0	30.0	300	Keyed at least 3' into clay layer
24+10	4+60	706.00	30.0	676.0	30.0	300	CRA directed bottom of excavation.
24+00	4+50	706.00	30.0	676.0	30.0	300	
23+90	4+40	706.00	30.0	676.0	30.0	300	
23+80	4+30	706.00	31.0	675.0	31.0	305	
23+70	4+20	706.00	31.0	675.0	31.0	310	
23+60	4+10	706.00	31.0	675.0	31.0	310	
23+50	4+00	706.50	20.0	686.5	20.0	255	Hit concrete floor at station 23+50 and reached to
23+40	3+90	706.50	31.0	675.5	31.0	255	station 23+45 at a depth of 20 feet.
23+30	3+80	706.50	31.0	675.5	31.0	310	We were directed to dig to depth on either side and
23+20	3+70	706.50	31.0	675.5	31.0	310	continue on with the trench.
23+10	3+60	706.50	31.0	675.5	31.0	310	
23+00	3+50	706.50	31.0	675.5	31.0	310	
22+90	3+40	706.50	31.0	675.5	31.0	310	
22+80	3+30	706.50	31.0	675.5	31.0	310	
22+70	3+20	706.50	31.0	675.5	31.0	310	
22+60	3+10	706.50	31.0	675.5	31.0	310	
22+50	3+00	706.50	31.0	675.5	31.0	310	
22+40	2+90	706.50	31.0	675.5	31.0	310	
Linear Feet Excavation Today:					200.0		
Linear Feet Excavation To Date:					2270		
					SQUARE FEET TODAY: 6035		
					SQUARE FEET TO DATE: 62260		62260

Bentonite Slurry Quality Control											
Batch Plant					Trench						
Time	VISC (MFV) Seconds	Density PCF	pH	Filtrate Loss mL	Station	Time	VISC (MFV) Seconds	pH	Density PCF	Filtrate Loss mL	Sand Content %
10:45	43.3	64.3	8		25+00	10:50	49.5	8		17.00	14%
11:30	42.1	64.3		20.00	24+20	15:00	60.3		86.10		
13:30	45.3	64.9									

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
10:50	25+80	123.6	4	35.5%
14:50	24+90	124.2	4.5	29.7%

Comments:

Received By:



Mark Kisko - Geo-Con, Inc.

2485
2935

Daily Trench Profile

Station	A.M.	P.M.
	Time: 7:30	Time: 5:30
	Depth (Ft.)	Depth (Ft.)
25+80	Top Out	
25+70	5	
25+60	7	
25+50	9	
25+40	12	
25+30	14	
25+20	17	
25+10	20	
25+00	23	
24+90	25	
24+80	26	
24+70	26	
24+60	30	
24+50	30	
24+40	30	
24+30	30	
24+20	30	
24+10		
24+00		
23+90		
23+80		
23+70		
23+60		
23+50		
23+40		Top Out
23+30		4
23+20		15
23+10		23
23+00		29
22+90		31
22+80		31
22+70		31
22+60		31
22+50		31
22+40		
22+30		
22+20		
22+10		
22+00		
21+90		



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/13/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite	Equipment Onsite
Greg White Supt Geo-Con Norm Mayo Supt Geo-Con Mark Kitko Eng. Geo-Con Doug Healey Lab/Op Geo-Con Dave Gayer Op. Geo-Con Tom Cook Op. Geo-Con Levi Barber Op. Geo-Con	CAT 320 Excavaor CAT TH83 Forklift Light Plant 375 CAT and Counterweight Geo-Con Boom & Stick, Batch Plant and Pumps CAT D5 Dozer CAT 320 Excavaor
Testing Performed Today	Meetings Held Today
Slurry Testing - See attached Sheet	Toolbox Safety ~~Weekly Progress Meeting~~
Activities Today	
Continued Slurry Trenching See Attached Sheet for applicable information.	
Issues/Deficiencies	Materials Received
Hit concrete floor at 20 feet between stations 23+50 and 23+45 11/12	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during the reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/13/04

 JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: PG4086

Location: Michigan

STATION (NEW)	Station (Old)	Excavation					COMMENTS
		Top of Workpad E.L.	Bottom of Excavation Depth		DEPTH	Average Square Footage	
22+40	2+90	706.00	31.0	675.0	31.0		
22+30	2+80	706.00	31.0	675.0	31.0	310	Keyed at least 1 ft into clay layer
22+20	2+70	706.00	31.0	675.0	31.0	310	GRA directed bottom of excavation
22+10	2+60	706.00	32.0	674.0	32.0	315	
22+00	2+50	706.00	32.0	674.0	32.0	320	
21+90	2+40	706.00	32.0	674.0	32.0	320	
21+80	2+30	706.00	32.0	674.0	32.0	320	
21+70	2+20	706.00	31.0	675.0	31.0	315	
21+60	2+10	706.00	31.0	675.0	31.0	310	
21+50	2+00	706.50	31.0	675.5	31.0	310	
21+40	1+90	706.50	31.0	675.5	31.0	310	
21+30	1+80	706.50	31.0	675.5	31.0	310	
21+20	1+70	706.50	31.0	675.5	31.0	310	
21+10	1+60	706.50	31.0	675.5	31.0	310	
21+00	1+50	706.50	32.0	674.5	32.0	315	
20+90	1+40	706.50	32.0	674.5	32.0	320	
20+80	1+30	706.50	32.0	674.5	32.0	320	
20+70	1+20	706.50	32.0	674.5	32.0	320	
20+60	1+10	706.50	32.0	674.5	32.0	320	
20+50	1+00	706.50	32.0	674.5	32.0	320	
20+40	0+90	706.50	32.0	674.5	32.0	320	
20+30	0+80	706.50	32.0	674.5	32.0	320	
Linear Feet Excavation Today:					210.0	SQUARE FEET TODAY: 6625	
Linear Feet Excavation To Date:					2480	SQUARE FEET TO DATE: 68885	

Bentonite Slurry Quality Control											
Batch Plant					Trench						
Time	VISC (MFV) Seconds	Density PCF	pH	Filtrate Loss mL	Station	Time	VISC (MFV) Seconds	pH	Density PCF	Filtrate Loss mL	Sand Content %
9:35	41	64.3	8	16.00	22+90	9:30	43	8	68.0	19.00	5%
11:15	42	64.9			22+50	15:30	75		70.00		
13:30	41	64.3			22+50	17:30	51		71.80		

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % <200
9:40	23+70	124.8	3.5	34.0%
15:30	23+50	123	4	25.0%

Comments:

Received By:



Mark Kirk - Geo-Con, Inc.

Daily Trench Profile

Station	A.M.		P.M.	
	Time: 7:30		Time: 5:30	
	Depth (Ft.)		Depth (Ft.)	
23+40	Top Out			
23+30	4			
23+20	14			
23+10	23			
23+00	28			
22+90	31			
22+80	31			
22+70	31			
22+60	31			
22+50	31			
22+40				
22+30				
22+20				
22+10				
22+00			Top Out	
21+90			7	
21+80			10	
21+70			13	
21+60			15	
21+50			17	
21+40			19	
21+30			20	
21+20			21	
21+10			24	
21+00			26	
20+90			28	
20+80			29	
20+70			31	
20+60			32	
20+50			32	
20+40			32	
20+30			32	
20+20				
20+10				
20+00				
19+90				
19+80				
19+70				
19+60				
19+50				



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/15/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	
		CAT TH83 Forklift	
		Light Plant	
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom &Stick. Batch Plant and Pumps	
Tom Cook	Op. Geo-Con	CAT D5 Dozer	
Wes Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Continued Slurry Trenching See Attached Sheet for applicable information.			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/15/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

Ionia Michigan

STATION (NEW)	Station (Old)	Excavation				Average Square Footage	COMMENTS
		Top of Workpad EL.	Bottom of Excavation		DEPTH		
			Depth	EL.			
20+30	32+00	706.00	32.0	674.0	32.0		Old Station Numbers Adjusted for consistency with dwgs. Keyed at least 3' into clay layer CRA directed bottom of excavation.
20+20	31+90	706.00	32.0	674.0	32.0	320	
20+10	31+80	706.00	32.0	674.0	32.0	320	
20+00	31+70	706.00	32.0	674.0	32.0	320	
19+90	31+60	706.00	32.0	674.0	32.0	320	
19+80	31+50	706.00	32.0	674.0	32.0	320	
19+70	31+40	706.00	32.0	674.0	32.0	320	
19+60	31+30	706.00	32.0	674.0	32.0	320	
19+50	31+20	706.00	32.0	674.0	32.0	320	
19+40	31+10	706.50	32.0	674.5	32.0	320	
19+30	31+00	706.50	32.0	674.5	32.0	320	
19+20	30+90	706.50	32.0	674.5	32.0	320	
19+10	30+80	706.50	32.0	674.5	32.0	320	
19+00	30+70	706.50	31.0	675.5	31.0	315	
18+90	30+60	706.50	31.0	675.5	31.0	310	
18+80	30+50	706.50	31.0	675.5	31.0	310	
18+70	30+40	706.50	31.0	675.5	31.0	310	
Linear Feet Excavation Today:				160.0	SQUARE FEET TODAY:		5085
Linear Feet Excavation To Date:				2640	SQUARE FEET TO DATE:		73970

[illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
11:40	22+80	123.6	4.5	27.9%
16:00	22+30	120.4	4	26.0%

Comments:

Received By:

Mark E. Kirk

Mark Kinko - CEO - COO, INC.

Daily Trench Profile

Station	A.M.	P.M.
	Time: 7:30	Time: 5:30
	Depth (Ft.)	Depth (Ft.)
22+00	Top Out	
21+90	7	
21+80	10	
21+70	13	
21+60	15	
21+50	17	
21+40	19	
21+30	20	
21+20	21	
21+10	24	
21+00	26	
20+90	28	Top Out
20+80	29	3
20+70	31	5
20+60	32	8
20+50	32	10
20+40	32	12
20+30	32	14
20+20		16
20+10		17
20+00		18
19+90		22
19+80		22
19+70		24
19+60		24
19+50		25
19+40		27
19+30		28
19+20		30
19+10		30
19+00		30
18+90		30
18+80		31
18+70		31
18+60		
18+50		
18+40		
18+30		
18+20		
18+10		



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/16/04
Shift: 7:00am - 5:00pm
Weather: Cool / Sunny / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	
		CAT TH83 Forklift	
Doug Healey	Lab/Op Geo-Con	Light Plant	
Dave Gayer	Op. Geo-Con	375 CAT and Counterweight	
Tom Cook	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Wes Barber	Op. Geo-Con	CAT D5 Dozer	
		CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Completed Slurry Trenching to North East Corner (17+30) - Awaiting Direction to Continue See Attached Sheet for applicable information.			
Pre-Trenched 120LF of new alighment to the North of original.			
Concrete Cutting and Breaking onsite under CRA direction to Saw Cut concrete.			
Encountered concrete floor - 12FBGS, Station 18+48 to 18+05			
Excavated Lead-in trench at station 18+20.			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45.		Received 1 Truckload of Bentonite (100lb Bags)	
Hit concrete floor at 12 feet between stations 18+48 and 18+05			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/16/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

LAVIN, MACHING

[illegible][illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
9:15	22+00	122.9	3.5	35.4%
14:25	21+50	121.7	4.5	32.6%

Comments:

Received By:

Mark E. Kirk

Mark Kinko - Geo-Con, Inc.

Daily Trench Profile

	A.M.	P.M.
	Time: 7:30	Time: 5:30
Station	Depth (Ft.)	Depth (Ft.)
20+90	Top Out	
20+80	3	
20+70	5	
20+60	8	
20+50	10	
20+40	12	
20+30	14	
20+20	16	
20+10	17	
20+00	18	
19+90	22	
19+80	22	
19+70	24	
19+60	24	
19+50	25	
19+40	27	
19+30	28	
19+20	30	
19+10	30	
19+00	30	
18+90	31	
18+80	31	
18+70		
18+60		
18+50		
18+40		Top Out
18+30		12
18+20		12
18+10		12
18+00		12
17+90		30
17+80		30
17+70		30
17+60		31
17+50		31
17+40		31
17+30		31
17+20		31
17+10		
17+00		



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/17/04
Shift: 7:00am - 5:00pm
Weather: Cool / overcast / Breezy

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	C7 Drill Rig
		CAT TH83 Forklift	Wheel Loader
		Light Plant	
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op. Geo-Con	CAT D5 Dozer	
Wes Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
		Toolbox Safety	
Activities Today			
Slurry Trenching equipment is on standby awaiting exploratory work by CRA for an alternate alignment in NE Corner Began Capping North Leg of trench alignment - 8+00 to 14+00 Continued receiving equipment for Jet Grouting (C7 Drill Rig arrived today) Concrete Cutting and Breaking onsite under CRA direction to Saw Cut concrete.			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45.		Received one truckload of Slag Cement for Jet Grouting.	
Hit concrete floor at 12 feet between stations 18+48 and 18+05		Received clay and stone(2 1/4 aggregate) for cap	

On behalf of the contractor, I certify this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/18/04
Shift: 7:00am - 5:00pm
Weather: Cool / overcast / rain

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	C7 Drill Rig
		CAT TH83 Forklift	Wheel Loader
		Light Plant	
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op. Geo-Con	CAT D5 Dozer	
Wes Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
		Toolbox Safety Weekly Progress Meeting	
Activities Today			
Slurry Trenching equipment is on standby awaiting exploratory work by CRA for an alternate alignment in NE Corner Continued Capping North Leg of trench alignment - 8+00 to 14+00 Capped SE Corner 23+20 to 24+00 to support coring rig to probe obstruction Pre-Trenched 210LF			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45. Hit concrete floor at 12 feet between stations 18+48 and 18+05		Received clay and stone(21A aggregate) for cap	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____
CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/19/04
Shift: 7:00am - 5:00pm
Weather: Cool / Overcast / Rain

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	
		CAT TH83 Forklift	
		Light Plant	
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op. Geo-Con	CAT D5 Dozer	
Wes Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Received Direction to proceed through revised path in North East Corner and began slurry trenching See Attached Sheet for applicable information.			
Pre Trenched approx. 50 lineal feet.			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45.		Received one truckload of Slag Cement for Jet Grouting.	
Hit concrete floor at 12 feet between stations 18+48 and 18+05			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

CRA

Daily Trench Profile

[illegible]



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 11/20/04
Shift: 7:00am - 5:00pm
Weather: Cool / Overcast / Rain

Page 1 of 1

REVISION 1

Personnel Onsite		Equipment Onsite	
Norm Mayo	Supt Geo-Con	Geo-Con Jet Pumps	
Mark Kitko	Eng. Geo-Con	CAT 320 Excavaor	
		CAT TH83 Forklift	
		Light Plant	
Doug Healey	Lab/Op Geo-Con	375 CAT and Counterweight	
Dave Gayer	Op. Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Tom Cook	Op. Geo-Con	CAT D5 Dozer	
Wes Barber	Op. Geo-Con	CAT 320 Excavaor	
Testing Performed Today		Meetings Held Today	
Slurry Testing - See attached Sheet		Toolbox Safety	
Activities Today			
Completed slurry trenching alternate alignment including tie-in to original alignment. New North East Corner Station = A17+80 See Attached Sheet for applicable information. Completed Backfilling Excavated underneath obstruction at A17+00			
Issues/Deficiencies		Materials Received	
Hit concrete floor at 20 feet between stations 23+59 and 23+45. Hit concrete floor at 12 feet between stations 18+48 and 18+05			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

CRA

Area 1 Barrier Wall - Eckles Road Site

DATE: 11/20/04

JOB NAME: Area 1 Barrier Wall
Eckles Road Site

JOB NUMBER: P04-086

Livonia, Michigan

Revision

[illegible][illegible]

Backfill Quality Control				
Time	Station	Density PCF	Slump IN	Fines Content % -200
9:20	16+30	120.0	3.5	32.0%

Comments:

Received By:

Mark E. Keith

Mark Kitko - Geo-Con, Inc.

Daily Trench Profile

[illegible]

[illegible]

Daily Trench Profile

[illegible]

**Manhole Information
Slurry Wall Alignment
Livonia, Michigan**

Manhole ID #	Manhole Diameter (ft)	Depth to Bottom (ft)	Depth of concrete (ft)	Estimated concrete (CY)
MH 010	4	15.5	3.5	1.63
MH 011	Filled in with dirt			0.00
MH 012	4	9.75	3	1.40
MH 013	4	14.25	3	1.40
MH 014	4	11.25	2	0.93
MH 015	Filled in with dirt			0.00
MH 016	4	Partially filled	2	0.93
MH 018	Active - need to block off 1 pipe			0.50
MH 019	3	8.66	3	0.79
MH 020				0.00
MH 021	4	8	2	0.93
MH 022	4	7.25	1.5	0.70
MH023				0.00
MH 024				0.00
MH 025				0.00
MH 026				0.00

Total 9.20

APPENDIX D

PERMEABILITY TEST RESULTS - SOIL-BENTONITE SLURRY

**Slurry Wall Permeability Summary
Area 1 Barrier Wall
Eckles Road Site - Livonia, Michigan**

Sample #	Date	Station	Field Fines Content	Lab Perm Result
P04-086-1	29-Oct	13+40	29.7%	8.10E-09
P04-086-2	1-Nov	15+70	31.0%	1.40E-08
P04-086-5	3-Nov	19+80	34.0%	6.40E-08
P04-086-6	5-Nov	23+60	30.7%	2.70E-08
P04-086-7	8-Nov	27+30	28.4%	1.90E-08
P04-086-8	12-Jan	25+80NEW	35.5%	2.90E-08
P04-086-9	15-Nov	22+80	27.9%	5.10E-08
P04-086-10	17-Nov	19+10		4.60E-08
P04-086-11	19-Nov	A15+30	36.7%	1.10E-08

APPENDIX E

DAILY CONTRACTOR QUALITY CONTROL REPORTS - JET GROUT BARRIER WALL

Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/4/04
Shift: 7:00am - 5:00pm
Weather: Cool / Overcast / Rain

Page 1 of 1

Personnel Onsite <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">Sam Keller</td><td style="width: 50%;">Supt Geo-Con</td></tr> <tr><td>Norm Mayo</td><td>Supt Geo-Con</td></tr> <tr><td>Mark Kitko</td><td>Eng. Geo-Con</td></tr> <tr><td>Edmond Johnson</td><td>Op. Geo-Con</td></tr> <tr><td>Doug Healey</td><td>Lab/Op Geo-Con</td></tr> <tr><td>Joey Rood</td><td>Op. Geo-Con</td></tr> <tr><td>Ken Beighley</td><td>Lab/Op Geo-Con</td></tr> <tr><td>Harry Barskite</td><td>Op. Geo-Con</td></tr> <tr><td>Tom Cook</td><td>Op. Geo-Con</td></tr> <tr><td>Wes Barber</td><td>Op. Geo-Con</td></tr> </table>	Sam Keller	Supt Geo-Con	Norm Mayo	Supt Geo-Con	Mark Kitko	Eng. Geo-Con	Edmond Johnson	Op. Geo-Con	Doug Healey	Lab/Op Geo-Con	Joey Rood	Op. Geo-Con	Ken Beighley	Lab/Op Geo-Con	Harry Barskite	Op. Geo-Con	Tom Cook	Op. Geo-Con	Wes Barber	Op. Geo-Con	Equipment Onsite Geo-Con Jet Pumps CAT 320 Excavaor CAT TH83 Forklift Light Plant Geo-Con Boom & Stick, Batch Plant and Pumps Geo-Con C7 Drill Rig CAT D5 Dozer
Sam Keller	Supt Geo-Con																				
Norm Mayo	Supt Geo-Con																				
Mark Kitko	Eng. Geo-Con																				
Edmond Johnson	Op. Geo-Con																				
Doug Healey	Lab/Op Geo-Con																				
Joey Rood	Op. Geo-Con																				
Ken Beighley	Lab/Op Geo-Con																				
Harry Barskite	Op. Geo-Con																				
Tom Cook	Op. Geo-Con																				
Wes Barber	Op. Geo-Con																				
Testing Performed Today	Meetings Held Today Toolbox Safety																				
Activities Today Continued capping. Begin Jet Grouting																					
Issues/Deficiencies ~~Hit concrete floor at 20 feet between stations 23+59 and 23+45.~~ ~~Hit concrete floor at 12 feet between stations 18+48 and 18+05~~	Materials Received																				

On behalf of the contractor, I certify this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/4/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	
1	32+78.00	0.5	27	13:20	13:39	1.5	42.5	15 Deg. East	
2	32+74.50					Not Grouted			Refusal 25'
2A	32+75.00					Not Grouted			Refusal 25'
2B	32+74.00					Not Grouted			Refusal 25'
8	32+53.50	0.5	27	16:44	17:05	1.5	40	15 Deg. East	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS:

Experiencing equipment problems - swivel - broken several times

Panel #2 Refusal 25' . Attempted to drill through obstruction- Ruined Roller Bit. Moved 6-inches to the East- Refusal, Moved 1-foot West - Refusal
 Moved to Drill Hole #8.

Date: 12/4/04

Batch Plant

[illegible]

Mark & Zik

Geo-Con, Inc.

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/6/04
Shift: 7:00am - 5:00pm
Weather: Cold / Overcast / Rain

Page 1 of 1

Personnel Onsite		Equipment Onsite
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Edmond Johnst	Op. Geo-Con	Light Plant
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps
Joey Rood	Op. Geo-Con	Geo-Con C7 Drill Rig
Ken Beighley	Lab/Op Geo-Con	CAT D5 Dozer
Harry Barskite	Op. Geo-Con	
Tom Cook	Op. Geo-Con	
Wes Barber	Op. Geo-Con	
Testing Performed Today		Meetings Held Today
		Toolbox Safety Weekly Progress Meeting
Activities Today		
Continued capping. Begin Jet Grouting		
Issues/Deficiencies		Materials Received
~~Hit concrete floor at 20 feet between stations 23+59 and 23+45. Hit concrete floor at 12 feet between stations 18+48 and 18+04 Obstruction on Drill hole #2~~		

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

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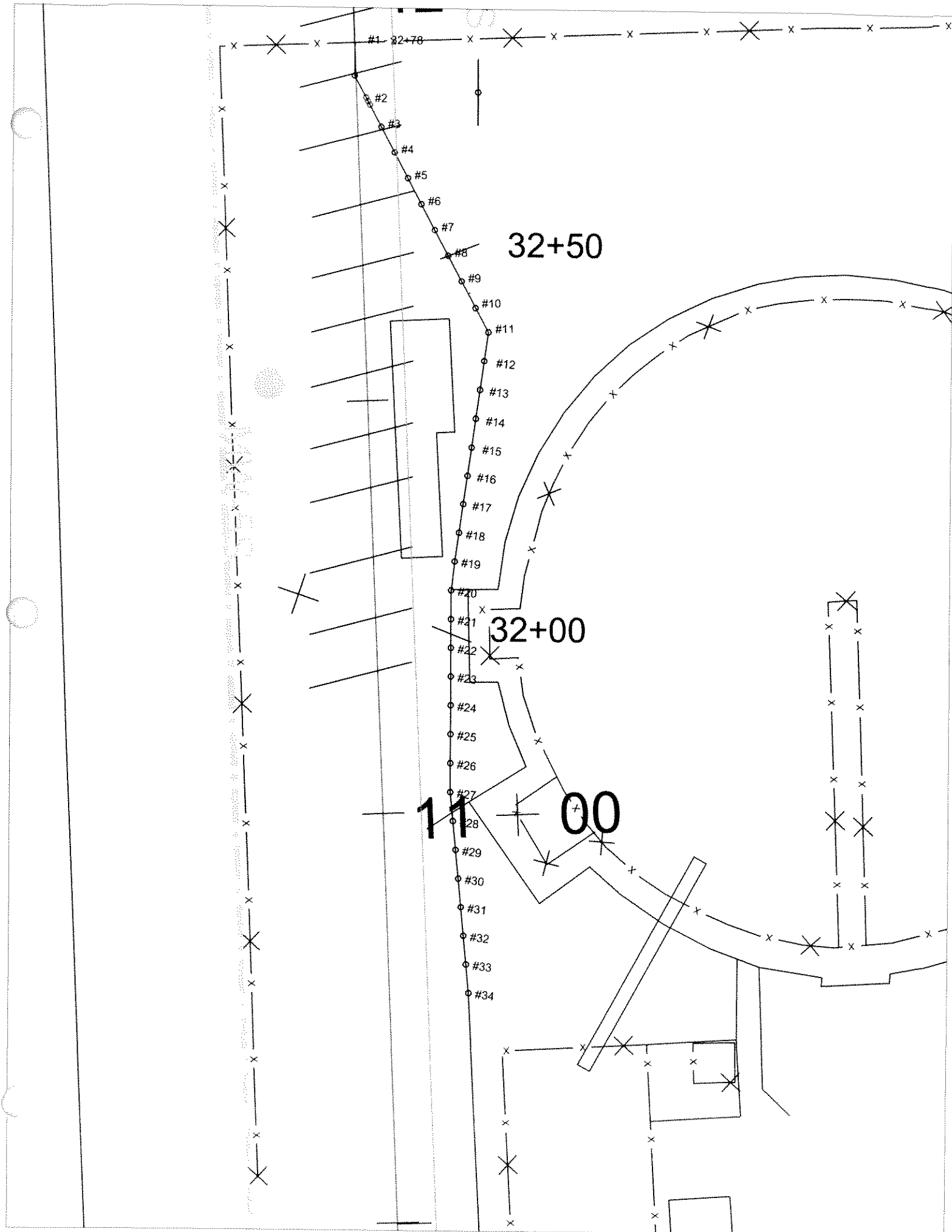
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Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/6/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	
18	32+15.00	0.5	27.5	11:58	12:25	1.5	39	15 Deg. West	Orientation is recorded as facing North
17	32+18.50	0.5	27.5	12:51	13:25	1.5	39	15 Deg. East	See Attached Sketch
16	32+22.00	0.5	27.5	14:17	14:40	1.5	39	15 Deg. West	
15	32+25.50	0.5	27	15:05	15:25	1.5	39	15 Deg. East	
14	32+29.00	0.5	27	15:45	16:05	1.5	39	15 Deg. West	
13	32+32.50	0.5	27	16:17	16:26	1.5	39	15 Deg. East	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS:

Experiencing equipment problems - batch plant pumps down in AM.

110.5

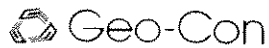
Date: 12/6/04

Batch Plant

[illegible]

Mark E. Kite
Geo-Con, Inc

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/7/04
Shift: 7:00am - 5:00pm
Weather: Cold / Overcast / Rain

Page 1 of 1

Personnel Onsite		Equipment Onsite
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Edmond Johnson	Op. Geo-Con	Light Plant
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps
Joey Rood	Op. Geo-Con	Geo-Con C7 Drill Rig
Ken Beighley	Lab/Op Geo-Con	CAT D5 Dozer
Harry Barskite	Op. Geo-Con	
Tom Cook	Op. Geo-Con	
Wes Barber	Op. Geo-Con	

Testing Performed Today	Meetings Held Today
	Toolbox Safety Weekly Progress Meeting

Activities Today
Completed Capping Continued Jet Grouting

Issues/Deficiencies	Materials Received
Hit concrete floor at 20 feet between stations 23+59 and 23+45. Hit concrete floor at 12 feet between stations 18+48 and 18+04 Obstruction on Drill hole #2	

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____
CRA

Date: 12/7/04

Batch Plant

[illegible]

Mark E. Kitch

Geo-Con, Inc

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/7/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	
12	32+36.00	0.5	27	8:30	8:49	1.5	39	15 Deg. West	Orientation is recorded as facing North
11	32+39.50	0.5	27	9:33	9:51	1.5	39	15 Deg. East	
10	32+43.00	0.5	27	10:13	10:31	1.5	39	90 Deg. North/South	Corner - See Sketch
9	32+46.50	0.5	27	10:45	11:04	1.5	39	90 Deg. East/West	Corner - See Sketch
7	32+53.50					Not Grouted - Obstruction 14.5'			
6	32+57.00					Not Grouted - Obstruction			
19	32+11.50	0.5	27.5	13:40	14:00	1.5	39	15 Deg. East	
20	32+08.00	0.5	27.5	14:20	14:41	1.5	39	15 Deg. West	
21	32+04.50	0.5	27.5	14:54	15:14	1.5	39	15 Deg. East	
22	32+01.00	0.5	27.5	15:36	15:54	1.5	39	15 Deg. West	
23	31+97.50	0.5	27.5	16:10	16:27	1.5	39	15 Deg. East	
24	31+94.00	0.5	27.5	16:50	17:08	1.5	39	15 Deg. West	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS:

W
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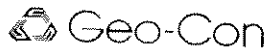
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Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/8/04
Shift: 7:00am - 5:00pm
Weather: Cool / Overcast

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps	
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor	
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift	
Edmond Johns	Jet Pump Op.	Light Plant	
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig	
Ken Beighley	Drill Help	CAT D5 Dozer	
Harry Barskite	Drill Op.		
Tom Cook	Exc. Op		
Wes Barber	Loader Op.		
Testing Performed Today		Meetings Held Today	
		Toolbox Safety	
Activities Today			
Continued Jet Grouting Began Site Cleanup - 2 Trucks onsite hauling excess spoils to onsite disposal area. Continued Exploration to locate/encase active utilities on south side as per Field Order 4.			
Issues/Deficiencies		Materials Received	
Obstruction on Drill hole #2			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____
CRA



Jet Grout Quality Control
Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant

Date: 12/8/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
25	31+90.50	1	27.5	8:56	9:14	1.5	39	15 Deg. East	665	
26	31+87.00	1	27.5	9:45	10:04	1.5	39	15 Deg. West	670	
27	31+83.50	1	27.5	10:30	10:48	1.5	39	15 Deg. East	672	
28	31+80.00	1	28	11:20	11:38	1.5	39	15 Deg. West	679	
29	31+76.50	1	28	12:19	12:37	1.5	39	15 Deg. East	689	
30	31+73.00	1	28	12:55	13:15	1.5	39	15 Deg. West	720	
31	31+69.50	1	28	13:26	13:45	1.5	39	15 Deg. East	700	
32	31+66.00	1	28	14:03	14:21	1.5	39	15 Deg. West	700	
33	31+62.50	1	28	14:35	14:52	1.5	39	15 Deg. East	700	
34	31+59.00	1	28	15:06	15:25	1.5	39	15 Deg. West	710	
35	31+55.50	1	28	15:37	15:56	1.5	39	15 Deg. East	700	
36	31+52.00	1	28	16:00	16:37	1.5	39	15 Deg. West	690	
37	31+48.50	1	28	16:43	17:09	1.5	39	15 Deg. East	700	
38	31+45.00	1	28	17:13	17:45	1.5	39	15 Deg. West	700	

Nozzle Size 3.0mm
Grout Pressure : 3000psi
Water Pressure: N/A

Rotation Rate : None
Air Pressure: N/A
Grout Mix Impermix

Driller Name: Harry Barskite
Rig: Casagrande C7

COMMENTS: All Columns are on 3.5 ' spacing and are drilled vertical.

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Geo-Con, Inc



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/9/04
Shift: 7:00am - 5:00pm
Weather: Cool / Overcast

Page 1 of 1

Personnel Onsite		Equipment Onsite
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Edmond Johnst	Jet Pump Op.	Light Plant
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom &Stick, Batch Plant and Pumps
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig
Ken Beighley	Drill Help	CAT D5 Dozer
Harry Barskite	Drill Op.	
Tom Cook	Exc. Op	
Wes Barber	Loader Op.	
Testing Performed Today		Meetings Held Today
		Toolbox Safety
Activities Today		
Continued Jet Grouting <i>No - Truck</i> Began Site Cleanup - 2 Trucks onsite hauling excess spoils to onsite disposal area. Continued Exploration to locate/encase active utilities on south side as per Field Order 4.		
Issues/Deficiencies		Materials Received
Obstruction on Drill hole #2		

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: *Mark E. Kitko*
Mark Kitko Geo-Con, Inc.

Received By: _____
CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/9/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
39	31+45.00	1	28	7:45	8:27	1.5	39	15 Deg. East	707	
40	31+41.50	1	28	8:31	9:30	1.5	39	15 Deg. West	670	
41	31+38.00	1	28	9:35	10:07	1.5	39	15 Deg. East	690	
42	31+34.50	1	28	10:10	10:38	1.5	39	15 Deg. West	695	
43	31+31.00	1	28	10:40	11:07	1.5	39	15 Deg. East	690	
44	31+27.50	1	28	11:09	11:40	1.5	39	15 Deg. West	690	
45	31+24.00	1	28	12:05	12:42	1.5	39	15 Deg. East	680	
46	31+20.50	1	28	12:45	13:06	1.5	39	15 Deg. West	690	
47	31+17.00	1	28	13:20	14:10	1.5	39	15 Deg. East	750	
48	31+13.50	1	28	14:15	14:51	1.5	39	15 Deg. West	740	
49	31+10.00	1	28	14:55	15:25	1.5	39	15 Deg. East	680	
50	31+06.50	1	28	15:35	15:56	1.5	39	15 Deg. West	735	
51	31+03.00	1	28	15:58	16:24	1.5	39	15 Deg. East	708	
52	30+99.50	1	28	16:26	16:50	1.5	39	15 Deg. West	695	
53	30+96.00	1	28	16:55	17:20	1.5	39	15 Deg. East	705	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS:

All Columns are on 3.5' spacing and are drilled vertical.

Panels # 38, 39 are same location

Batch Plant

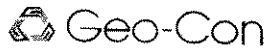
Batches Mixed	Batch Size	Lbs Cement	Lbs Clay	Gallons Water	Time Batched	Time Pumped	Specific Gravity	Panel #
1	606	880	200	555	7:15		1.14	
2	606	880	200	558	7:35		1.14	
3	606	880	200	556	8:00		1.14	
4	606	880	200	560	8:30		1.14	
5	606	880	200	557	9:30		1.14	
6	606	880	200	557	10:00		1.14	
7	606	880	200	558	10:30		1.14	
8	606	880	200	556	10:35		1.14	
9	606	880	200	555	11:10		1.14	
10	606	880	200	555	11:30		1.14	
11	606	880	200	560	12:15		1.14	
12	606	880	200	554	12:45		1.14	
13	606	880	200	552	13:15		1.14	
14	606	880	200	557	13:45		1.14	
15	606	880	200	557	14:15		1.14	
16	606	880	200	557	15:00		1.14	
17	606	880	200	554	15:30		1.14	
18	800	1200	500	760	16:00		1.14	
19	700	1040	200	651	16:30		1.14	

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Keith

Geo-Con, Inc

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/13/04
Shift: 7:00am - 5:00pm
Weather: Cold / Overcast / Snow

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps	
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor	
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift	
Edmond Johnse	Jet Pump Op.	Light Plant	
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig	
Ken Beighley	Drill Help	CAT D5 Dozer	
Harry Barskite	Drill Op.		
Tom Cook	Exc. Op		
Wes Barber	Loader Op.		
Testing Performed Today		Meetings Held Today	
		Toolbox Safety	
Activities Today			
Continued Jet Grouting Continued Site Cleanup - 1 Truck onsite hauling excess spoils to onsite disposal area. <i>offsite @ 1200</i> Began Concrete Disposal - Sent 12 Loads to Woodland Meadows Landfill			
Issues/Deficiencies		Materials Received	
Obstruction on Drill hole #2			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA



Jet Grout Quality Control
Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant

Date: 12/13/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
78	30+18.50	1	28	8:15	10:20	1.5	39	15 Deg. West	705	
79	30+15.00	1	28	10:30	11:00	1.5	39	15 Deg. East	708	
80	30+11.50	1	28	11:05	11:35	1.5	39	15 Deg. West	687	
81	30+08.00	1	28	12:45	13:15	1.5	39	15 Deg. East	724	
82	30+04.50	1	28	13:20	17:50	1.5	39	15 Deg. West	688	
83	30+01.00	1	28	14:00	14:50	1.5	39	15 Deg. East	661	
84	29+97.50	1	28	15:20	16:10	1.5	39	15 Deg. West	660	
85	29+94.00	1	28	16:20	17:00	1.5	39	15 Deg. East	690	
86	29+90.50	1	28	17:05	17:45	1.5	39	15 Deg. West	710	

Nozzle Size 3.0mm
Grout Pressure : 3000psi
Water Pressure: N/A

Rotation Rate : None
Air Pressure: N/A
Grout Mix Impermix

Driller Name: Harry Barskite
Rig: Casagrande C7

COMMENTS: All Columns are on 3.5 ' spacing and are drilled vertical.

Date: 12/13/04

Batch Plant

[illegible]

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Kitch
Geo-Con, Inc

CRA



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/14/04
Shift: 7:00am - 5:00pm
Weather: Cold / P. Cloudy

Page 1 of 1

Personnel Onsite		Equipment Onsite
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps
George Warrington	Supt Geo-Con	CAT 320 Excavaor
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Edmond Johnson	Jet Pump Op.	Light Plant
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig
Ken Beighley	Drill Help	CAT D5 Dozer
Harry Barskite	Drill Op.	
Tom Cook	Exc. Op	
Wes Barber	Loader Op.	
Testing Performed Today		Meetings Held Today
		Toolbox Safety Weekly Progress Meeting
Activities Today		
Continued Jet Grouting Continued Site Cleanup - 1 Truck onsite hauling excess spoils to onsite disposal area. <i>NO</i> Continued Concrete Disposal - Sent 16 Loads to Woodland Meadows Landfill		
Issues/Deficiencies		Materials Received
Obstruction on Drill hole #2		

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: *Mark E. Kitko*
Mark Kitko Geo-Con, Inc.

Received By:

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/14/04

Project Number: P04-086

Jet Grout Barrier Wall Installation										
Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
87	29+72.00	1	28	8:10	8:50	1.5	39	15 Deg. East	748	See attached
88	29+68.50	1	28	9:00	9:45	1.5	39	15 Deg. West	692	spreadsheet for station
89	29+65.00	1	28	10:00	10:30	1.5	39	15 Deg. East	709	corrections.
90	29+61.50	1	28	10:40	12:40	1.5	39	15 Deg. West	679	
91	29+58.00	1	28	12:50	13:25	1.5	39	15 Deg. East	721	
92	29+54.50	1	28	13:30	14:10	1.5	39	15 Deg. West	700	
93	29+51.00	1	28	14:11	14:23	1.5	39	15 Deg. East	676	
94	29+47.50	1	28	14:35	15:15	1.5	39	15 Deg. West	684	
95	29+44.00	1	28	15:17	15:45	1.5	39	15 Deg. East	678	
96	29+40.50	1	28	15:47	16:20	1.5	39	15 Deg. West	720	
97	29+37.00	1	28	16:25	16:50	1.5	39	15 Deg. East	699	
98	29+33.50	1	28	16:55	17:25	1.5	39	15 Deg. West	650	
99	29+30.00	1	28	17:30	18:00	1.5	39	15 Deg. East	660	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5' spacing and are drilled vertical.





Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/15/04
Shift: 7:00am - 5:00pm
Weather: Cold / Clear

Page 1 of 1

Personnel Onsite	Equipment Onsite
Sam Keller	Supt Geo-Con
George Warrington	Supt Geo-Con
Mark Kitko	Eng. Geo-Con
Edmond Johnson	Jet Pump Op.
Doug Healey	Lab/Op Geo-Con
Joey Rood	Batch Plant Op.
Ken Beighley	Drill Help
Harry Barskite	Drill Op.
Dave Gayer	OP Geo-Con
Doyle Hodge	Lab/Op Geo-Con
Tom Cook	Exc. Op
Wes Barber	Loader Op.
	Geo-Con Jet Pumps
	CAT 320 Excavaor
	CAT TH83 Forklift
	Light Plant
	Geo-Con Boom & Stick, Batch Plant and Pumps
	Geo-Con C7 Drill Rig
	CAT D5 Dozer
Testing Performed Today	Meetings Held Today
	Toolbox Safety
Activities Today	
Continued Jet Grouting	
Continued site Cleanup - Finished Final Grading on NW Corner to Fence North of Driveway OK	
Issues/Deficiencies	Materials Received

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By:

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/15/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
104	32+84.50	1	28	9:45	10:15	1.5	39	15 Deg. West	739	See attached
103	32+83.00	1	28	11:15	11:45	1.5	39	15 Deg. East	677	spreadsheet for station
102	32+79.50	1	28	12:00	12:40	1.5	39	15 Deg. West	664	corrections.
100	32+74.50	1	28	12:50	13:20	1.5	39	North South	719	
101	32+76.00	1	28	13:30	14:05	1.5	39	15 Deg. West	755	
2	32+71.00	1	28	14:25	14:50	1.5	39	15 Deg. East	766	
3	32+67.50	1	28	14:55	15:30	1.5	39	15 Deg. West	728	
4	32+64.00	1	28	15:35	16:00	1.5	39	15 Deg. East	707	
5	32+60.50	1	28	16:05	16:25	1.5	39	15 Deg. West	710	
5A	32+57.00	1	28	17:10	17:45	1.5	39	Visually Oriented	710	Re-Alignment around
								See As-Built Sketch		manhole

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5' spacing and are drilled vertical.

D.

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Keith

Geo-Con, Inc.

CRA

0+00
Start
Slurry
Wall

12 + 00

107
106
105

104
#1

103

102

101

100

#2

#3

#4

#5

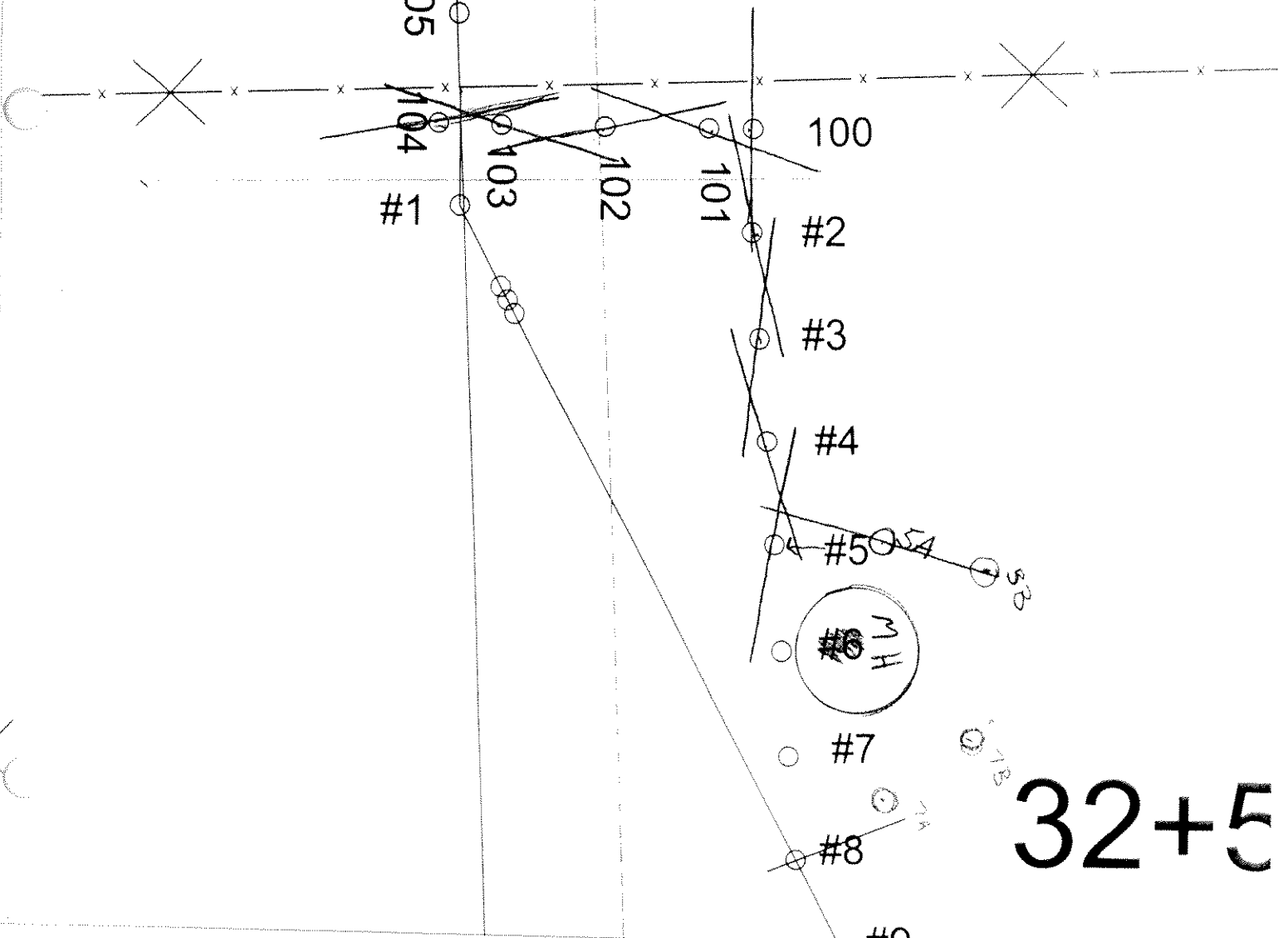
#6

#7

#8

#9

32+5





Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/10/04
Shift: 7:00am - 5:00pm
Weather: Cold / Overcast / Rain

Page 1 of 1

Personnel Onsite		Equipment Onsite
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift
Edmond Johnst	Jet Pump Op.	Light Plant
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig
Ken Beighley	Drill Help	CAT D5 Dozer
Harry Barskite	Drill Op.	
Tom Cook	Exc. Op	
Wes Barber	Loader Op.	
Testing Performed Today		Meetings Held Today
		Toolbox Safety
Activities Today		
Continued Jet Grouting Continued Site Cleanup - 2 Trucks onsite hauling excess spoils to onsite disposal area.		
Issues/Deficiencies		Materials Received
Obstruction on Drill hole #2		

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Date: 12/10/04

Batch Plant

Batches Mixed	Batch Size	Lbs Cement	Lbs Clay	Gallons Water	Time Batched	Time Pumped	Specific Gravity	Panel #
1	606	880	200	553	7:15		1.14	
2	606	880	200	555	7:30		1.14	
3	606	880	200	556	8:00		1.14	
4	606	880	200	554	8:20		1.14	
5	606	880	200	557	8:45		1.14	
6	606	880	200	560	9:15		1.14	
7	606	880	200	559	9:35		1.14	
8	606	880	200	561	10:00		1.14	
9	606	880	200	559	10:20		1.14	
10	606	880	200	562	10:50		1.14	
11	606	880	200	559	12:15		1.14	
12	950	1440	1200	902	13:00		1.14	
13	606	880	200	559	13:20		1.14	
14	606	880	200	561	13:45		1.14	
15	606	880	200	559	16:15		1.14	
16	606	880	200	556	16:35		1.14	
17	606	880	200	554	15:00		1.14	
18	800	1200	500	553	15:30		1.14	
19	700	1040	200	559	16:00		1.14	

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Kitch

Geo-Con, Inc

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/10/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
54	30+99.50	1	28	7:50	8:45	1.5	39	15 Deg. West	725	
55	30+96.00	1	28	8:50	9:25	1.5	39	15 Deg. East	732	
56	30+92.50	1	28	9:30	10:07	1.5	39	15 Deg. West	754	
57	30+89.00	1	28	10:10	10:40	1.5	39	15 Deg. East	723	
58	30+85.50	1	28	11:07	12:40	1.5	39	15 Deg. West	742	
59	30+82.00	1	28	12:45	13:45	1.5	39	15 Deg. East	702	
60	30+78.50	1	28	13:20	13:45	1.5	39	15 Deg. West	693	
61	30+75.00	1	28	13:47	14:30	1.5	39	15 Deg. East	709	
62	30+71.50	1	28	14:45	15:25	1.5	39	15 Deg. West	738	
63	30+68.00	1	28	15:27	16:10	1.5	39	15 Deg. East	730	
64	30+64.50	1	28	16:45	16:51	1.5	39	15 Deg. West	723	
65	30+61.00	1	28	16:05	16:30	1.5	39	15 Deg. East	718	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5 ' spacing and are drilled vertical.



Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant
13000 Eckles Road Livonia, Michigan
Daily Contractor Quality Control Report

Date: 12/11/04
Shift: 7:00am - 5:00pm
Weather: Cold / Overcast / Rain / Snow

Page 1 of 1

Personnel Onsite		Equipment Onsite	
Sam Keller	Supt Geo-Con	Geo-Con Jet Pumps	
Norm Mayo	Supt Geo-Con	CAT 320 Excavaor	
Mark Kitko	Eng. Geo-Con	CAT TH83 Forklift	
Edmond Johnse	Jet Pump Op.	Light Plant	
Doug Healey	Lab/Op Geo-Con	Geo-Con Boom & Stick, Batch Plant and Pumps	
Joey Rood	Batch Plant Op.	Geo-Con C7 Drill Rig	
Ken Beighley	Drill Help	CAT D5 Dozer	
Harry Barskite	Drill Op.		
Tom Cook	Exc. Op		
Wes Barber	Loader Op.		
Testing Performed Today		Meetings Held Today	
		Toolbox Safety	
Activities Today			
Continued Jet Grouting Continued Site Cleanup - 2 Trucks onsite hauling excess spoils to onsite disposal area.			
Issues/Deficiencies		Materials Received	
Obstruction on Drill hole #2			

On behalf of the contractor, I certify the this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report

Prepared By: Mark E. Kitko
Mark Kitko Geo-Con, Inc.

Received By: _____

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/11/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
66	30+50.50	1	28	7:45	9:25	1.5	39	15 Deg. West	720	
67	30+47.00	1	28	9:30	10:10	1.5	39	15 Deg. East	719	
68	30+43.50	1	28	10:15	10:50	1.5	39	15 Deg. West	719	
69	30+40.00	1	28	11:00	11:45	1.5	39	15 Deg. East	680	
70	30+36.50	1	28	12:20	12:50	1.5	39	15 Deg. West	730	
71	30+33.00	1	28	12:55	13:30	1.5	39	15 Deg. East	716	
72	30+29.50	1	28	13:40	14:15	1.5	39	15 Deg. West	680	
73	30+26.00	1	28	14:25	15:00	1.5	39	15 Deg. East	670	
74	30+22.50	1	28	15:05	15:40	1.5	39	15 Deg. West	693	
75	30+19.00	1	28	15:45	16:08	1.5	39	15 Deg. East	704	
76	30+15.50	1	28	16:15	17:00	1.5	39	15 Deg. West	707	
77	30+12.00	1	28	17:05	17:45	1.5	39	15 Deg. East	720	

Nozzle Size: 3.0mm
 Grout Pressure: 3000psi
 Water Pressure: N/A

Rotation Rate: None
 Air Pressure: N/A
 Grout Mix: Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5' spacing and are drilled vertical.

Panel #66 is 10.5' from panel #65

Date: 12/11/04

Batch Plant

[illegible]

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Kitch
Geo-Con, Inc

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/16/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
5B		1	28	9:00	10:00	1.5	39	Visually Oriented	719	See attached
6		1	28	10:15	10:35	1.5	39	Visually Oriented	705	spreadsheet for station
7		1	28	10:45	11:15	1.5	39	Visually Oriented	716	corrections.
7A		1	28	11:20	11:45	1.5	39	Visually Oriented	711	
105		1	28	13:10	14:30	1.5	39	15 Deg. West	695	
106		1	28	14:45	15:25	1.5	39	15 Deg. East	718	
107		1	28	15:35	16:30	1.5	39	15 Deg. West	672	Drill Rod penetrated
										to 28' with no down
										pressure - Into complete
										slurry wall.

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5' spacing and are drilled vertical.
 Columns 5A, 5B, 6, 7, and 7A were arranged on minimum 3.5' spacing around existing manhole. Panel angles were set by extracting the drill rod and visually aligning the jets to assure sufficient overlap with previously installed panel. Drill string was then held in place and sent back down the pre-drilled drillhole. During grouting of 7A (last hole) return was observed from 5A, 5B, 6, and 7, indicating good panel connection. See as-built for location and orientation

Batch Plant

[illegible]

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Kitch
Geo-Con, Inc

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/17/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
NE1	Pre-Drilled Casings	15	30	13:00	13:15	1.5	39	15 Deg. West	401	
NE2		15	30	13:20	13:40	1.5	39	15 Deg. East	389	
NE3		15	30	13:45	14:00	1.5	39	15 Deg. West	396	
NE4		15	30	14:10	14:30	1.5	39	15 Deg. East	382	
NE5		15	30	14:40	15:05	1.5	39	15 Deg. West	391	
NE6		15	30	15:15	15:40	1.5	39	15 Deg. East	405	
NE7		15	30	15:50	16:15	1.5	39	15 Deg. West	384	
NE8		15	30	16:20	16:35	1.5	39	15 Deg. East	393	
NE9		15	30	16:40	17:05	1.5	39	15 Deg. West	389	
NE10		15	30	17:15	17:45	1.5	39	15 Deg. East	388	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5 ' spacing and are drilled vertical.

Batch Plant

[illegible]

Design Mix - 555 Gallons Water, 4 Bags Clay, 11 Bags Cement.

Mark E. Keith

Geo-Con, Inc

CRA

Jet Grout Quality Control

Area 1 Barrier Wall - Eckles Road Site

Former Delphi Chassis Plant

Date: 12/18/04

Project Number: P04-086

Jet Grout Barrier Wall Installation

Panel No.	Station #	Depth(s)		Time		Lift Rate	Flow Rate	Column Orientation	Grout Take	Comments
		Top	Bottom	Start	Finish	(FT/MIN)	(GPM)	Deg. E or W	Gallons	
NE11	Pre-Drilled Casings	15	30	8:43	8:54	1.5	39	15 Deg. West	409	
NE12		15	30	9:29	9:39	1.5	39	15 Deg. East	391	
NE13		15	30	10:11	10:21	1.5	39	15 Deg. West	388	
SE1		20	30	12:35	12:41	1.5	39	15 Deg. East	245	
SE2		20	30	13:16	13:24	1.5	39	15 Deg. West	281	
SE3		20	30	13:30	13:38	1.5	39	15 Deg. East	281	
SE4		20	30	13:45	13:53	1.5	39	15 Deg. West	273	

Nozzle Size 3.0mm
 Grout Pressure : 3000psi
 Water Pressure: N/A

Rotation Rate : None
 Air Pressure: N/A
 Grout Mix Impermix

Driller Name: Harry Barskite
 Rig: Casagrande C7

COMMENTS: All Columns are on 3.5 ' spacing and are drilled vertical.

Final Jet Grout Wall Panel Locations
Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant

Drill Hole Number	Station	Date Drilled	Depth	
1		4-Dec	27	
2	32+79.50		27	
3	32+76.00		27	
4	32+72.50		27	
5	32+69.00		27	
5A	32+65.50	16-Dec	28	Around Manhole
5B	32+62.00		28	Around Manhole
6	32+58.50		28	Around Manhole
7	32+55.00		28	Around Manhole
7A	32+51.50		27	Around Manhole- Tie into Jet Grout Wall
8	32+50.00	4-Dec	27	First Panel Installed
9	32+46.50	7-Dec	27	
10	32+43.00		27	
11	32+39.50		27	
12	32+36.00		27	
13	32+32.50	6-Dec	27	
14	32+29.00		27	
15	32+25.50		27	
16	32+22.00		27.5	
17	32+18.50		27.5	
18	32+15.00		27.5	
19	32+11.50	7-Dec	27.5	
20	32+08.00		27.5	
21	32+04.50		27.5	
22	32+01.00		27.5	
23	31+97.50		27.5	
24	31+94.00		27.5	
25	31+90.50	8-Dec	27.5	
26	31+87.00		27.5	
27	31+83.50		27.5	
28	31+80.00		28	
29	31+76.50		28	
30	31+73.00		28	
31	31+69.50		28	
32	31+66.00		28	
33	31+62.50		28	
34	31+59.00		28	
35	31+55.50		28	
36	31+52.00		28	
37	31+48.50		28	
38	31+45.00		28	
39	31+41.50	9-Dec	28	
40	31+38.00		28	
41	31+34.50		28	
42	31+31.00		28	
43	31+27.50		28	

Drill Hole Number	Station	Date Drilled	Depth
44	31+24.00		28
45	31+20.50		28
46	31+17.00		28
47	31+13.50		28
48	31+10.00		28
49	31+06.50		28
50	31+03.00		28
51	30+99.50		28
52	30+96.00		28
53	30+92.50		28
54	30+89.00	10-Dec	28
55	30+85.50		28
56	30+82.00		28
57	30+78.50		28
58	30+75.00		28
59	30+71.50		28
60	30+68.00		28
61	30+64.50		28
62	30+61.00		28
63	30+57.50		28
64	30+54.00		28
65	30+50.50		28
66	30+47.00	11-Dec	28
67	30+43.50		28
68	30+40.00		28
69	30+36.50		28
70	30+33.00		28
71	30+29.50		28
72	30+26.00		28
73	30+22.50		28
74	30+19.00		28
75	30+15.50		28
76	30+12.00		28
77	30+08.50		28
78	30+05.00	13-Dec	28
79	30+01.50		28
80	29+98.00		28
81	29+94.50		28
82	29+91.00		28
83	29+87.50		28
84	29+84.00		28
85	29+80.50		28
86	29+77.00		28
87	29+73.50	14-Dec	28
88	29+70.00		28
89	29+66.50		28
90	29+63.00		28
91	29+59.50		28
92	29+56.00		28
93	29+52.50		28
94	29+49.00		28
95	29+45.50		28
96	29+42.00		28

Drill Hole Number	Station	Date Drilled	Depth	
97	29+38.50		28	
98	29+35.00		28	
99	29+31.50		28	Slurry Wall Tie-In
100	32+83.00	16-Dec	28	
101	32+84.50		28	
102	32+88.00		28	
103	32+91.50		28	
104	32+93.00		28	East of Fence
105	32+96.50		28	West of Fence
106	33+00.00		28	
107	33+03.50		28	Slurry Wall Tie-In

Lineal Footage of Jet Grout Wall (Beginning of First Panel to End of Last Panel)
= 380.00 ft

Total Panels
= 110 panels

Average Depth
= 27.8 ft below ground surface

Total Square Footage of Jet Grout Wall
= 10573.76 Lineal Square Feet

Extra Jet Grouting
Area 1 Barrier Wall - Eckles Road Site
Former Delphi Chassis Plant

Drill Hole Number	Station	Date Drilled	Interval Grouted	LF Grouted
NE1	18+05.00	17-Dec	15-30	15
NE2	18+08.50		15-30	15
NE3	18+12.00		15-30	15
NE4	18+15.50		15-30	15
NE5	18+19.00		15-30	15
NE6	18+22.50		15-30	15
NE7	18+26.00		15-30	15
NE8	18+29.50		15-30	15
NE9	18+33.00		15-30	15
NE10	18+36.50		15-30	15
NE11	18+40.00	18-Dec	15-30	15
NE12	18+43.50		15-30	15
NE13	18+47.00		15-30	15
SE1	23+59.00		20-30	10
SE2	23+55.50		20-30	10
SE3	23+52.00		20-30	10
SE4	23+48.50		20-30	10

NorthEast Extra Jet Grouting

Lineal Footage of Jet Grout Wall (Beginning of First Panel to End of Last Panel)
= 50.00 ft

Total Panels
= 13 panels

Average Linear Footage Grouted
= 15.0 ft below ground surface

Total Square Footage of Jet Grout Wall
= 750.00 Lineal Square Feet

SouthEast Extra Jet Grouting

Lineal Footage of Jet Grout Wall (Beginning of First Panel to End of Last Panel)
= 18.50 ft

Total Panels
= 4 panels

Average Linear Footage Grouted
= 10.0 ft below ground surface

Total Square Footage of Jet Grout Wall
= 185.00 Lineal Square Feet

TOTAL EXTRA JET GROUTING SQUARE FOOTAGE = 935.00 SF