Remedial Construction Certification Report
Industrial Welding Site-Operable Unit 3
(Packard Road Site)

Niagara Falls, New York

Prepared for:

Olin Corporation
Environmental Remediation Group
Charleston, Tennessee

Prepared by:

MACTEC Engineering and Consulting, P.C.

In Association With
MACTEC Engineering and Consulting, Inc.

Kennesaw, Georgia

February 15, 2008
Revised August 19, 2008
MACTEC Project No. 6100-07-0005

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MACTEC

engineering and constructing a better tomorrow

August 27, 2008

Mr. Mike Bellotti
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312

Subject: **Letter of Transmittal**
Revisions to Documents
Industrial Welding Site - Operable Unit 3 (Packard Road Site)
MACTEC Project: 6100-07-0005

Dear Mr. Bellotti:

MACTEC Engineering and Consulting, P.C., in association with MACTEC Engineering and Consulting, Inc., (MACTEC) is pleased to provide you with electronic files of the Remedial Construction Certification Report and the Site Management Plan for Operable Unit 3 (OU3) for the Industrial Welding Site (Packard Road Site), revised on August 19, 2008. The revised reports include pages which were prepared in response to comments provided by NYSDEC in a letter to Olin dated July 30, 2008.

In accordance with a phone discussion between Rick Marotte of MACTEC and Jeffrey Konsella of NYSDEC on August 5, 2008, selected pages of the reports were revised in response to all but comment 2 on page 2 of the above referenced letter. This comment requests that Olin provide a certification statement (consisting of 3 paragraphs) that includes reference to an executed and recorded Environmental Easement. This form has not been completed. As agreed to by Mr. Konsella, the certification statement will be submitted to NYSDEC after the Environmental Easement has been executed by Olin and recorded and accepted by the State of New York. Mr. Konsella will be providing Olin with the necessary paperwork for this easement.

Revisions were made to Section 8.0 of the Remedial Construction Certification Report, Section 5.0 of the Site Management Plan, and the report cover pages as itemized below.

<u>Revisions to Remedial Construction Certification Report:</u>

- Cover pages (2)
- Section 8.0, page 8-2

<u>Revisions to Site Management Plan:</u>

- Cover page
- Section 5.0, pages 3 and 4

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The above listed pages supersede the previously issued pages of the reports dated February 15, 2008. We are enclosing three CDs, each containing: revised Remedial Construction Certification Report; revised Site Management Plan; and separate scanned copies of the revised pages (in two files) with the changes annotated. One CD is for your files and two CDs are for transmittal to NYSDEC.

MACTEC appreciates the opportunity to be of service to Olin Corporation. If you have any questions or comments about this project please do not hesitate to call us at (770) 421-3400.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, P.C.

Glenn N. Coffman, P.E.
Vice President

Frederick K. Marotte
Project Manager
MACTEC Engineering and Consulting, Inc.

Enclosures: Three CDs containing revised reports and scanned revised pages as itemized in this letter

MACTEC

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February 18, 2008

Mr. Mike Bellotti
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312

Subject: LETTER OF TRANSMITTAL
Remedial Construction Certification Report
Industrial Welding Site - Operable Unit 3 (Packard Road Site)
MACTEC Project: 6100-07-0005

Dear Mr. Bellotti:

MACTEC Engineering and Consulting, P.C., in association with MACTEC Engineering and Consulting, Inc., (MACTEC) is pleased to provide you with the Remedial Construction Certification Report for the Industrial Welding Site - Operable Unit 3 (Packard Road Site).

MACTEC appreciates the opportunity to be of service to Olin Corporation. If you have any questions or comments about this project please do not hesitate to call us at (770) 421-3400.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, P.C.

Glenn N. Coffman, P.E.
Vice President

Frederick K. Marotte
Project Manager
MACTEC Engineering and Consulting, Inc.

Enclosures: Remedial Construction Certification Report

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TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

ALP	American Legion Post
AASHTO	American Association of State Highway and Transportation Officials
ASTM	American Society for Testing and Materials
bgs	below ground surface
cm/sec	centimeters per second
CQA	Construction Quality Assurance
CQC	Construction Quality Control
EPA	Environmental Protection Agency
HASP	Health and Safety Plan
HSO	Health and Safety Officer
IWS	Industrial Welding Site
MACTEC	MACTEC Engineering and Consulting, P.C. and MACTEC Engineering and Consulting, Inc.
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
O&M	Operation and Maintenance
Olin	Olin Corporation
OSHA	Occupational Health and Safety Administration
P.E.	Professional Engineer
PM	Project Manager
RA	Remedial Action
RFI	Request for Information
Site	Packard Road Site
SPDES	State Pollutant Discharge Elimination System
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WCD	Work Change Directive

EXECUTIVE SUMMARY

Remedial action was performed at the Packard Road Site (Site), Operable Unit 3 (OU 3) of the Industrial Welding Inactive Hazardous Waste Site (IWS) located in Niagara Falls, New York. The Site became OU 3 of the IWS in 2005. On March 24, 2005, Olin was notified in a telephone discussion between Mike Bellotti of Olin and Jeff Konsella of the New York State Department of Environmental Conservation (NYSDEC) that Olin's request that the Site become OU 3 of the IWS was approved and no further study would be required. Mr. Konsella also informed Olin at this time that the proposed containment remedy (asphalt containment cover similar to that utilized for the IWS closure) was also approved. The remedial action represents an implementation of the Conceptual Engineering Design (MACTEC. 2005) that was deemed acceptable by NYSDEC in a letter dated June 24, 2005. A Final Remedial Design Report, dated March 9, 2007 (MACTEC. 2007), described the proposed voluntary remediation of the Site. The Site is contiguous to the IWS Operable Unit 1 (OU 1), which was previously remediated to fulfill a portion of the requirements set forth in an Order on Consent executed March 3, 1997 between NYSDEC and Olin Corporation (Olin). The Final Remedial Design Report was approved by NYSDEC on March 21, 2007.

Remediation activities for the Site were performed from May to August 2007. These activities included, in general: erosion, sediment and stormwater control during remediation; removal of debris and preparation of the Site; stormwater drainage system construction; asphalt cover system construction; repair and seal coating of existing adjacent asphalt cover (a portion of IWS OU 1); installation of perimeter chain link security fencing; and construction of a Site entrance.

This Remedial Construction Certification Report for the Site presents documentation that the remediation activities performed in 2007 were in accordance with the approved Final Remedial Design Report (MACTEC. 2007) and, where deviations were made, describes the changes to the Specifications and Drawings. Remedial action activities, Operation and Maintenance requirements, construction quality assurance and construction quality control procedures, design modifications approved during construction, "as-built" (record) drawings, and backup documentation are presented in this Remedial Construction Certification Report. A Certification of Construction, certifying completion of the Remedial Action in accordance with the NYSDEC approved design and sealed by a New York registered professional engineer, is also included in this Remedial Construction Certification Report.

1.0 BACKGROUND INFORMATION

This Remedial Construction Certification Report (Report) fulfills a portion of the New York State Department of Environmental Conservation (NYSDEC) requirements for remediation of Operable Unit 3 (OU 3) of the Industrial Welding Inactive Hazardous Waste Site (IWS), previously known as the Packard Road Site (Site) located in Niagara Falls, New York. Olin was notified in a telephone discussion between Mike Bellotti of Olin and Jeff Konsella of NYSDEC on March 24, 2005 that Olin's request that the Site become OU 3 of the IWS was approved, and no further study would be required. Mr. Konsella also informed Olin that the proposed containment remedy for OU 3 had been approved. This Report documents the implementation of the remedial design which was presented in the Final Remedial Design Report (MACTEC. 2007) and approved by NYSDEC.

1.1 SITE LOCATION

The Site is bounded by parking lots adjacent to Buffalo Avenue to the South, Veterans Drive (Packard Road) and Gill Creek to the east in the City of Niagara Falls, New York. The Site is immediately south of the IWS OU 1, which was remediated in 1999. Figure 1-1 depicts the location of the Site.

1.2 PROJECT AREA

The project area is shown on the Record Drawings presented in Appendix A. The project area within the limits of the new asphalt cover comprises approximately 3.7 acres.

1.3 SELECTED REMEDY

The Final Remedial Design Report (MACTEC. 2007) was issued on March 9, 2007. The remedial design was approved by letter from NYSDEC to Olin dated March 21, 2007 (included as Appendix B), with conditions regarding submittal of this Report, an executed easement, a revised and updated Operation & Maintenance (O&M) Manual, and a Site Management Plan. Remedial action activities for the Site were performed from May to August 2007. A general description of the designed and constructed remedy components is presented in the following paragraphs of this subsection. More specific information on the remedial action activities is presented in Section 2 of this Report.

An asphalt cover was constructed over an area of approximately 3.7 acres, comprising the entirety of the Site. Erosion, sediment and stormwater control measures were implemented for the duration of the remediation activities. Protection, in-place abandonment or removal of existing utilities was performed in coordination with utility owners. Designated portions of existing fencing, concrete slabs, and all miscellaneous debris and vegetation were either removed from the Site or crushed and placed under the cover. Preparation of the asphalt cover subgrade included grading of on-site soils and placement of aggregate fill material. All soils excavated and graded on the Site were consolidated under the asphalt cover. Storm drainage structures and piping were constructed for collection and transport of surface stormwater runoff from the asphalt cover to Gill Creek.

The asphalt cover consists of a minimum of six inches of aggregate base course and 3 ½ inches of asphalt concrete placed in two courses. The upper one-inch thick asphalt concrete course was constructed of a high asphalt content mix designed to minimize surface water infiltration into the cover. This design is consistent with the low hydraulic conductivity asphalt cover used in the remediation of a portion of IWS OU 1 in 1999. The basis for a low hydraulic conductivity asphalt cover for both projects is the EPA document "Lining of Waste Containment and Other Impoundment Facilities" (Matrecon. 1988). Existing monitoring wells on the Site were protected during the remediation activities, and additional permanent well protection measures were installed. Chain link fencing was constructed to provide security fencing around the full perimeter of the asphalt cover. A new Site entrance was constructed, consisting of a concrete-paved vehicle pull-off lane adjacent to Veterans Drive, asphalt-paved ramp, and 12-foot wide vehicle gate.

Land use restrictions will be applied to the Site property. Land use restrictions preclude future activities at the Site that could materially threaten, compromise, or damage the remedies. The Site property is completely surrounded by security fencing.

2.0 REMEDIAL ACTION ACTIVITIES

This section presents a summary of the Remedial Action construction activities performed from May 21, 2007 to August 10, 2007. The remediation activities included the following:

- Initial and intermediate erosion and sediment controls implementation
- Site clearing and demolition and removal of materials
- Abandonment or removal of existing utilities and protection of monitoring wells
- Stormwater drainage system construction
- Subgrade preparation and construction of aggregate base course
- Asphalt cover construction
- Site access construction
- Chain link fencing installation
- Final erosion and sediment controls implementation

A chronological summary of Remedial Action construction activities is presented in Table 2-1. The Record Drawings are presented as Appendix A.

2.1 REMEDIAL ACTION CONTRACTORS

The following companies provided construction related services to the remediation project:

- Sevenson Environmental Services, Inc., Niagara Falls, New York (Sevenson) was the general contractor (Contractor) for Olin
- MACTEC Engineering and Consulting, P.C., in association with MACTEC Engineering and Consulting, Inc. (MACTEC), was the project designer and provided construction quality assurance for Olin
- SBJ Services, Inc, Buffalo, New York, (SJB) performed construction quality control testing for the project as a subcontractor to Sevenson
- Tri-Point Layout, Inc., Buffalo, New York, (Tri-Point) provided site surveying and record survey drawings as a subcontractor to Sevenson

2.2 INITIAL AND INTERMEDIATE EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures were installed by the Contractor prior to commencement of land-disturbing activities. Construction entrance, silt fencing, stormwater drop inlet protection, and other measures were constructed in conformance with the Design Drawings and Specifications. The installed measures were maintained until the existing disturbed ground surface was stabilized by placement of aggregate base course material, establishment of vegetation, or construction of other permanent stabilization measures, as applicable. In addition, stormwater control measures were implemented to prevent release of water potentially impacted by site materials. Prior to placement of aggregate fill material, stormwater runoff was temporarily collected at stormwater drop inlet locations in accordance with the Erosion and Sediment Control Plan. Collected stormwater and other water in existing buried concrete vaults was pumped into a portable holding tank for discharge to the Niagara Falls Water Board POTW (Refer to subsection 2.4).

2.3 SITE CLEARING AND DEMOLITION AND REMOVAL OF MATERIALS

This work included clearing of site vegetation, demolition and removal of existing materials, and in-place abandonment of existing underground structures to prepare the Site for placement of subgrade fill and construction of the asphalt cover.

Cutting and chipping of existing above-grade vegetation began on May 22. Clearing and grubbing of other vegetation began on May 31. The removed vegetative material was transported and disposed at an appropriate off-site facility.

Demolition and removal of designated fencing, concrete slabs, and other debris was performed from approximately June 5 through June 15. Limited portions of concrete slabs were cut, broken up and placed on the Site in low areas that allowed placement of the required thickness of subgrade fill material and aggregate base under the asphalt cover. Designated sections of existing chain link fencing in the southern and eastern areas of the Site were removed and disposed off-site. Temporary fencing was installed and maintained during the Remedial Action work to provide Site security. Miscellaneous metal and other debris that could not be placed under the asphalt cover was removed and disposed off-site after removing Site soils as necessary.

An existing underground concrete vault located on the north side of the Site was abandoned in place. This vault was observed during a site investigation performed in 2006. The vault, which was covered by a concrete slab, had been filled with soil/gravel material during previous work on the Site. No evidence of residual liquids or other materials was observed. During this remedial construction, portions of the concrete slab that had been previously removed were broken up and placed on-site. Existing fill material was either stabilized in place or removed and replaced with acceptable granular fill material which was compacted in accordance with the Specifications.

2.4 EXISTING UTILITIES AND MONITORING WELLS

The Contractor coordinated with the Niagara Falls Water Board and other utility owners for location and protection or abandonment of existing utilities. Water and sewer utilities on the Site were abandoned in accordance with the requirements of the Niagara Falls Water Board. Abandonment work included: removal of fire hydrants, valve extensions, and other exposed utility appurtenances; cutting of underground pipes at connections to removed utility appurtenances and existing sewer manhole; capping and grouting of pipe ends; removal of manhole covers and tops; removal of residual water in existing electrical manhole; demolition of the electrical manhole and grouting of remaining void spaces; and grouting of the sewer manhole up to existing grade. The Contractor also removed existing overhead electrical lines, light fixtures, poles, and guy wires on the Site.

The residual water in the electrical manhole was pumped into a temporary holding tank on the site prior to off-site transport and disposal. The water in the electrical manhole had been analyzed for SVOCs and pesticides during previous site investigation work (performed in 2006). The results of the analytical testing were sent to the Niagara Falls Water Board as part of a formal request for a temporary revision to Olin's Wastewater Discharge Permit No. ICU-23. The permit revision was requested to allow discharge of residual water resulting from remedial construction activities into the City's POTW. Upon receipt of approval by the Niagara Falls Water Board and issuance of a modification to Olin's Wastewater Discharge Permit, the residual water was discharged to a POTW manhole at the Niagara Falls Wastewater Treatment Plant where directed by the Water Board. A copy of the modified Wastewater Discharge Permit is included as Appendix C.

The three existing monitoring wells within the limits of construction were protected from damage or disturbance during construction. The original design requiring cutting or extending the top of each well riser was modified by MACTEC (refer to subsection 6.1) to maintain the original casing datum elevation

to that previously used. Concrete pads, protective covers, bollards or concrete wheel stops were constructed for permanent protection of the wells as shown on the Record Drawings.

2.5 STORMWATER DRAINAGE SYSTEM

The site stormwater drainage system is comprised of five drop inlets, one junction manhole, a headwall and approximately 975 linear feet of 24-inch and 18-inch reinforced concrete pipe (RCP). The drop inlets consist of precast concrete structures with drainage grates. The junction manhole (MH 2) consists of a precast concrete manhole structure with a solid cover. A 24-inch RCP was installed under Veterans Drive to transport stormwater from MH 2 to the headwall outlet at Gill Creek. The stormwater drainage system, when combined with the completed surface grades, conveys surface runoff from the asphalt surface to Gill Creek in a controlled manner that limits ponding of stormwater on the asphalt cover. The installation of the stormwater drainage system began on June 4 with the installation of the headwall at Gill Creek. Riprap (rock outlet protection) was installed at the headwall (refer to subsection 2.10). The work impacting Gill Creek was performed under the United States Army Corps of Engineers (USACE) Nationwide Permit (NWP) 13 (Bank Stabilization) in accordance with the Pre-Construction Notification document submitted to USACE and the subsequent letter issued by USACE affirming compliance with NWP 13 as discussed in the Final Remedial Design Report (MACTEC. 2007).

The Contractor installed the piping, junction manhole and drop inlets in accordance with the design and as approved by the City of Niagara Falls Engineering Department. The work proceeded upgradient from the headwall, across Veterans Drive, and into the Site. The Contractor coordinated with the City for construction of piping within the right-of-way of Veterans Drive, including the provision of notifications, traffic control and other required procedures. Pavement cutting, trenching, pipe installation, backfilling and pavement restoration for the road crossing were performed in accordance with the City's requirements. As backfilling of pipes and drainage structures progressed, quality control testing was performed by the Contractor's QC firm to check for proper compaction (refer to subsection 5.2). All pipe connections to drop inlets and the manhole were sealed with a non-shrink concrete-bentonite grout mix. A storm drain sampling riser was installed on the pipe between MH 2 and Gill Creek. The sampling riser is located immediately west of the east property line as shown on the Record Drawings.

Plans, profiles and details for the stormwater drainage system as constructed are included in the Record Drawings. Construction of the stormwater drainage system was completed on June 22.

2.6 SUBGRADE PREPARATION AND CONSTRUCTION OF AGGREGATE BASE COURSE

Existing soils were graded to the elevations required for placement of subgrade fill in accordance with the design requirements. Subgrade preparation work included grading of soil mounds, filling of low areas, and other Site grading. All excavated and graded soils on the Site were placed and compacted within the limits of the asphalt cover. No soils were removed from the Site. Proofrolling and compaction of existing soils was performed in accordance with the Specifications.

As approved by MACTEC, the specification for subgrade fill material was modified to allow use of aggregate base course material instead of soil for the full depth of subgrade fill (refer to subsection 6.2). Placement of aggregate base course material was continued up to the bottom elevation for the asphalt cover to provide a minimum compacted thickness of six inches in all areas within the limits of the asphalt cover. The aggregate consists of 2-inch maximum size stone and conforms to the specified material requirements based on MACTEC's review of the supplier's certifications. Field quality control testing of the aggregate was performed by the Contractor's QC firm (refer to subsection 5.3).

Aggregate base course material was graded and compacted to achieve the design criteria presented in the Final Remedial Design Report (MACTEC. 2007), including:

- Grade to the required limits for the asphalt cover;
- Provide subgrade finish slopes of at least 1.5 percent to allow positive drainage of stormwater to drop inlets;
- Provide asphalt cover edge slopes not exceeding 3 horizontal to 1 vertical (3H:1V); and
- Provide a stable base for asphalt cover construction.

Grading and compaction of existing Site soils began on June 6. Placement, compaction, and grading of the aggregate base course material began on June 18, and was completed on July 12.

2.7 ASPHALT COVER SYSTEM

The asphalt cover consists of a 2 ½-inch thick asphalt concrete binder course overlain by a 1-inch thick asphalt concrete surface course. The asphalt concrete mixes conform to the standard mixtures specified by the New York State Department of Transportation (NYSDOT) for Type 3 Binder and Type 7F Top

(surface) courses, with the exception that the surface course has a higher asphalt content than the standard NYSDOT mixture as required in the Specifications to lower the hydraulic conductivity of the asphalt. As stated in the Final Remedial Design Report (MACTEC. 2007), asphalt concrete with higher asphalt content that is properly placed and compacted is projected by the USEPA to have hydraulic conductivities less than 1×10^{-7} cm/sec (USEPA, 1988). This meets the design criteria for the cover to reduce the infiltration of precipitation into the underlying soils and prevent exposure to the Site soils. The asphalt cover was constructed up to the perimeter security fencing on the west, south and east sides of the Site and up to the existing IWS asphalt cover on the north.

Compaction of the asphalt concrete was achieved using vibratory and static passes of a standard steel drum roller. On the side slopes at the edges of the cover, the binder and top courses were placed manually and compacted using manually-guided compactors. Source quality control testing of the asphalt concrete mixtures and in-place density testing of the compacted asphalt concrete courses was performed by the Contractor's QC firm as required in the Specifications. The results of QC testing verified conformance with the Specifications as modified by MACTEC. The requirements for compaction of the asphalt concrete surface course were modified as discussed in subsection 6.3.

The remediation activities also included repair and seal coating of the adjacent existing IWS asphalt cover constructed in 1999. This work included: removal and replacement of deteriorated asphalt in isolated areas; removal of vegetative growth in cracks; sealing of cracks; and application of two coats of an approved mixture of asphalt emulsion, fine aggregate and additive. Documentation for crack sealant and seal coating materials is included as Appendix D. Seal coating of the new asphalt cover was not performed because the constructed asphalt concrete surface course achieved the specified requirements for mixture and in-place density. This is consistent with the IWS remedial action which also did not include seal coating of the asphalt at time of placement. Seal coating of the new asphalt cover will be performed as needed in the future as discussed in Addendum 1 to the IWS O&M Manual (Appendix E).

The lateral extent and the surface elevations of the asphalt cover are shown on the Record Drawings and as-built survey drawing. Placement of the asphalt concrete courses began on July 13, and was completed on July 30.

2.8 SITE ACCESS CONSTRUCTION

A concrete-paved vehicle pull-off lane was constructed along Veterans Drive to provide access to the Site. The reinforced Portland cement concrete pavement was a modification from the original design which called for asphalt pavement (refer to subsection 6.4) and was approved by the City of Niagara Falls Engineering Department. Site access construction also included a 12-foot wide gate (see also subsection 2.9) and an asphalt-paved ramp. The construction was completed in accordance with the agreement and approval of the City of Niagara Falls Engineering Department. The plan layout and details for the work are included on the Record Drawings. Site access construction began on July 9, and was completed on July 20.

2.9 CHAIN LINK FENCING

New 6-foot high chain link fencing was constructed along portions of the southern and eastern edges of the Site as indicated on the Record Drawings. The new fencing was connected to existing fencing which was left in place. Vinyl-coated fencing was installed along Veterans Drive and galvanized fencing was installed along the remainder of the alignment. Fencing was not installed along the northern edge of the new asphalt cover at the junction with the existing IWS asphalt cover. Together with the fencing around the existing IWS, the new and existing chain link fencing provides a secure barrier around the full limits of the asphalt cover. One lockable 12-foot wide access gate was constructed at the Site entrance along Veterans Drive.

2.10 FINAL EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures installed prior to completion of asphalt cover construction included: aggregate shoulder at the limits of asphalt cover along the southern and eastern sides; permanent seeding for establishment of grass in vegetated areas disturbed by construction; and riprap. Riprap was placed at the storm drainage pipe outlet headwall at Gill Creek for stabilization of the creek bank in accordance with the design as modified by MACTEC (refer to subsection 6.6). Temporary erosion and sediment control measures, including silt fencing, drop inlet protection and the construction entrance were removed at completion of the work. The areas that were disturbed by construction were restored to original condition.

3.0 OPERATION AND MAINTENANCE MANUAL

The Operation and Maintenance (O&M) requirements for OU 3 are as presented in applicable portions of the O&M Manual which was prepared for the IWS, dated September 15, 2000. In accordance with requirements of the NYSDEC in their March 21, 2007 approval letter (Appendix B) for the Final Remedial Design Report (MACTEC. 2007), updates and revisions to the IWS O&M Manual are to be provided as part of the remedial construction documentation for OU 3. Appropriate modifications and additions to the O&M requirements are presented as Addendum 1 to the IWS O&M Manual, included in Appendix E of this Report.

4.0 COMMUNITY COMMUNICATIONS

A program for community communications was implemented by Olin to inform the public of planned activities and address community concerns during construction. A summary of community communications activities performed by Olin prior to and during construction is listed below:

- Spring 2006: Olin's community newsletter "Olin Niagara News" included an article titled "Industrial Welding Site Update" by Mr. Mike Bellotti, Principal Remediation Specialist.

- October 19, 2006 – Olin Community Advisory Panel Meeting: Information on the proposed remediation activities at the Packard Road Site was presented by Mike Bellotti.

- October 2, 2007 – Olin Community Advisory Panel Meeting: An update regarding remediation activities at the Packard Road Site was prepared by Mike Bellotti and presented by Brian Vain.

5.0 CONSTRUCTION QUALITY ASSURANCE/CONSTRUCTION QUALITY CONTROL

This section describes the Construction Quality Assurance (CQA) and Construction Quality Control (CQC) Activities conducted during remediation construction.

5.1 HEALTH AND SAFETY

The work was performed under a written Health and Safety Plan (HASP) included in the Final Remedial Design Report (MACTEC. 2007), which was reviewed and approved by NYSDEC. In accordance with the construction documents for the remediation work, the Contractor prepared and implemented a HASP which was at least as stringent as the HASP included in the above referenced Final Remedial Design Report. The Contractor's Health and Safety Officer (HSO) was present on Site to observe the work activities relating to health and safety practices. The HSO also presided over daily meetings with the site workers.

The Contractor's HSO and MACTEC's on-site personnel implemented the Air Monitoring Plan described in the HASP. Air monitoring included perimeter and real time air monitoring at the work site. Real time air monitoring was performed by the Contractor during the remediation activities for protection of employees. On-site, direct-read instruments were used by the Contractor in the areas where work was being performed. The instruments used were designed to detect mercury, volatile organic compounds, and nuisance dust. Site workers also donned Tyvek coveralls due to potential contamination on site prior to cover installation. The Contractor reported that no levels measured by the instruments were above HASP action levels.

Both background and in-progress perimeter air monitoring sampling was performed by on-site MACTEC personnel. Analytical testing of the samples was performed by a qualified independent chemical testing laboratory. Appendix F presents the results of perimeter air monitoring sampling and analysis. This documentation includes: analytical results for background sampling performed on May 31 and June 1; and analytical results for sampling performed during construction on June 26. All of the analyte concentrations were below the action limits presented in the Health and Safety Plan.

5.2 STORMWATER DRAINAGE SYSTEM

Backfilling of pipe trenches and drainage structures was checked by CQA and CQC personnel to verify that compaction of backfill material conformed to the Specifications. Laboratory moisture-density testing was performed on on-site materials proposed for use as trench backfill using standard test method ASTM D 1557. The laboratory testing report is included in Appendix G. CQC personnel measured in-place densities of the compacted backfill material using a Troxler Nuclear Gage (standard test method ASTM D 2922). In-place density test results are presented in Appendix G. The test results showed that the material was compacted in accordance with the Specifications.

5.3 AGGREGATE SUBGRADE FILL AND BASE COURSE

Subgrade fill and base course material consists of 2-inch maximum size stone conforming to the Specifications for aggregate base course material. The design was modified to allow the substitution of aggregate base course material for the full depth of subgrade fill. The aggregate base course under the asphalt cover is six-inch minimum thickness. Gradation information on the aggregate base course material was obtained from the supplier. The information is presented in Appendix H.

Laboratory moisture-density testing was performed on the aggregate base course material. The laboratory testing report is included in Appendix H. CQC personnel measured in-place densities of the compacted aggregate using a Troxler Nuclear Gage. In-place density test results are presented in Appendix H. Each lift was compacted to a density of at least 95 percent of the material's maximum dry density as determined by ASTM D 1557.

The as-built thickness of the aggregate was verified by surveys performed by a New York State licensed land surveyor (LLS). Elevations of the graded soil surface prior to aggregate placement and at the top of aggregate base course after placement were determined at defined survey points. Table 5-1 presents the surveyed elevations and the calculated aggregate thickness at 58 survey points, each of which confirmed the minimum required aggregate base course thickness of six inches. The survey points are shown on the as-built drawing, which is included as part of the Record Drawings in Appendix A.

5.4 ASPHALT CONCRETE COVER

The asphalt concrete pavement which forms the cover over the Site consists of a 2.5-inch thick asphalt concrete binder course and a one-inch thick asphalt concrete surface course. The binder course is NYSDOT Type 3 Binder. The surface course is NYSDOT Type 7F Top, modified to increase the asphalt content to 8 (+/- 0.4) percent to produce a lower hydraulic conductivity asphalt. The Contractor submitted the following information documenting that the material properties and quantities used in the asphalt concrete pavement satisfy the Specifications. These items are included in Appendix I:

- Job-mix formulas for asphalt concrete binder and surface courses
- Supplier's certifications stating that the materials and mixtures furnished for this project meet or exceed the specified requirements
- Verification test results for asphalt concrete binder and surface courses

Asphalt concrete and other bituminous materials were only placed on dry days when the temperature was at least 50 degrees F and rising.

The asphalt concrete binder course was compacted to a density of at least 95 percent of the maximum theoretical density as determined using ASTM D 2041. The binder course was placed and spread in a single lift which, after compaction, resulted in a compacted thickness of at least 2 1/2 inches. The binder course was allowed to cure for at least 24 hours before the top course was applied.

The asphalt concrete surface course was compacted to a density of at least 98 percent of the 35 blow Marshall Test density. This test was utilized as the basis of documenting in-place density since it was also referenced in the EPA document "Lining of Waste Containment and Other Impoundment Facilities" (Matrecon. 1988) to establish the relationship between asphalt density and hydraulic conductivity. Acceptance of each day's placement of material was determined provisionally by CQC personnel using a nuclear gage and the procedure described in ASTM D 2950. A minimum of five tests were conducted for every 3000 square yards of material placed and a minimum of five tests per lot. Pavement areas where the density readings fell outside the specified range were recompacted until the required density was obtained. Results of these tests are included in Appendix J.

The thickness of each asphalt concrete course was periodically measured during placement and compaction of the asphalt concrete mix. This information was documented, along with in-place density

test results, on the quality control firm's field report forms which are included in Appendix J. Thickness measurements are summarized in Tables 5-2 and 5-3.

Density determined by the nuclear gage density test method was verified by testing drilled cores. A minimum of two cores were obtained by CQC personnel for each 3000 square yards of asphalt concrete surface area for each lift. Laboratory density testing of asphalt cores confirmed that the specified density (as modified) had been achieved. Results of these tests are included in Appendix J.

The asphalt contractor regularly checked the smoothness of the asphalt concrete surface using a 10-foot straightedge while CQA and CQC personnel observed.

5.5 RECORD SURVEY

A New York State licensed land surveyor (LLS) prepared, certified and submitted an as-built survey drawing to the Engineer. The surveyed final grades for the asphalt cover and locations and elevations of constructed features are shown on the drawing. The "As-Built Survey of IWS OU 3 (Packard Road Site) Niagara Falls, New York, prepared by the LLS (dated November 19, 2007) is included as part of the Record Drawings in Appendix A. In addition to the As-Built Survey Drawing, the LLS provided surveyed elevations for graded soil surface prior to placement of aggregate base material and surveyed elevations for top of aggregate base course. This information is presented in Table 5-1 as discussed in subsection 5.3.

6.0 MODIFICATIONS TO FINAL DESIGN

Modifications were made to the original design documents based on review of design requirements and conditions encountered in the field. Most of the modifications were documented on Request for Information (RFI) forms and Work Change Directives (WCDs). The WCDs were approved by the Engineer, authorized by the Owner and accepted by the Contractor. All RFI forms and WCDs issued during the project are included in Appendix K.

6.1 MONITORING WELLS

Modification 1: Design Specification Section 02284 and the Design Drawings indicated that the tops of risers for the monitoring wells impacted by asphalt cover construction were to be cut or extended as necessary to match the adjustment in surface grades as shown on the well reconstruction details. In addition, the Design Drawings required two types of well protection covers or manholes depending on location. Because site conditions allowed, and to cause no change in the well datum (elevation of top-of-well casing), the design was modified to require no cutting or extension of the risers so that the existing top of riser elevations would not be altered. In addition, the design requirement for one flush-mounted well manhole was changed to a stand-up protective cover.

6.2 SUBGRADE FILL AND AGGREGATE BASE COURSE

Modification 2: Design Specification Section 02310 indicated that the asphalt cover subgrade under the aggregate base course would be constructed using soil fill obtained from on-site grading operations or approved off-site borrow sources. The specification required soil fill to be fine gravel, sands with fines, silt, or inorganic clay, and free of stones larger than three inches in greatest dimension. The Contractor requested approval to use aggregate base course materials instead of soil fill for the full depth of subgrade fill. This resulted in aggregate base course materials being placed from the graded on-site soil surface up to the design top elevation for aggregate base course under the asphalt concrete binder course.

Modification 3: Design Specification Section 02722, subsection 3.01.A, indicated that moisture-density testing of aggregate base course material must be performed at a minimum frequency of “one test per lift for every 1,000 tons of aggregate delivered to the Site and at every change in material”. Since the aggregate was obtained from one supplier and a material gradation certification was provided, the specification was modified to require only two moisture-density tests for the project.

Modification 4: Design Specification Section 02310, paragraph 3.04.B, indicated that subgrade soil fill must be placed in lifts of eight-inch maximum thickness and be compacted to a minimum of 98 percent of the material's maximum dry density as determined by ASTM D 698. Based on the approved change to use aggregate base course material for subgrade fill, placement and compaction of the material was modified to allow placement in 12-inch maximum lifts. Compaction of the material was required to achieve a minimum of 95 percent of the material's maximum dry density (as determined by ASTM D 1557) to be consistent with the requirements for aggregate base course in Specification Section 02722.

6.3 ASPHALT COVER SYSTEM

Modification 5: Design Specification Section 02743, subsection 3.03, indicated that bituminous tack coat was to be applied over the finished surface of the aggregate base course immediately prior to placement of asphalt concrete binder course. This requirement was deleted from the project. The Engineer reviewed NYSDOT Specifications, pavement design manuals, and documentation of work performed on the existing IWS asphalt cover. Based on standard construction practice for this type of construction and because tack coat was not applied over aggregate base on the previous project, the Engineer determined that such an application of tack coat was not required for this project. However, application of tack coat in other areas was still required in accordance with the Specifications.

Modification 6: Design Specification Section 02743, paragraph 3.04.J, stated "…the average in-place density of each asphalt concrete course placed within any lot shall be not less than 98 percent of the maximum theoretical density (determined in accordance with AASHTO T209 or ASTM D 2041). No individual density test shall be less than 95 percent of the maximum theoretical density." This specification was determined to be inconsistent with the EPA document "Lining of Waste Containment and Other Impoundment Facilities" (Matrecon. 1988) that was the basis for the asphalt cover design. The compaction test standard for asphalt concrete referenced in Table 4-38 on page 4-166 was the 35 blow Marshall method (ASTM D 1559). Therefore, the project specification was modified to state "…the average in-place density…shall be not less than 98 percent of the density obtained using the 35 blow Marshall method (ASTM D 1559)".

6.4 SITE ACCESS CONSTRUCTION

Modification 7: The Design Drawings showed an asphalt-paved pull-off lane along Veterans Drive with concrete curbing. Based on discussions and correspondence with the City of Niagara Falls Engineering

Department, the pull-off lane was changed from asphalt pavement to reinforced Portland cement concrete pavement. The concrete pavement was constructed in accordance with the City's standards for a concrete-paved commercial driveway entrance. The construction included aggregate base and reinforced concrete as shown on the Record Drawings.

6.5 FENCING SIGNAGE

Modification 8: Design Specification Section 02821 included specifications for the installation of warning signs on the fence. The Engineer deleted this from the project. The reason for eliminating the requirement for installation of the signs is to be consistent with the existing fencing around the IWS which does not have any warning signs.

6.6 RIPRAP

Modification 9: Design Specification Section 02374, subsection 2.03.A, indicated that riprap (rock outlet protection) for the storm drain outlet must comply with the requirements of Section 620-2 of the NYSDOT Specifications for "Dry Rip-Rap" (where at least 50 percent of the total weight consists of stones greater than 330 pounds or approximately 20-inch size). The riprap gradation was changed to "light" gradation stone filling (consisting of stones up to approximately 12-inch maximum size) to match the size of stone placed at other storm drain outlet headwalls along Gill Creek constructed during previous IWS remedial action and to be consistent with the stone size presented in the Pre-Construction Notification document submitted to and approved by USACE (refer to subsection 2.5).

6.7 AGGREGATE SHOULDER

Modification 10: The Design Drawings showed a 2-foot wide aggregate shoulder to be constructed around the perimeter of the asphalt cover (with the exception of the north edge) along the fence line at the toe of asphalt cover edge slope. Construction of the aggregate shoulder along the west side of the Site was eliminated because stone is already in place from previous work on the Site.

7.0 RECORD DRAWINGS

A listing of Record Drawings included in Appendix A of this Report is presented below.

List of Record Drawings
Industrial Welding Site – Operable Unit 3
(Packard Road Site)
Niagara Falls, NY

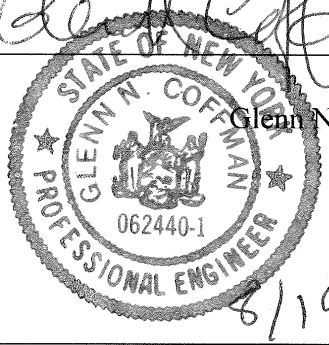
DRAWING NUMBER	PAGE NO.	DRAWING TITLE
--	--	Cover Sheet
--	--	As-Built Survey of IWS OU 3 (Packard Road Site), Niagara Falls, New York – Prepared by Tri-Point Layout, Inc. (dated November 19, 2007)
GR-001	1	Pre-Construction Topographic Survey
GR-002	2	Overall Site Plan
CL-001	3	Clearing and Demolition Plan
CL-002	4	Grading and Drainage Plan
CL-003	5	Phase 1 Erosion and Sediment Control Plan
CL-004	6	Phase 2 Erosion and Sediment Control Plan
CL-101	7	Storm Drainage Pipe Profiles
CL-102	8	Cover System Details and Sections
CL-103	9	Cover System Details and Sections
CL-104	10	Chain Link Fencing Details
CL-105	11	Erosion and Sediment Control Details (1 of 2)
CL-106	12	Erosion and Sediment Control Details (2 of 2)

8.0 CLOSURE CERTIFICATION

The Certification that the Remedial Action construction activities for the IWS – OU 3 (Packard Road Site) were accomplished as specified in the Contract Documents and as documented in this Report is presented on the following page.

CERTIFICATION OF CONSTRUCTION QUALITY ASSURANCE FOR OLIN CORPORATION'S INDUSTRIAL WELDING SITE – OPERABLE UNIT 3 (PACKARD ROAD SITE) NIAGARA FALLS, NEW YORK

I certify that the Final Remedial Design Report was implemented, and that all construction activities were completed in substantial conformance with the NYSDEC–approved Remedial Design, and were personally witnessed by me or a person under my direct supervision.



Glenn N. Coffman, P.E.

No. 062440

8/19/2008

Date

9.0 REFERENCES

LAW Engineering. 2000. "Operations and Maintenance Manual, Industrial Welding Site, Niagara Falls, New York," prepared for Olin Corporation. Law Engineering and Environmental Services, P.C. September 15, 2000.

MACTEC. 2005. "Conceptual Engineering Design- Asphalt Cover, Packard Road Site Industrial Welding Site, Olin Corporation Niagara Falls, New York," prepared for Olin Corporation. MACTEC Engineering and Consulting, P.C. June 2005.

MACTEC. 2007. "Final Remedial Design Report, Industrial Welding Site – Operable Unit 3 (Packard Road Site), Niagara Falls, New York," prepared for Olin Corporation. MACTEC Engineering and Consulting, P.C. March 9, 2007.

Matrecon, Inc. 1998. "Lining of Waste Containment and Other Impoundment Facilities," prepared for U.S. Environmental Protection Agency, Office of Research and Development. EPA/600/2-88/052. September 1988.

TABLES

TABLE 2-1

Chronology of Construction Activities
Industrial Welding Site - Operable Unit 3 (Packard Road Site)
Niagara Falls, NY

Activity	Approximate Start Date	Approximate End Date
Mobilization for Construction	5/21/07	6/1/07
Removal of Overhead Electrical Utilities	5/21/07	5/23/07
Cutting, Chipping of Above-Grade Vegetation	5/22/07	5/25/07
Installation and Maintenance of Erosion, Sediment, and Stormwater Control Measures	5/29/07	7/16/07
Clearing and Grubbing of Vegetation	5/31/07	6/18/07
Demolition and Removal of Fencing, Concrete and Debris	5/31/07	6/15/07
Abandonment and Removal of Designated Existing Utilities	6/4/07	6/15/07
Stormwater Drainage System Installation	6/4/07	6/22/07
Grading and Compaction of Existing Soils	6/6/07	6/18/07
Placement and Compaction of Aggregate Base Material	6/18/07	7/12/07
Construction of Pull-Off Lane at Veterans Drive	7/9/07	7/20/07
Restoration of Disturbed Vegetated Area at Stormwater Discharge to Gill Creek	7/10/07	7/11/07
Reconstruction of Monitoring Well Covers	7/10/07	7/13/07
Reconstruction of Veterans Drive Subgrade and Pavement at Pipe Crossing Trench	7/11/07	7/20/07
Construction of Asphalt Binder Course	7/13/07	7/20/07
Chain Link Fence Installation and Related Site Perimeter Work	7/16/07	8/7/07
Repair and Seal Coating of Existing IWS Asphalt Cover	7/19/07	8/2/07
Construction of Asphalt Surface Course	7/23/07	7/30/07
Site Restoration and Cleanup	7/23/07	8/2/07
Demobilization	7/27/07	8/10/07

Prepared By: Stephen A. Lind Date: 12/11/07
Stephen Lind

Checked By: Glenn Coffman Date: 12/11/07
Glenn Coffman

TABLE 5-1

Surveyed Elevations for Graded Soil Subgrade and Top of Aggregate Base Course[1]
Industrial Welding Site - Operable Unit 3 (Packard Road Site)
Niagara Falls, NY

Location / Grid Point Number	Graded Soil Subgrade Elevation	Top of Aggregate Base Course Elevation	Aggregate Thickness, feet
43	573.07	573.91	0.84
Drop Inlet 4	572.57	573.17	0.60
44	573.03	574.00	0.97
45	573.61	574.81	1.20
46	573.31	573.95	0.64
47	573.31	573.95	0.64
49	573.52	574.73	1.21
Drop Inlet 6	572.57	573.23	0.66
50	573.39	574.61	1.22
51	573.33	574.61	1.28
52	573.83	574.60	0.77
53	573.66	574.78	1.12
54	573.31	573.91	0.60
55	573.25	573.91	0.66
56	572.93	573.99	1.06
57	573.60	574.80	1.20
58	573.24	573.95	0.71
Drop Inlet 3	572.10	573.16	1.06
59	572.95	574.02	1.07
60	573.46	574.76	1.30
61	573.25	573.94	0.69
62	572.63	573.93	1.30
63	572.67	574.00	1.33
64	573.05	574.82	1.77
65	572.96	574.60	1.64
66	572.58	574.61	2.03
67	572.58	574.63	2.05
68	572.41	574.71	2.30
69	572.78	573.94	1.16
70	572.78	573.93	1.15
72	572.65	573.85	1.20
73	572.50	574.14	1.64
77	573.45	574.51	1.06
79	573.05	574.35	1.30
81	573.57	574.73	1.16
83	573.84	574.84	1.00
87	572.94	573.54	0.60
90	573.13	574.14	1.01
92	573.93	574.50	0.57
94	573.94	574.72	0.78
96	573.40	574.15	0.75
98	573.43	574.09	0.66
101	572.65	574.21	1.56

Prepared By: Stephen Lind
Checked By:

TABLE 5-1

Surveyed Elevations for Graded Soil Subgrade and Top of Aggregate Base Course[1]
Industrial Welding Site - Operable Unit 3 (Packard Road Site)
Niagara Falls, NY

Location / Grid Point Number	Graded Soil Subgrade Elevation	Top of Aggregate Base Course Elevation	Aggregate Thickness, feet
103	572.38	574.90	2.52
107	573.04	573.85	0.81
109	573.16	574.45	1.29
112	573.42	575.00	1.58
118	573.23	574.59	1.36
120	573.30	574.60	1.30
122	573.28	574.58	1.30
124	572.92	574.64	1.72
128	573.10	574.56	1.46
130	573.42	574.65	1.23
132	573.57	574.62	1.05
136	573.15	574.56	1.41
140	573.26	574.63	1.37
144	573.47	574.75	1.28
148	572.32	573.24	0.92

Note:
1. Elevations and grid points were obtained from an as-built survey drawing prepared by Steven A. Carlson, L.L.S. of Tri-Point Layout, Inc., dated November 19, 2007.

Prepared By: Stephen A. Lind — Stephen Lind — Date: 12/11/07

Checked By: Glenn Coffman — Date: 12/11/07

TABLE 5-2
Field Measurements of Asphalt Concrete Binder Course Thickness
Industrial Welding Site – Operable Unit 3
(Packard Road Site)
Niagara Falls, NY

Location	Measured Thickness, inches	Specified Minimum Thickness, inches
North half of cover, 1st pass	3 1/2	2 1/2
North half of cover, 3rd pass	3	2 1/2
North half of cover, 5th pass	3 1/4	2 1/2
North half of cover, 7th pass	4	2 1/2
North half of cover, 9th pass	3 3/4	2 1/2
South half of cover, 1st pass	3 1/8	2 1/2
South half of cover, 2nd pass	3	2 1/2
South half of cover, 4th pass	3 1/4	2 1/2
South half of cover, 6th pass	3 3/8	2 1/2
South half of cover, 8th pass	3	2 1/2
South half of cover, 9th pass	3	2 1/2
East edge, 1st pass	3	2 1/2
East edge, 2nd pass, north	3	2 1/2
East edge, 2nd pass, south	3 1/8	2 1/2
East edge, 3rd pass	3	2 1/2
East edge, 4th pass	3	2 1/2

Notes:

1. "Pass" refers to each parallel laydown area of the paving equipment. Width of each pass was approximately 10 to 12 feet. Thickness measurements represent readings after the asphalt concrete was compacted to the in-place densities noted on the field test report form.
2. Thickness measurements were obtained by CQC personnel and recorded on field test reports included in Appendix I.

Prepared By: Stephen A. Lind Date: 12/11/07
Stephen Lind

Checked By: Glenn Coffman Date: 12/11/07
Glenn Coffman

TABLE 5-3
Field Measurements of Asphalt Concrete Surface Course Thickness
Industrial Welding Site – Operable Unit 3
(Packard Road Site)
Niagara Falls, NY

Location	Measured Thickness, inches	Specified Minimum Thickness, inches
North half of cover, 1st pass	1 1/4	1
North half of cover, 2nd pass	1 1/4	1
North half of cover, 3rd pass	1 3/8	1
North half of cover, 4th pass	1 1/4	1
North half of cover, 5th pass	1 3/8	1
North half of cover, 6th pass	1 1/2	1
North half of cover, 7th pass	1 1/4	1
North half of cover, 8th pass	1 3/8	1
South half of cover, 1st pass	1 3/8	1
South half of cover, 2nd pass	1 1/4	1
South half of cover, 3rd pass	1 5/16	1
South half of cover, 4th pass	1 3/8	1
South half of cover, 7th pass	1 1/4	1
South half of cover, 8th pass	1 3/8	1
South half of cover, 9th pass	1 3/8	1

Notes:

1. "Pass" refers to each parallel laydown area of the paving equipment. Width of each pass was approximately 10 to 12 feet. Thickness measurements represent readings after the asphalt concrete was compacted to the in-place densities noted on the field test report form.
2. Thickness measurements were obtained by CQC personnel and recorded on field test reports included in Appendix I.

Prepared By: Stephen A. Lind Date: 12/11/07
Stephen Lind

Checked By: Glenn Coffman Date: 12/11/07
Glenn Coffman

FIGURES

Source: USGS 7.5 Minute Topographic Quadrangle Map, Niagara Falls, New York Contour Interval = 5 feet (US), Updated 2001.

OLIN CORPORATION

NIAGARA FALLS, NEW YORK

Remedial Design Report: Industrial Welding Site - Operable Unit 3 (Packard Road Site)

SITE LOCATION MAP

MACTEC ENGINEERING AND CONSULTING, INC.

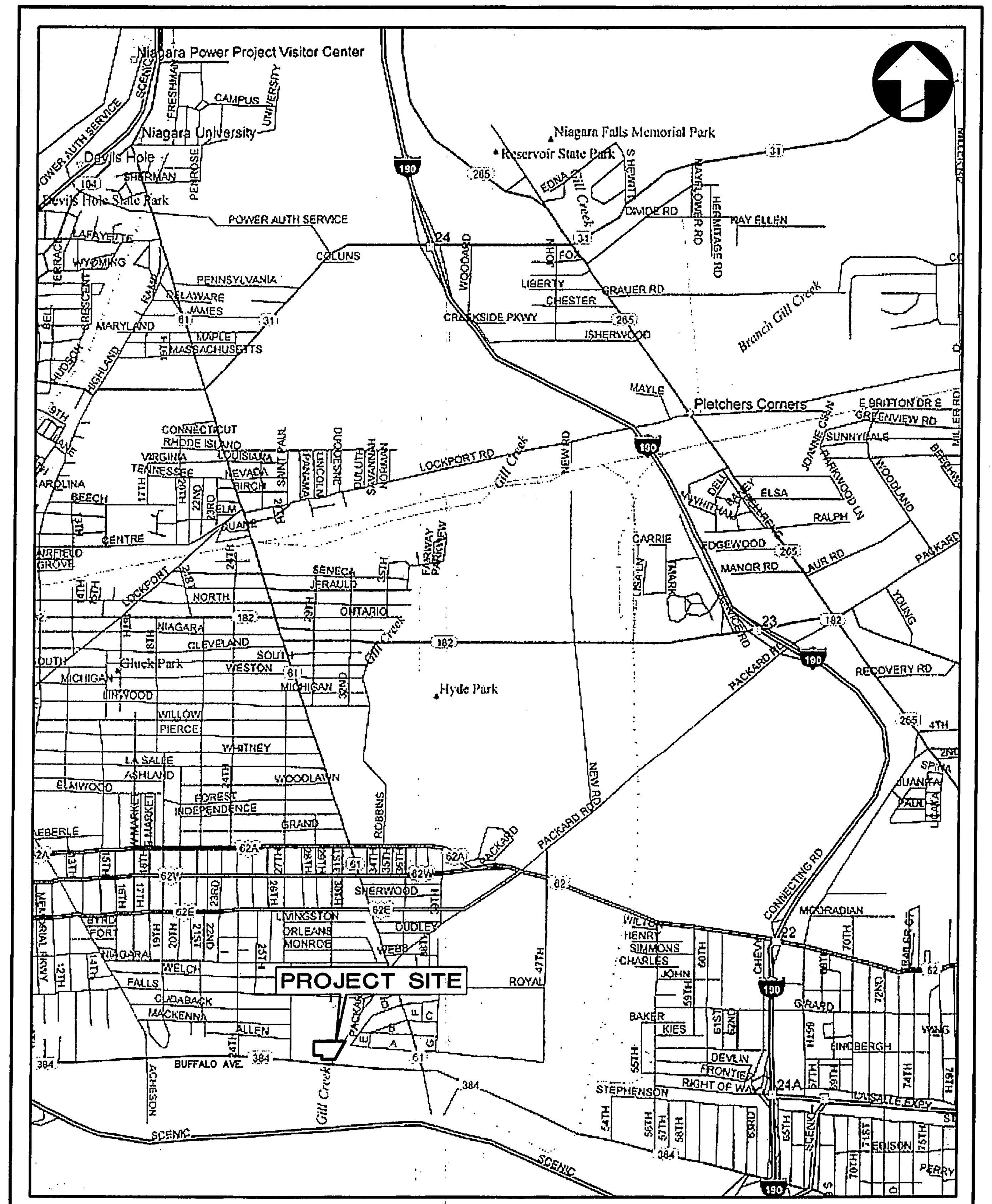
MACTEC Project Number: 6300060001

FIGURE 1.1

APPENDIX A

RECORD DRAWINGS

RECORD DRAWINGS FOR ASPHALT COVER CONSTRUCTION
INDUSTRIAL WELDING SITE-OPERABLE UNIT 3
(PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK



SOURCE: DELORME STREET ATLAS USA, VERSION 5.0 SCALE: N.T.S.

SITE LOCATION MAP

LIST OF DRAWINGS	
DRAWING NUMBER	TITLE
–	COVER SHEET
–	AS–BUILT SURVEY OF: IWS OU3 (PACKARD ROAD SITE) NIAGARA FALLS, NEW YORK–PREPARED BY TRI–POINT LAYOUT, INC.
GR–001	PRE–CONSTRUCTION TOPOGRAPHIC SURVEY
GR–002	OVERALL SITE PLAN
CL–001	CLEARING AND DEMOLITION PLAN
CL–002	GRADING AND DRAINAGE PLAN
CL–003	PHASE 1 EROSION AND SEDIMENT CONTROL PLAN
CL–004	PHASE 2 EROSION AND SEDIMENT CONTROL PLAN
CL–101	STORM DRAINAGE PIPE PROFILES
CL–102	COVER SYSTEM DETAILS AND SECTIONS
CL–103	COVER SYSTEM DETAILS AND SECTIONS
CL–104	CHAIN LINK FENCING DETAILS
CL–105	EROSION AND SEDIMENT CONTROL DETAILS (1 OF 2)
CL–106	EROSION AND SEDIMENT CONTROL DETAILS (2 OF 2)

PREPARED FOR:

OLIN CORPORATION
ENVIRONMENTAL REMEDIATION GROUP
CHARLESTON, TENNESSEE

PREPARED BY:

MACTEC Engineering and Consulting, P.C.

IN ASSOCIATION WITH:

MACTEC
MACTEC Engineering and Consulting, Inc.
3200 TOWN POINT DRIVE
KENNESAW, GEORGIA 30144 (770) 421–3400

DECEMBER 5, 2007

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

STATE OF NEW YORK GLENN N. COFFMAN 062440 PROFESSIONAL ENGINEER

J:\Olin\Packard Road\DWG\As-Built\gn-cover.dwg 12/06/2007 8:38am cbudsock

Reputed Owner
OLIN CORPORATION
L-2939 , P-65

4.2' x 4.2' concrete pad
with pump house.
TBM~573.90
Benchmark elevation was established from existing Benchmark K-5which no longer remains.

New Asphalt Limits

Existing 24" RCP
Storm Drain

EXISTING STORM DRAIN
SAMPLING RISER
Top of Casing ~ 574.03

Edge of pavement

Existing plastic coated chain link gate.

Existing Catch Basin Grate El.569.75

Reputed Owner
E.I. DUPONT DE NEMOURS

New Asphalt Limits

Existing galvanized chain link fence.

DI~4
mh-573.48
rim-573.48
inv.-E.568.84

200 lf of 24"RCP

DI~3
mh-573.44
rim-573.44
inv.-E.567.26
W.567.37

Reputed Owner
OLIN CHEMICALS and CHLOR ALKALI , INC.
L-2885 , P-233

155 lf of 24"RCP

DI~7
mh-573.41
rim-573.41
inv.-N.569.51
inv.-S.569.09

MONITORING WELL
Top of Casing ~574.18

MH~2
mh-574.09
rim-574.14
inv.-N.566.51
S.566.04
E.565.94
W.566.04

80 lf of 18"RCP

178 lf of 24"RCP

MONITORING WELL
Top of Casing ~ 575.60

New plastic coated chain link gate.

STORM DRAIN
SAMPLING RISER
Top of Casing ~ 577.01

163 lf of 24"RCP

DI~5
mh-573.51
rim-573.51
inv.-W.568.22
E.567.66

New Asphalt Limits

Pavement patch
6.0' x 30'

Road Right-of-Way bounds

New plastic coated chain link fence.

VETERANS DRIVE
(Packard Road)

Approximate west bank

OUTFALL
inv.564.08

GILL CREEK

DI~6
mh-573.52
rim-573.52
inv.-E.569.67

195 lf of 18"RCP

Overhead Electric

MONITORING WELL
Top of Casing ~ 576.95

Reputed Owner
OLIN CHEMICALS and CHLOR ALKALI , INC.
L-2885 , P-233

New Asphalt Limits

New galvanized chain link fence.

Reputed Owner
NEW YORK STATE DEPARTMENT OF TRANSPORTATION

0 30' 60'

As~Built Survey of:
IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS , NEW YORK

Prepared for-
MACTEC Engineering and Consulting,P.C.
3200 Town Point Drive Suite 100
Kennesaw , Georgia 30144

Prepared by~
TRI~POINT LAYOUT , Inc.
P.O. Box 9008
Schenectedy , N.Y.12309

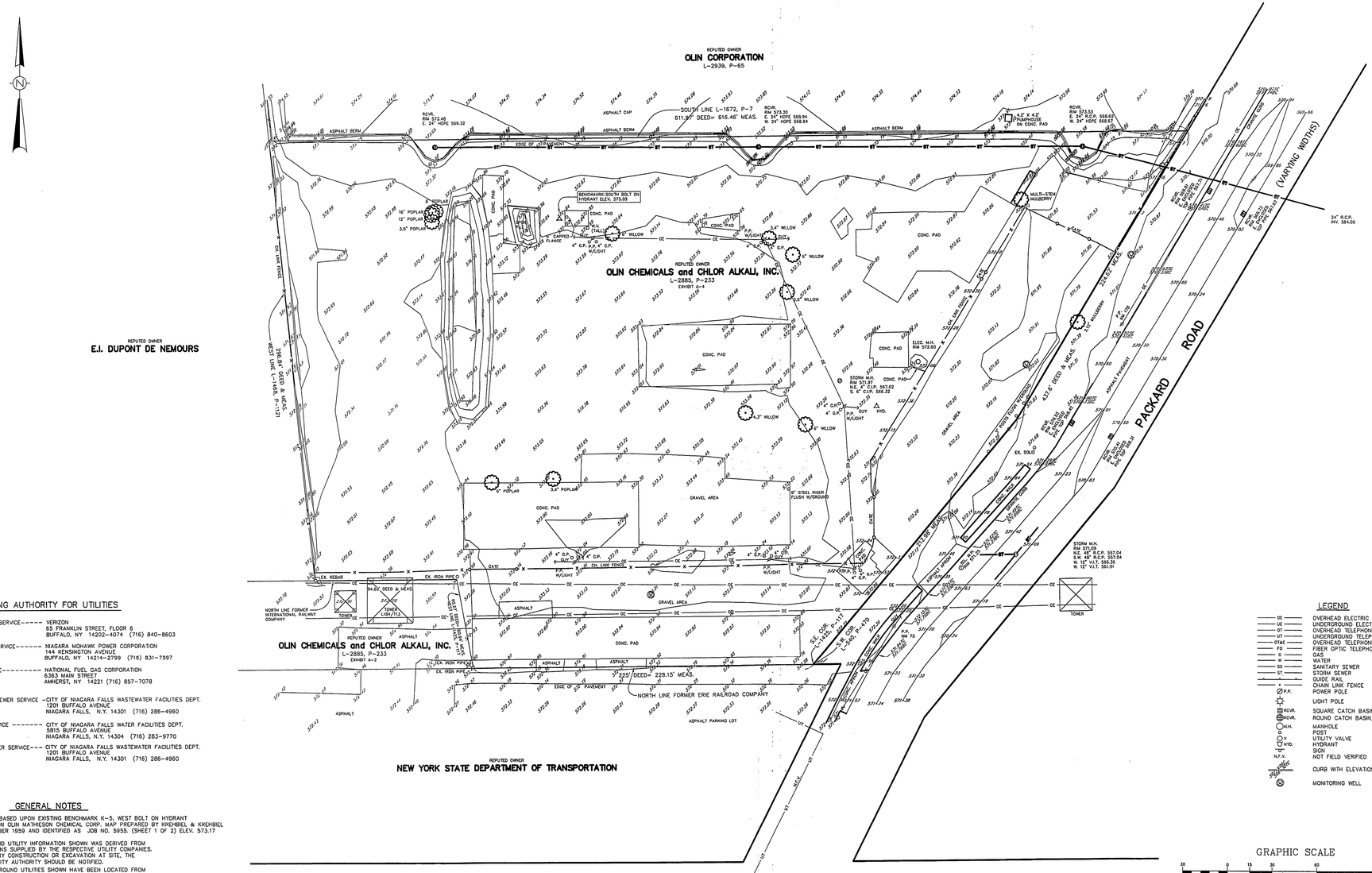
Reference Survey~
Topographic survey prepared by McIntosh & McIntosh,P.C. dated June 14,2005.

Information shown on this as-built drawing that is located outside of project boundary is taken directly from the McIntosh & McIntosh , P.C. survey.

STEVEN A.CARLSON , L.L.S.
Licensed Land Surveyor
P.O.Box 9320
Ashville , N.Y. 14710-9320
Ph.(716)763-2247 , Fax.(716)763-2294
e-mail : sacls@netsync.net

FILE NAME	OLIN IWS PACKARD RD.TRV	
SCALE	DATE	DRAWN BY
1" = 30'	Nov.19,2007	SAC
JOB	REVISION	SHEET
22-05-07		1/1

Traverse PC.



OPERATING AUTHORITY FOR UTILITIES

(1) TELEPHONE SERVICE----- VERIZON
65 FRANKLIN STREET, FLOOR 6
BUFFALO, NY 14202-4074 (716) 840-8603

(2) ELECTRIC SERVICE------ NIAGARA MOHAWK POWER CORPORATION
144 KENSINGTON AVENUE
BUFFALO, NY 14214-2799 (716) 831-7597

(3) GAS SERVICE--------- NATIONAL FUEL GAS CORPORATION
6363 MAIN STREET
AMHERST, NY 14221 (716) 857-7078

(4) SANITARY SEWER SERVICE -CITY OF NIAGARA FALLS WASTEWATER FACILITIES DEPT.
1201 BUFFALO AVENUE
NIAGARA FALLS, N.Y. 14301 (716) 286-4960

(5) WATER SERVICE ------- CITY OF NIAGARA FALLS WATER FACILITIES DEPT.
5815 BUFFALO AVENUE
NIAGARA FALLS, N.Y. 14304 (716) 283-9770

(6) STORM SEWER SERVICE--- CITY OF NIAGARA FALLS WASTEWATER FACILITIES DEPT.
1201 BUFFALO AVENUE
NIAGARA FALLS, N.Y. 14301 (716) 286-4960

GENERAL NOTES

(1) ELEVATIONS BASED UPON EXISTING BENCHMARK K-5, WEST BOLT ON HYDRANT AS SHOWN ON OLIN MATHESON CHEMICAL CORP. MAP PREPARED BY KRECHBIEL & KREHBIEL DATED OCTOBER 1959 AND IDENTIFIED AS JOB NO. 5955. (SHEET 1 OF 2) ELEV. 573.17

(2) UNDERGROUND UTILITY INFORMATION SHOWN WAS DERIVED FROM RECORD PLANS SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES. PRIOR TO ANY CONSTRUCTION OR EXCAVATION AT SITE, THE PROPER UTILITY AUTHORITY SHOULD BE NOTIFIED.
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

(3) SEE CITY OF NIAGARA FALLS TAX MAP NO. 159.12-1-7.

(4) PROPERTY LINES SHOWN ARE BASED UPON LIMITED DEED AND FIELD MEASUREMENTS AND ARE SUBJECT TO VARIATION BASED UPON FURTHER TITLE DOCUMENTATION AND ADDITIONAL FIELD MEASUREMENTS AS DICTATED BY A STANDARD BOUNDARY SURVEY.

LEGEND

- OE — OVERHEAD ELECTRIC
- UE — UNDERGROUND ELECTRIC
- OT — OVERHEAD TELEPHONE
- UT — UNDERGROUND TELEPHONE
- OT&E — OVERHEAD TELEPHONE & ELECTRIC
- FO — FIBER OPTIC TELEPHONE CABLE
- G — GAS
- W — WATER
- SS — SANITARY SEWER
- ST — STORM SEWER
- GUIDE RAIL
- CHAIN LINK FENCE
- P.P. — POWER POLE
- LIGHT POLE
- RCVR. — SQUARE CATCH BASIN/RECEIVER
- RCVR. — ROUND CATCH BASIN/RECEIVER
- M.H. — MANHOLE
- POST
- V — UTILITY VALVE
- HYD. — HYDRANT
- SIGN
- N.F.V. — NOT FIELD VERIFIED
- CURB WITH ELEVATIONS
- MONITORING WELL

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 Inch = 30 ft.

NOTES:
1. TOPOGRAPHIC SURVEY BY MCINTOSH & MCINTOSH, P.C.
2. NIAGARA MOHAWK IS NOW REFERRED TO AS NATIONAL GRID.
3. NIAGARA FALLS WATER AND WASTEWATER FACILITIES IS NOW REFERRED TO AS NIAGARA FALLS WATER BOARD.

McINTOSH & McINTOSH, P.C.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS
LOCKPORT, NEW YORK PHONE 434-9138 — BUFFALO, NEW YORK PHONE 625-8360

REVISION	

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS MAP IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

TOPOGRAPHICAL MAP OF PART OF LOT-4 OF THE STEDMAN FARM

LOCATION CITY OF NIAGARA FALLS, NIAGARA COUNTY, NEW YORK

JOB No. 5377 | SCALE: 1"= 30' | DATE: JUNE 14, 2005 | DRAWN: JDM III | CHKD: | CAD FILE: 5377R.DWG | CHECKED:

REV	DATE	BY	SUB	APP	DESCRIPTION
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED N/A
DRAWN N/A
CHECKED N/A
IN CHARGE N/A
DATE 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

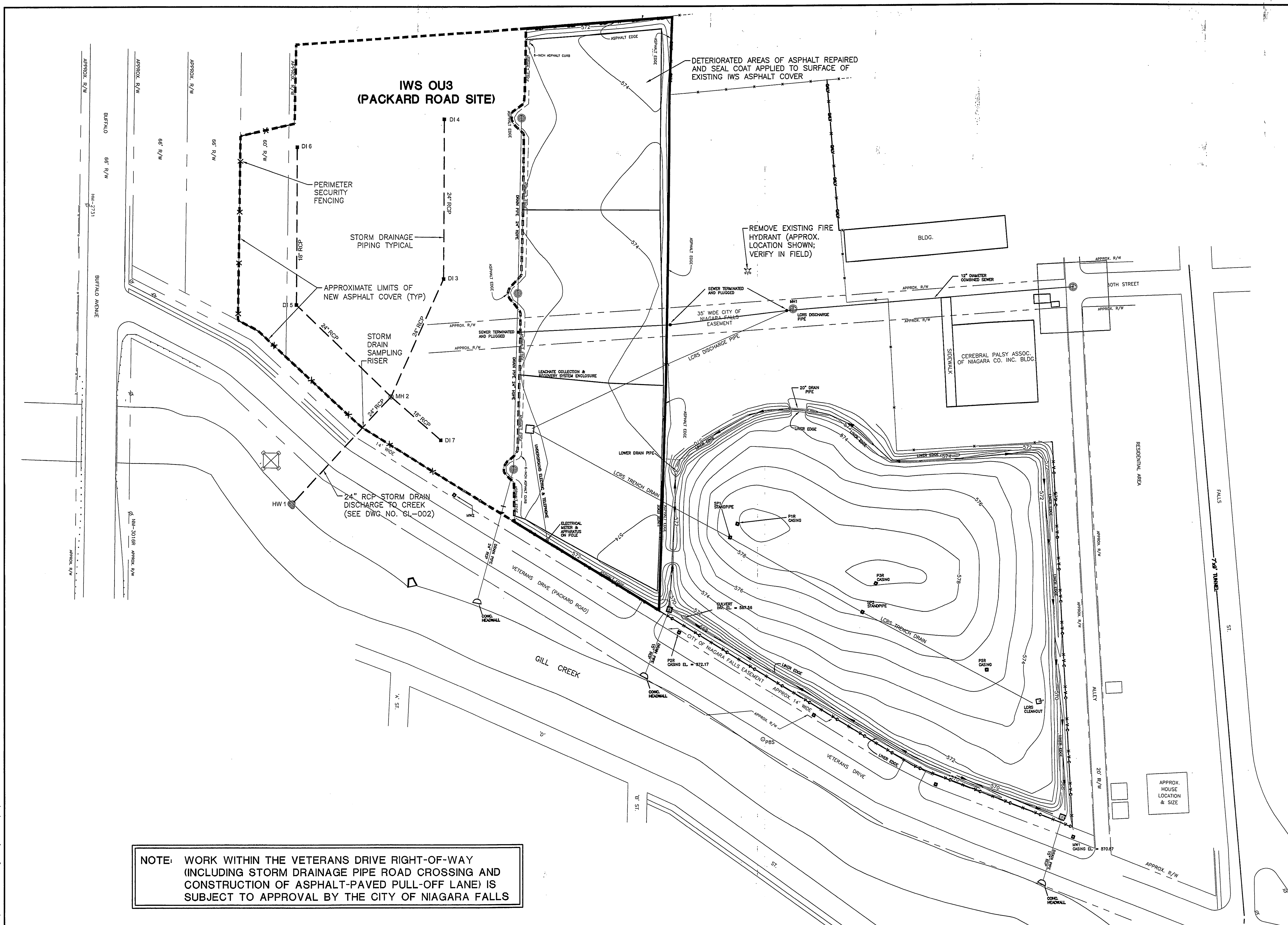
MACTEC
MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

PRE-CONSTRUCTION TOPOGRAPHIC SURVEY

SCALE: NONE
CONTRACT: 6100-07-0005
DWG. NO.: GR-001 | REV: 1 | PAGE NO: 1

J:\Olin\Packard Road\DWG\As-Built\Pre-Topographic Survey.dwg - Layout1 12/06/2007 8:37am dsudseck



LEGEND

—x—V-C—x—V-C	= VINYL-COATED CHAINLINK FENCE INSTALLED OCT. 1999
GALV—x—GALV—x—	= GALVANIZED CHAINLINK FENCE INSTALLED OCT. 1999
—x—x—	= OTHER EXISTING CHAINLINK FENCE
— ► —	= DITCH WITH FLOW DIRECTION
P3R OR MW1	PIEZOMETER IDENTIFICATION OR MONITORING WELL IDENTIFICATION
STANDPIPE	= STANDPIPE FOR LEACHATE COLLECTION & RECOVERY SYSTEM
R/W	RIGHT-OF-WAY
■ ■ ■ ■	LIMIT OF NEW ASPHALT COVER
▬▬▬	LIMIT OF SEAL COATING

NOTES:

1. SOURCE OF SITE PLAN BASE MAP: RECORD DRAWINGS OF IWS WORK, SEPT. 2000.
2. EXISTING WATER AND SEWER UTILITIES WERE ABANDONED WITHIN THE LIMITS OF THE ASSUMED CITY OF NIAGARA FALLS EASEMENT AND AT OTHER LOCATIONS ON THE PACKARD ROAD SITE. REFER TO DRAWING CL-001.
3. REFER TO OTHER DRAWINGS FOR EXISTING TOPOGRAPHIC INFORMATION AND CONSTRUCTION WORK WITHIN THE LIMITS OF THE PACKARD ROAD SITE.
4. CONSTRUCTION WORK INCLUDED REPAIR OF DETERIORATED ASPHALT AND APPLICATION OF A SEAL COAT TO SURFACE OF EXISTING IWS ASPHALT COVER IN ACCORDANCE WITH THE SPECIFICATIONS.

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: WORK WITHIN THE VETERANS DRIVE RIGHT-OF-WAY (INCLUDING STORM DRAINAGE PIPE ROAD CROSSING AND CONSTRUCTION OF ASPHALT-PAVED PULL-OFF LANE) IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

SCALE IN FEET 0 60 120

REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING						
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER						

DESIGNED N/A
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

STATE OF NEW YORK · GLENN N. COFFMAN · PROFESSIONAL ENGINEER

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

OVERALL SITE PLAN

SCALE NONE
CONTRACT 6100-07-0005
DWG. NO. GR-002 | REV 2 | PAGE NO 2

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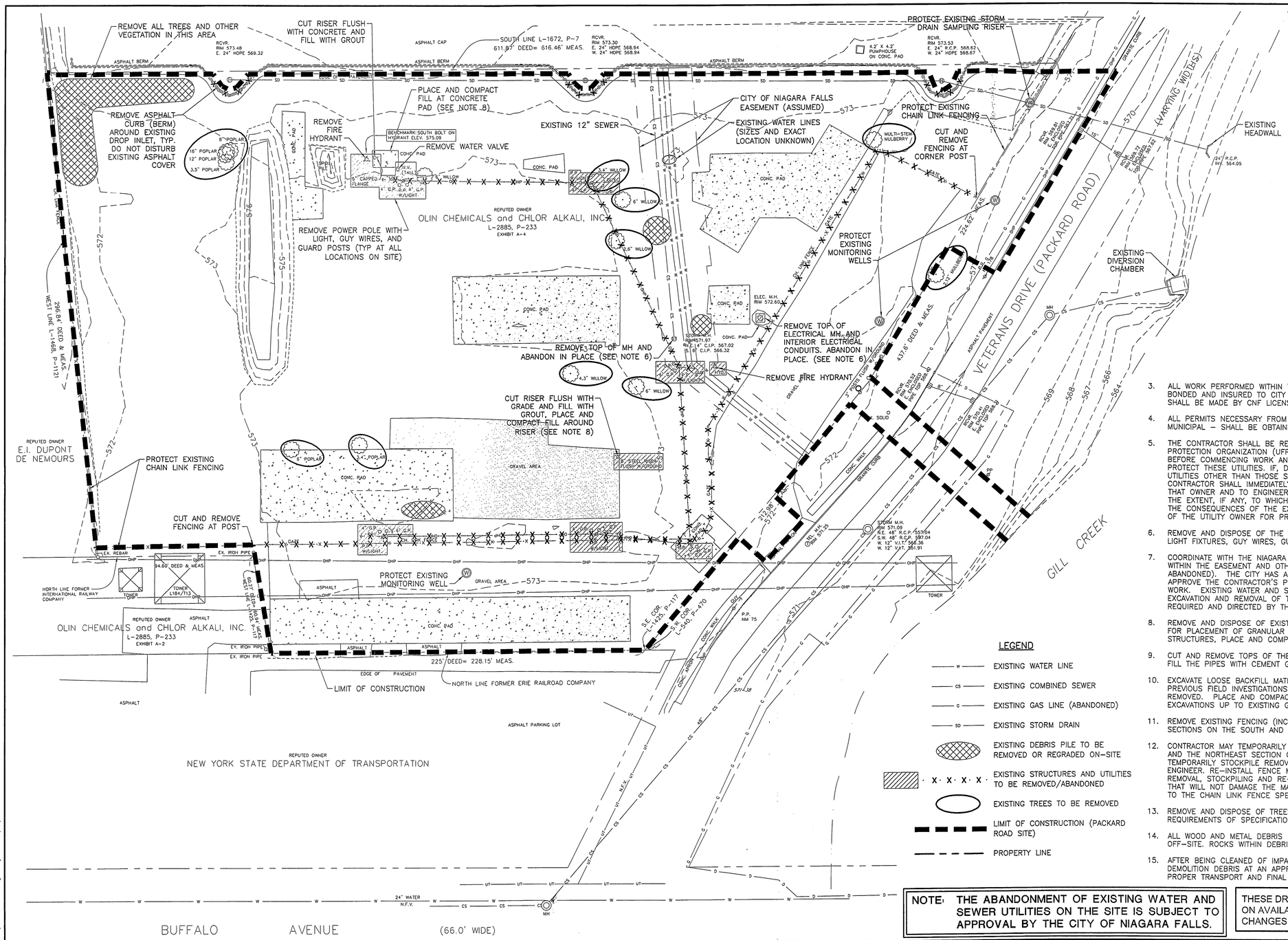

GENERAL NOTES

1. SOURCE OF BASE MAP: "TOPOGRAPHICAL MAP OF PART OF LOT-4 OF THE STEDMAN FARM", PREPARED BY MCINTOSH & MCINTOSH, P.C., DRAWING DATED JUNE 14, 2005 (INCLUDED ON DWG. NO. GR-001).

2. ADDITIONAL UTILITY INFORMATION NOT SHOWN ON THE ABOVE-REFERENCED TOPOGRAPHIC MAP WAS OBTAINED BY MACTEC FROM PREVIOUS PROJECT DRAWINGS, DOCUMENTATION PROVIDED BY THE CITY OF NIAGARA FALLS, AND INFORMATION FROM OTHER UTILITY OWNERS AS DESCRIBED BELOW. THE INFORMATION MAY NOT BE ACCURATE OR COMPLETE.

   - LOCATION OF GAS LINE ALONG BUFFALO AVENUE AND PACKARD ROAD WAS BASED ON INFORMATION SHOWN ON A MARKED-UP DRAWING RECEIVED FROM NATIONAL FUEL IN APRIL 1998. PER RECENT PHONE CONTACT WITH NATIONAL FUEL, THE GAS LINE IS ABANDONED.
   - LOCATIONS OF THE ASSUMED CITY OF NIAGARA FALLS EASEMENT ACROSS THE PROPERTY AND ASSUMED EXISTING SEWER LINE AND WATER LINES WITHIN THE EASEMENT WERE BASED ON INFORMATION SHOWN ON A DRAWING TITLED "MAP SHOWING EASEMENT THROUGH PROPERTIES OF OLIN-MATHIESON CHEMICAL CORP., JOHN L. THALER AND INDUSTRIAL WELDING CORP. - WEST OF PACKARD ROAD AND SOUTH OF FALLS STREET AT 30TH STREET", PREPARED BY THE CITY OF NIAGARA FALLS BUREAU OF ENGINEERING, DATED 12/22/65. THE UTILITIES MAY HAVE ALREADY BEEN ABANDONED.
   - LOCATIONS OF THE COMBINED SEWER ALONG PACKARD ROAD AND STORM CROSS DRAINS ON PACKARD ROAD, WERE BASED ON INFORMATION SHOWN ON THE CITY OF NIAGARA FALLS "COMBINED SEWER SYSTEM" MAP AND OTHER DOCUMENTATION OBTAINED DURING PREVIOUS SITE WORK.
   - LOCATION OF EXISTING POWER POLE BETWEEN PACKARD ROAD AND GILL CREEK IS APPROXIMATE AND IS BASED ON PREVIOUS IWS PROJECT DRAWINGS.

3. ALL WORK PERFORMED WITHIN THE CITY'S RIGHT-OF-WAY SHALL BE PERFORMED BY CONTRACTORS BONDED AND INSURED TO CITY STANDARDS. ALL CONNECTIONS TO MUNICIPAL WATER MAINS AND SEWERS SHALL BE MADE BY CNF LICENSED PLUMBERS ONLY.

4. ALL PERMITS NECESSARY FROM ALL PERTINENT AGENCIES AND BOARDS - FEDERAL, STATE, COUNTY, MUNICIPAL - SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE NEW YORK UNDERGROUND FACILITY PROTECTION ORGANIZATION (UFPO) TO DETERMINE THE LOCATION OF ALL UTILITIES IN THE PROJECT AREA BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY CONTRACTOR'S FAILURE TO PROTECT THESE UTILITIES. IF, DURING CONSTRUCTION OPERATIONS, CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE DESIGN DRAWINGS OR MARKED BY THE UTILITY OWNER, CONTRACTOR SHALL IMMEDIATELY IDENTIFY THE OWNER OF SUCH UTILITY AND GIVE WRITTEN NOTICE TO THAT OWNER AND TO ENGINEER. ENGINEER WILL PROMPTLY REVIEW THE INFORMATION AND DETERMINE THE EXTENT, IF ANY, TO WHICH A CHANGE IS REQUIRED IN THE DESIGN TO REFLECT AND DOCUMENT THE CONSEQUENCES OF THE EXISTENCE OR LOCATION OF THE UTILITY. CONFORM TO THE REQUIREMENTS OF THE UTILITY OWNER FOR PROTECTION OR REMOVAL OF THE UTILITY.

6. REMOVE AND DISPOSE OF THE INDICATED EXISTING OVERHEAD ELECTRIC LINES, POWER/LIGHT POLES, LIGHT FIXTURES, GUY WIRES, GUY ANCHORS, AND ASSOCIATED GUARD POSTS ON THE SITE.

7. COORDINATE WITH THE NIAGARA FALLS WATER BOARD TO ABANDON EXISTING SEWER AND WATER LINES WITHIN THE EASEMENT AND OTHER AREAS ON THE SITE (IF THE UTILITIES HAVE NOT PREVIOUSLY BEEN ABANDONED). THE CITY HAS APPROVED ENGINEER'S REQUEST FOR UTILITY ABANDONMENT AND MUST APPROVE THE CONTRACTOR'S PROPOSED METHODS FOR ABANDONMENT PRIOR TO COMMENCEMENT OF THE WORK. EXISTING WATER AND SEWER UTILITIES MAY BE ACTIVE. THE ABANDONMENT WILL NOT REQUIRE EXCAVATION AND REMOVAL OF THE PIPELINES, BUT WILL REQUIRE SPECIFIC ABANDONMENT METHODS REQUIRED AND DIRECTED BY THE CITY.

8. REMOVE AND DISPOSE OF EXISTING MANHOLE COVERS AND TOPS OF MANHOLE STRUCTURES AS REQUIRED FOR PLACEMENT OF GRANULAR FILL. AFTER REMOVAL OF WATER FROM THE INTERIOR OF THE STRUCTURES, PLACE AND COMPACT GRANULAR FILL UP TO EXISTING GRADE AS SPECIFIED.

9. CUT AND REMOVE TOPS OF THE TWO EXISTING STEEL RISER PIPES WHERE INDICATED ON THE SITE, AND FILL THE PIPES WITH CEMENT GROUT AS SPECIFIED, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

10. EXCAVATE LOOSE BACKFILL MATERIAL AROUND THE TWO STEEL RISER PIPE LOCATIONS RESULTING FROM PREVIOUS FIELD INVESTIGATIONS. BURIED AND EXPOSED CONCRETE STRUCTURES SHALL NOT BE REMOVED. PLACE AND COMPACT GRANULAR FILL OR OTHER APPROVED BACKFILL MATERIAL IN EXCAVATIONS UP TO EXISTING GRADE IN ACCORDANCE WITH THE SPECIFICATIONS.

11. REMOVE EXISTING FENCING (INCLUDING FENCE POSTS, FABRIC, ACCESSORIES AND GATES) FROM INDICATED SECTIONS ON THE SOUTH AND EAST SIDES OF THE SITE.

12. CONTRACTOR MAY TEMPORARILY REMOVE EXISTING FENCE FABRIC FROM POSTS AS NEEDED ON WEST SIDE AND THE NORTHEAST SECTION OF THE SITE TO PROVIDE ACCESS FOR CONSTRUCTION OF ASPHALT COVER. TEMPORARILY STOCKPILE REMOVED FENCE FABRIC AND ACCESSORIES WHERE APPROVED BY THE ENGINEER. RE-INSTALL FENCE MATERIALS AFTER COMPLETION OF ASPHALT COVER CONSTRUCTION. REMOVAL, STOCKPILING AND RE-INSTALLATION OF FENCE FABRIC SHALL BE PERFORMED USING METHODS THAT WILL NOT DAMAGE THE MATERIALS. REPLACE DAMAGED MATERIALS WITH NEW MATERIALS CONFORMING TO THE CHAIN LINK FENCE SPECIFICATION SECTION 02821.

13. REMOVE AND DISPOSE OF TREES AND OTHER VEGETATIVE DEBRIS IN CONFORMANCE WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02230.

14. ALL WOOD AND METAL DEBRIS LOCATED ON-SITE IN "DEBRIS PILES" SHALL BE REMOVED AND DISPOSED OFF-SITE. ROCKS WITHIN DEBRIS PILES SHALL BE RE-LOCATED AS REQUIRED AND PLACED ON-SITE.

15. AFTER BEING CLEANED OF IMPACTED SOILS, TRANSPORT AND DISPOSE OF REMOVED STRUCTURES AND DEMOLITION DEBRIS AT AN APPROPRIATE OFF-SITE DISPOSAL FACILITY. SUBMIT WRITTEN CERTIFICATION OF PROPER TRANSPORT AND FINAL DISPOSAL OF THE MATERIALS.

NOTE: THE ABANDONMENT OF EXISTING WATER AND SEWER UTILITIES ON THE SITE IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS.

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

SCALE IN FEET
0 30 60

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

CLEARING AND DEMOLITION PLAN

SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-001 | REV: 2 | PAGE NO: 3

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PROTECT EXISTING STORM DRAIN SAMPLING RISER

CITY OF NIAGARA FALLS EASEMENT (ASSUMED)

NEW FENCE CONNECTED TO EXISTING FENCE

12' WIDE DOUBLE SWING GATE

CONCRETE-PAVED PULL-OFF LANE PER CITY STANDARDS

VETERANS DRIVE (PACKARD RD.)

MONITORING WELL
Top of Casing = 575.60

STORM DRAIN SAMPLING RISER
Top of Casing = 577.01

REPUTED OWNER
OLIN CHEMICALS and CHLOR ALKALI, INC.
L-2885, P-233

REPUTED OWNER
E.I. DUPONT DE NEMOURS

REPUTED OWNER
NEW YORK STATE DEPARTMENT OF TRANSPORTATION

CONNECT NEW FENCE TO EXISTING FENCE

NEW GALVANIZED CHAIN LINK FENCE. DESIGNATION CODE CL-6PO (SEE DWG CL-104)

INSTALL NEW VINYL-COATED CHAIN LINK FENCE AT EAST EDGE OF SITE ALONG PACKARD ROAD. DESIGNATION CODE VCL-6PO (SEE DWG CL-105)

EXISTING GRANITE CURB

NORTH LINE FORMER ERIE RAILROAD COMPANY

NORTH LINE FORMER INTERNATIONAL RAILWAY COMPANY

ASPHALT PARKING LOT

GILL CREEK

BUFFALO AVENUE (66.0' WIDE)

OUTFALL
INV.564.08

NOTE:

FINISHED GRADES AND SPOT ELEVATIONS WERE OBTAINED FROM "AS-BUILT SURVEY OF: IWS OU3 (PACKARD ROAD SITE) NIAGARA FALLS, NEW YORK", PREPARED BY STEVEN A. CARLSON, L.L.S., TRI-POINT LAYOUT, INC., DATED NOVEMBER 19, 2007.

LEGEND (NEW CONSTRUCTION)

- 575 — FINISH GRADE
- 66 + 574.82 — SURVEY POINT NUMBER / SPOT ELEVATION (FINISH GRADE)
- ASPHALT PAVEMENT (OUTSIDE LIMITS OF COVER SYSTEM)
- STORM DRAIN PIPE
- MANHOLE/DROP INLET
- MONITORING WELL
- LIMIT OF CONSTRUCTION
- xx — NEW GALVANIZED CHAIN LINK FENCE
- x — NEW VINYL-COATED CHAIN LINK FENCE

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: WORK WITHIN THE VETERANS DRIVE RIGHT-OF-WAY (INCLUDING STORM DRAINAGE PIPE ROAD CROSSING AND CONSTRUCTION OF ASPHALT-PAVED PULL-OFF LANE) IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

SCALE IN FEET
0 30 60

REV	DATE	BY	SUB	APP	DESCRIPTION
2	12/04/07				AS-BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN P. NICHOLSON
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

STATE OF NEW YORK — CLIENT N. COFFMAN — 18 — LICENSED ENGINEER PROFESSIONAL

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC
MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

GRADING AND DRAINAGE PLAN

SCALE AS SHOWN
CONTRACT 6100-07-0005
DWG. NO. CL-002 | REV 2 | PAGE NO 4

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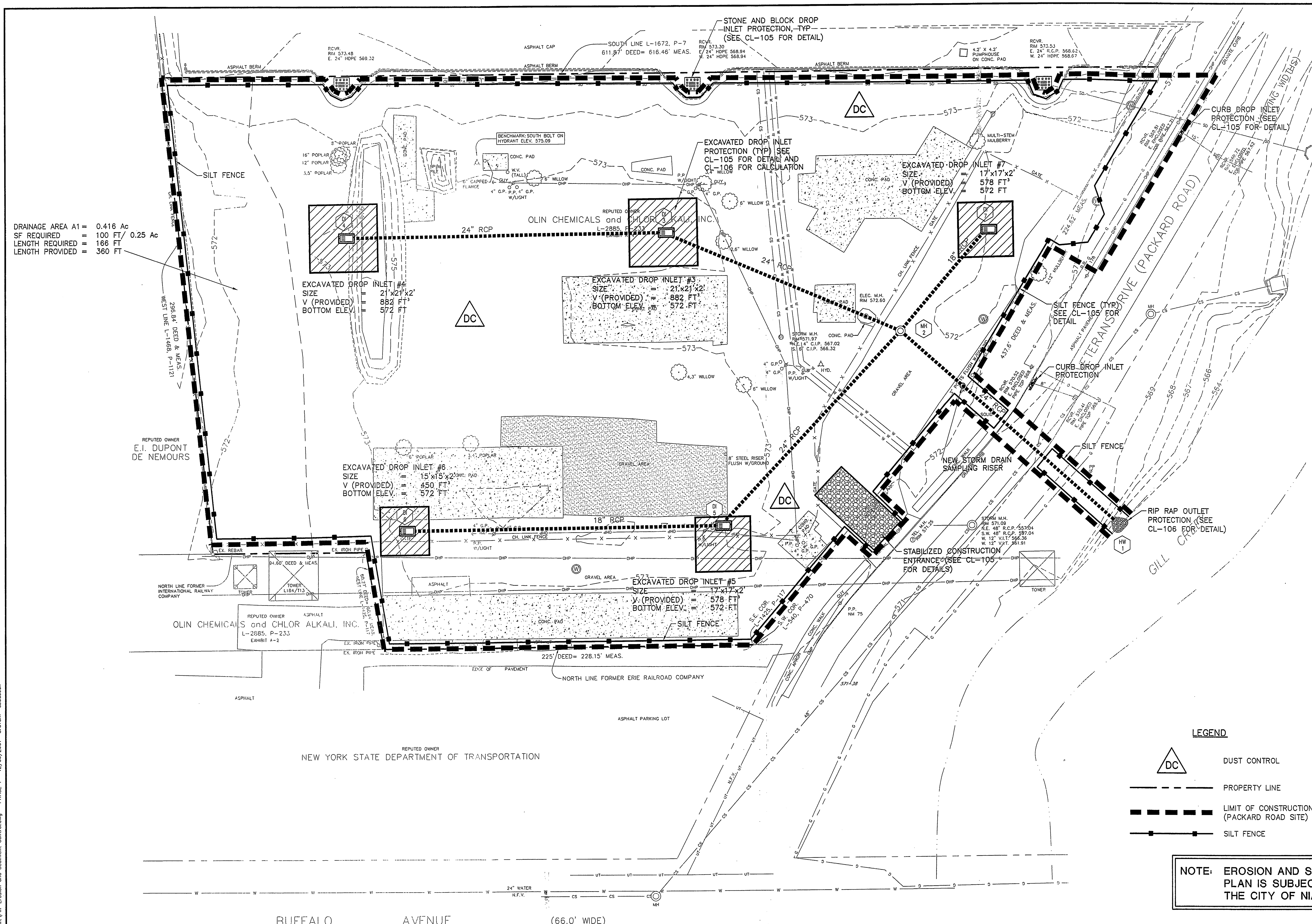

EROSION AND SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), AUGUST 2005.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.
3. STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, DROP INLET PROTECTION AT EXISTING STORM DRAIN INLETS, AND OTHER REQUIRED MEASURES SHALL BE CONSTRUCTED AND SHALL BE MADE FUNCTIONAL PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITIES. CONSTRUCT WHERE INDICATED AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS.
4. CONSTRUCT EXCAVATED DROP INLET PROTECTION AT NEW STORMWATER DROP INLET LOCATIONS DURING THE PROGRESS OF THE WORK AS INDICATED.
5. ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION IS ACHIEVED.
6. PERIODIC INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PERFORMED AS REQUIRED DURING THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF DRAIN INLETS AND PIPES THAT BECOME CLOGGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
7. MATERIAL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. APPLY DUST CONTROL MEASURES, TEMPORARY SEEDING AND MULCHING AS REQUIRED DURING THE PROGRESS OF THE WORK.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL MEASURES BEYOND THE APPROVED PLAN SHALL BE IMPLEMENTED AS NECESSARY.
9. INSTALL RIPRAP OUTLET PROTECTION, EROSION CONTROL MATTING, PERMANENT SEEDING, AND MULCHING AS INDICATED ON THE DRAWINGS AND IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.
10. MAINTAIN SEDIMENT CONTROL MEASURES UNTIL THE WORK IS COMPLETED AND ALL DISTURBED AREAS ARE STABILIZED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL TEMPORARY SEDIMENT CONTROL MEASURES AND RESTORE THOSE AREAS TO THE ORIGINAL OR DESIGNED CONDITIONS.

LEGEND

- DC — DUST CONTROL
- PROPERTY LINE
- LIMIT OF CONSTRUCTION (PACKARD ROAD SITE)
- SILT FENCE

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: EROSION AND SEDIMENT CONTROL PLAN IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

SCALE IN FEET
0 30 60

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED: M. ILIC
DRAWN: P. NICHOLSON
CHECKED: G. COFFMAN
IN CHARGE: R. MAROTTE
DATE: 09 MARCH 07

STATE OF NEW YORK — GLENN N. COFFMAN — LICENSED PROFESSIONAL ENGINEER

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC
MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

PHASE 1 EROSION AND SEDIMENT CONTROL PLAN

SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-003 | REV: 2 | PAGE NO: 5

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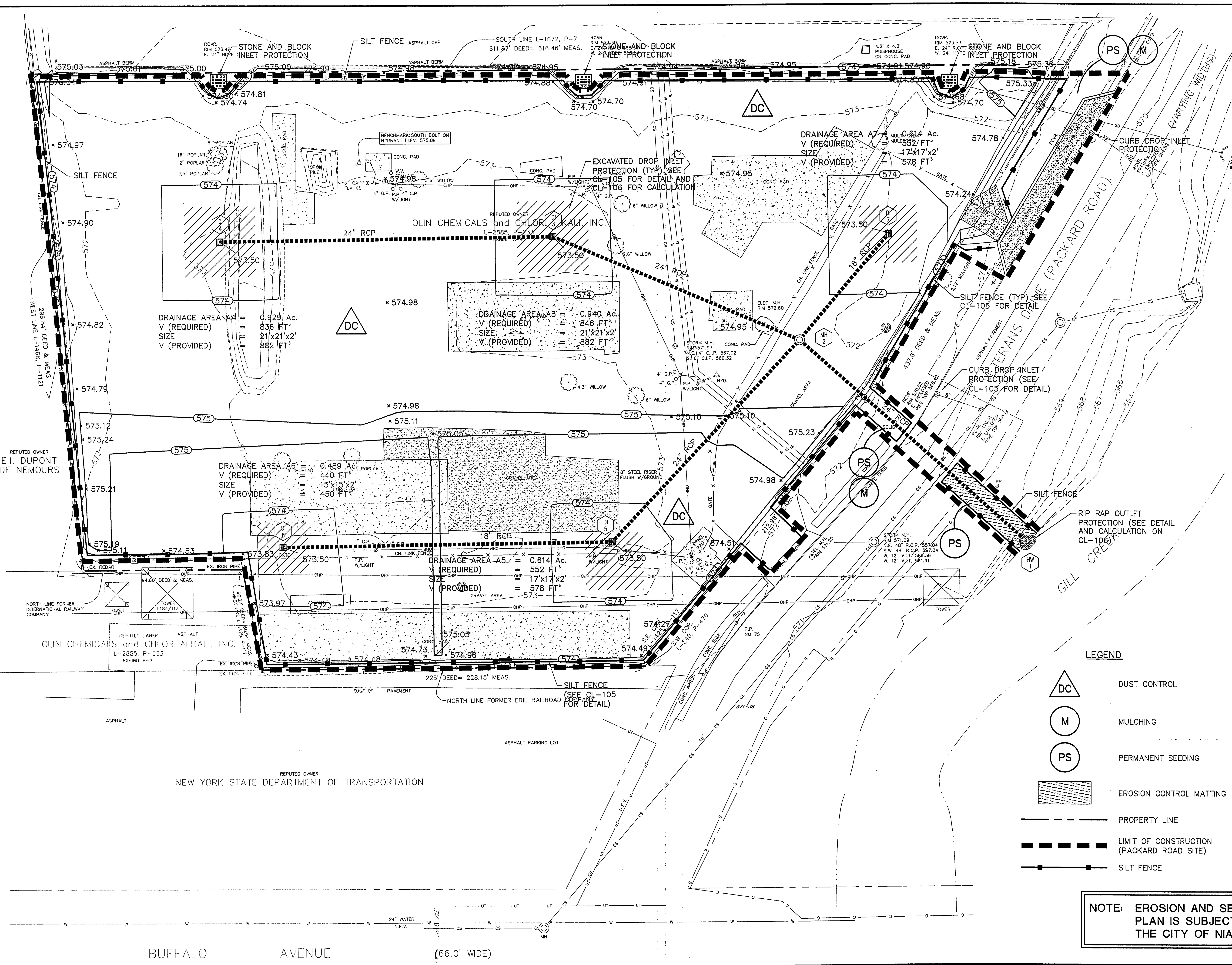

EROSION AND SEDIMENT CONTROL NOTES

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2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR CONCURRENT WITH LAND DISTURBING ACTIVITIES.
3. STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, DROP INLET PROTECTION AT EXISTING STORM DRAIN INLETS, AND OTHER REQUIRED MEASURES SHALL BE CONSTRUCTED AND SHALL BE MADE FUNCTIONAL PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITIES. CONSTRUCT WHERE INDICATED AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS.
4. CONSTRUCT EXCAVATED DROP INLET PROTECTION AT NEW STORMWATER DROP INLET LOCATIONS DURING THE PROGRESS OF THE WORK AS INDICATED.
5. ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION IS ACHIEVED.
6. PERIODIC INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PERFORMED AS REQUIRED DURING THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF DRAIN INLETS AND PIPES THAT BECOME CLOGGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
7. MATERIAL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. APPLY DUST CONTROL MEASURES, TEMPORARY SEEDING AND MULCHING AS REQUIRED DURING THE PROGRESS OF THE WORK.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL MEASURES BEYOND THE APPROVED PLAN SHALL BE IMPLEMENTED AS NECESSARY.
9. INSTALL RIPRAP OUTLET PROTECTION, EROSION CONTROL MATTING, PERMANENT SEEDING, AND MULCHING AS INDICATED ON THE DRAWINGS AND IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.
10. MAINTAIN SEDIMENT CONTROL MEASURES UNTIL THE WORK IS COMPLETED AND ALL DISTURBED AREAS ARE STABILIZED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL TEMPORARY SEDIMENT CONTROL MEASURES AND RESTORE THOSE AREAS TO THE ORIGINAL OR DESIGNED CONDITIONS.

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: EROSION AND SEDIMENT CONTROL PLAN IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

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1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED: M. ILIC
DRAWN: P. NICHOLSON
CHECKED: G. COFFMAN
IN CHARGE: R. MAROTTE
DATE: 09 MARCH 07

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CHARLESTON, TENNESSEE

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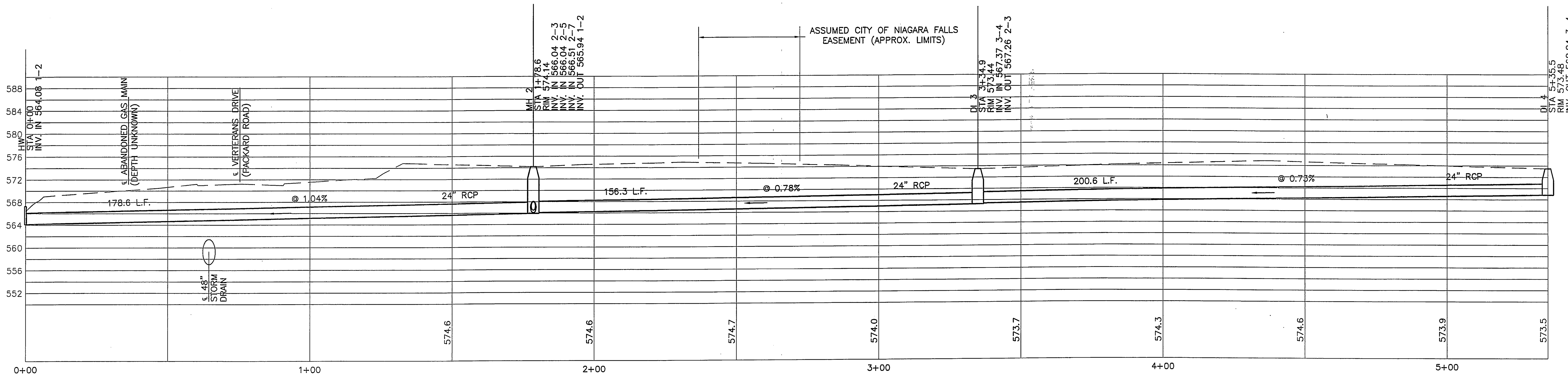
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

PHASE 2 EROSION AND SEDIMENT CONTROL PLAN

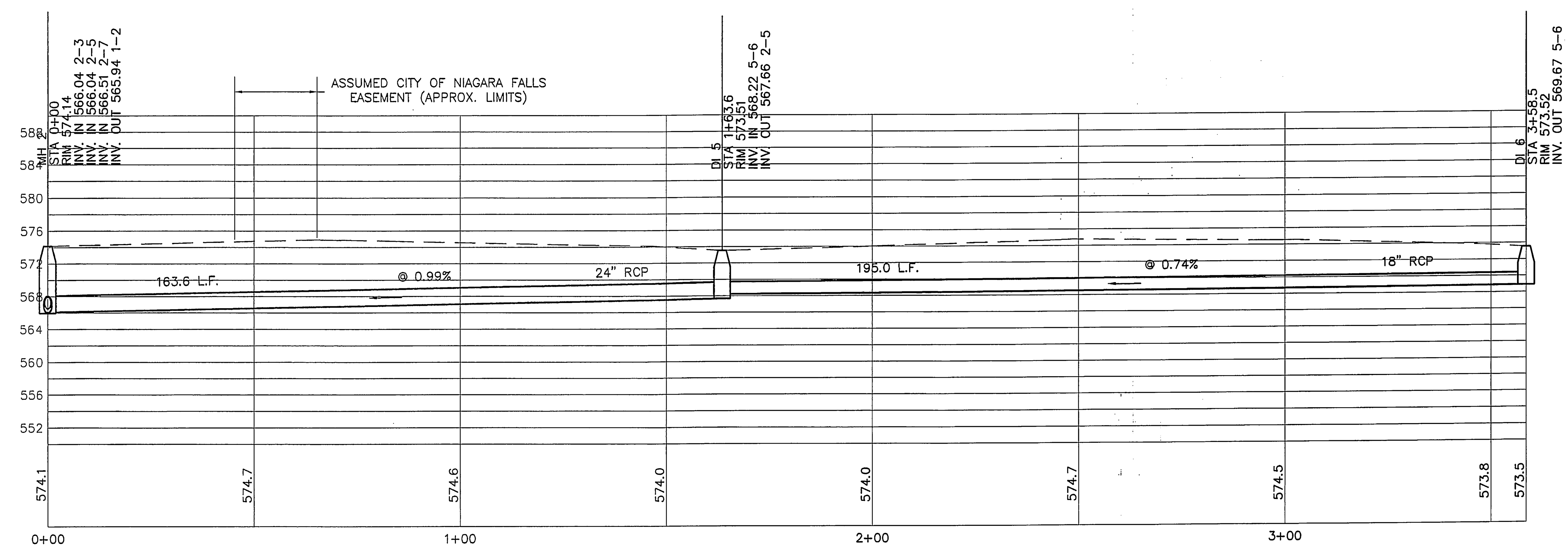
SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-004 | REV: 2 | PAGE NO: 6

J:\Olin\Packard Road\DWG\As-Built\Pln-Erosion and Sediment Control.dwg - PHASE 2 12/06/2007 8:29am cbudsock



HW 1 – DI 4

SCALE: 1"=20'–0" HORIZ.
1"=10'–0" VERT.



MH 2 – DI6

SCALE: 1"=20'–0" HORIZ.
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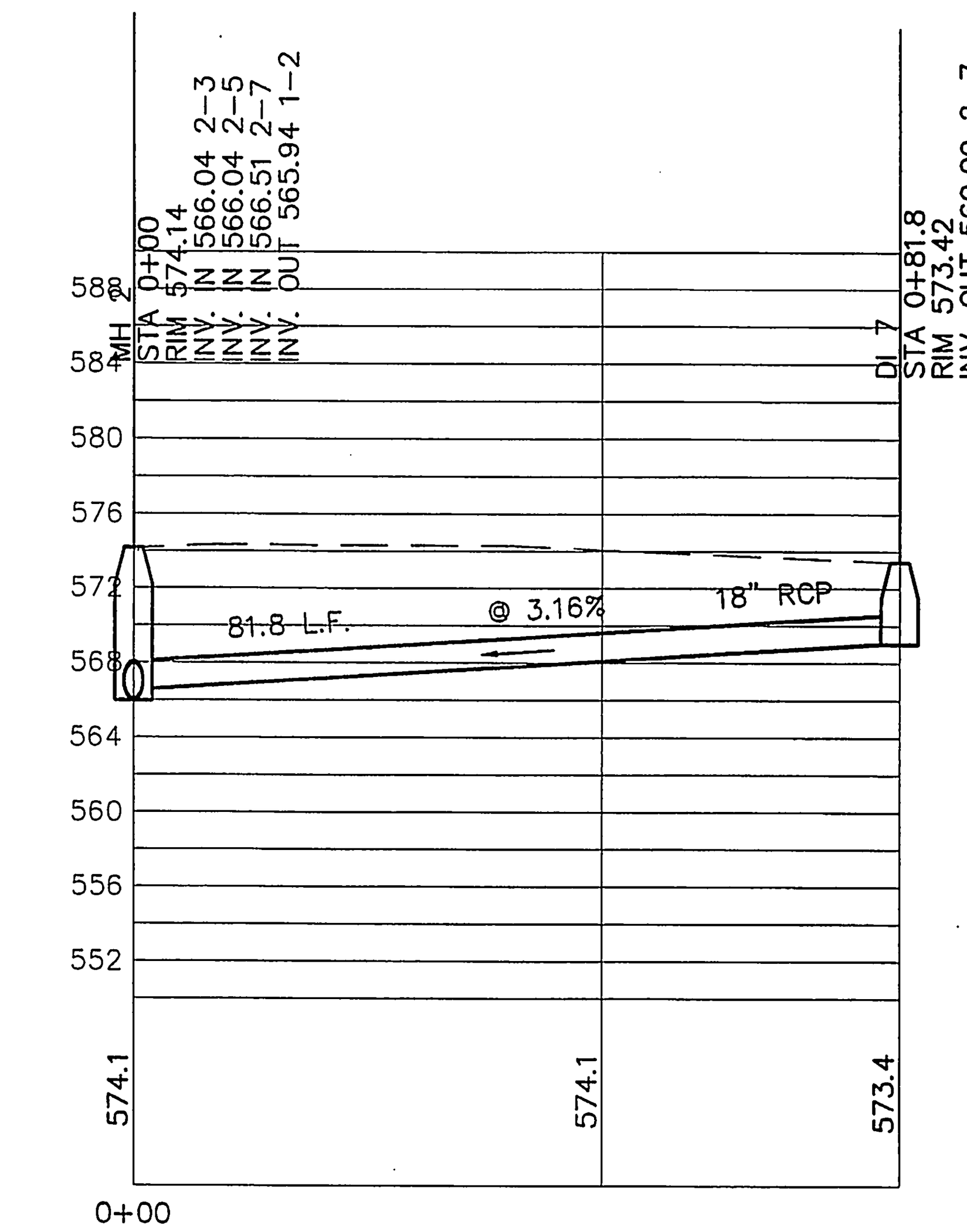

MH 2 – DI 7

SCALE: 1"=20'–0" HORIZ.
1"=10'–0" VERT.

NOTE:

STORM DRAIN SYSTEM PROFILES WERE BASED ON "AS-BUILT SURVEY OF: IWS OU3 (PACKARD ROAD SITE) NIAGARA FALLS, NEW YORK", PREPARED BY STEVEN A. CARLSON, L.L.S., TRI-POINT LAYOUT, INC., DATED NOVEMBER 19, 2007.

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: WORK WITHIN THE VETERANS DRIVE RIGHT-OF-WAY (INCLUDING STORM DRAINAGE PIPE ROAD CROSSING AND CONSTRUCTION OF ASPHALT-PAVED PULL-OFF LANE) IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				CLARIFIED INVERTS AT MH 2; ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED	S. LIND
DRAWN	P. NICHOLSON
CHECKED	G. COFFMAN
IN CHARGE	R. MAROTTE
DATE	09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

STORM DRAINAGE PIPE PROFILES

SCALE	AS SHOWN
CONTRACT	6100-07-0005
DWG. NO.	CL-101
REV	2
PAGE NO	7

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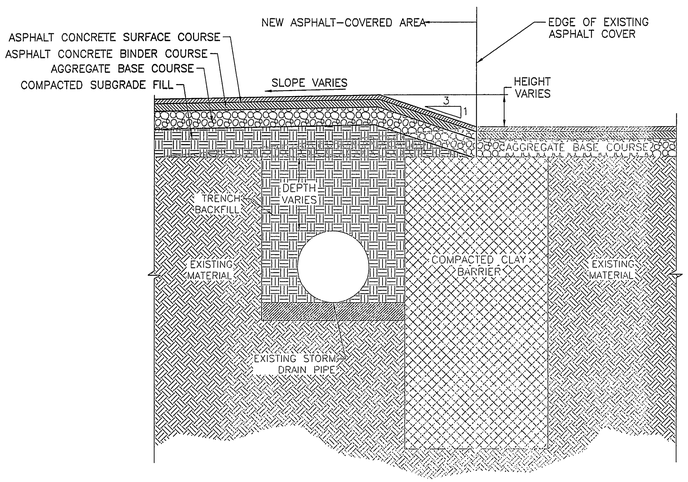
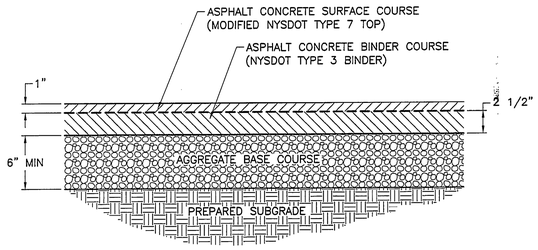
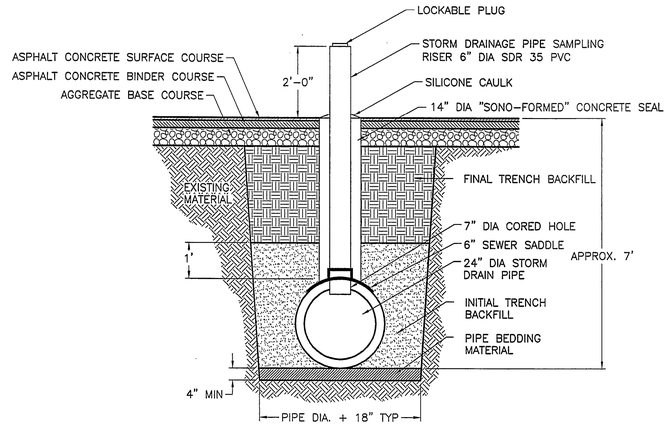


SECTION C
SCALE: N.T.S.
CL-102 CL-002



TYPICAL ASPHALT CONCRETE COVER SECTION

SECTION A
SCALE: 1 1/2"=1'-0"
CL-102 CL-002

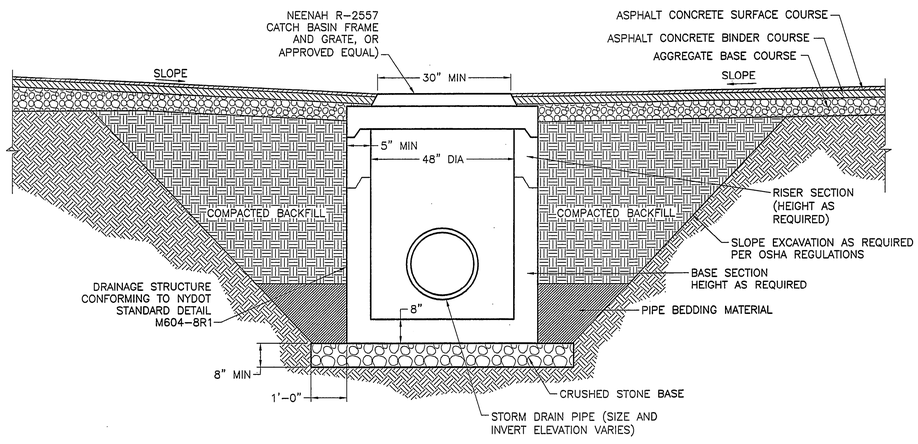


NOTE:

1. SLOPE SODES OF EXCAVATION OR PROVIDE TRENCH SHORING AS REQUIRED TO COMPLY WITH OSHA REGULATIONS.

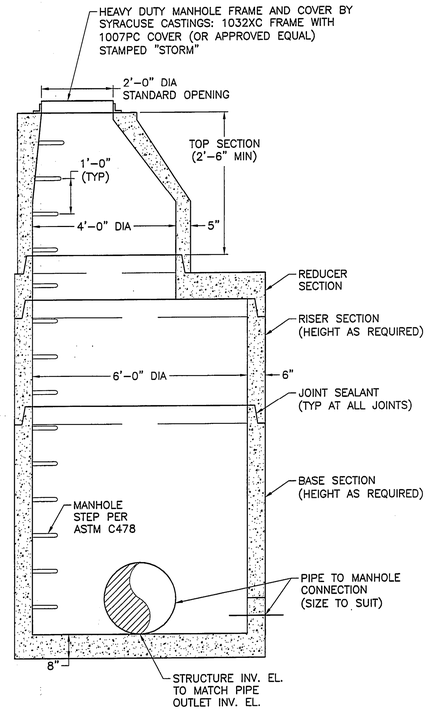
STORM DRAIN SAMPLING RISER

SECTION D
SCALE: N.T.S.
CL-102 CL-002



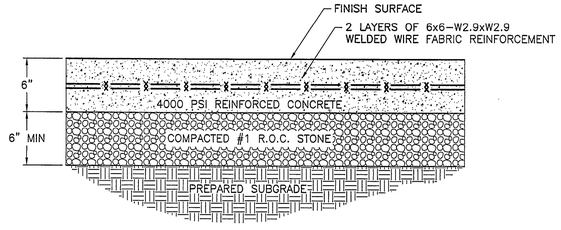
DROP INLET

SECTION F
SCALE: N.T.S.
CL-102 CL-002



STORM MANHOLE

SECTION K
SCALE: 1/2"=1'-0"
CL-102 CL-002



TYPICAL PAVEMENT SECTION FOR PULL-OFF (TURN-OFF) LANE

SECTION J
SCALE: 1 1/2"=1'-0"
CL-102 CL-002

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				ADDED CATCH BASIN & MANHOLE COVER; ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

COVER SYSTEM DETAILS AND SECTIONS

SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-102
REV: 2
PAGE NO: 8

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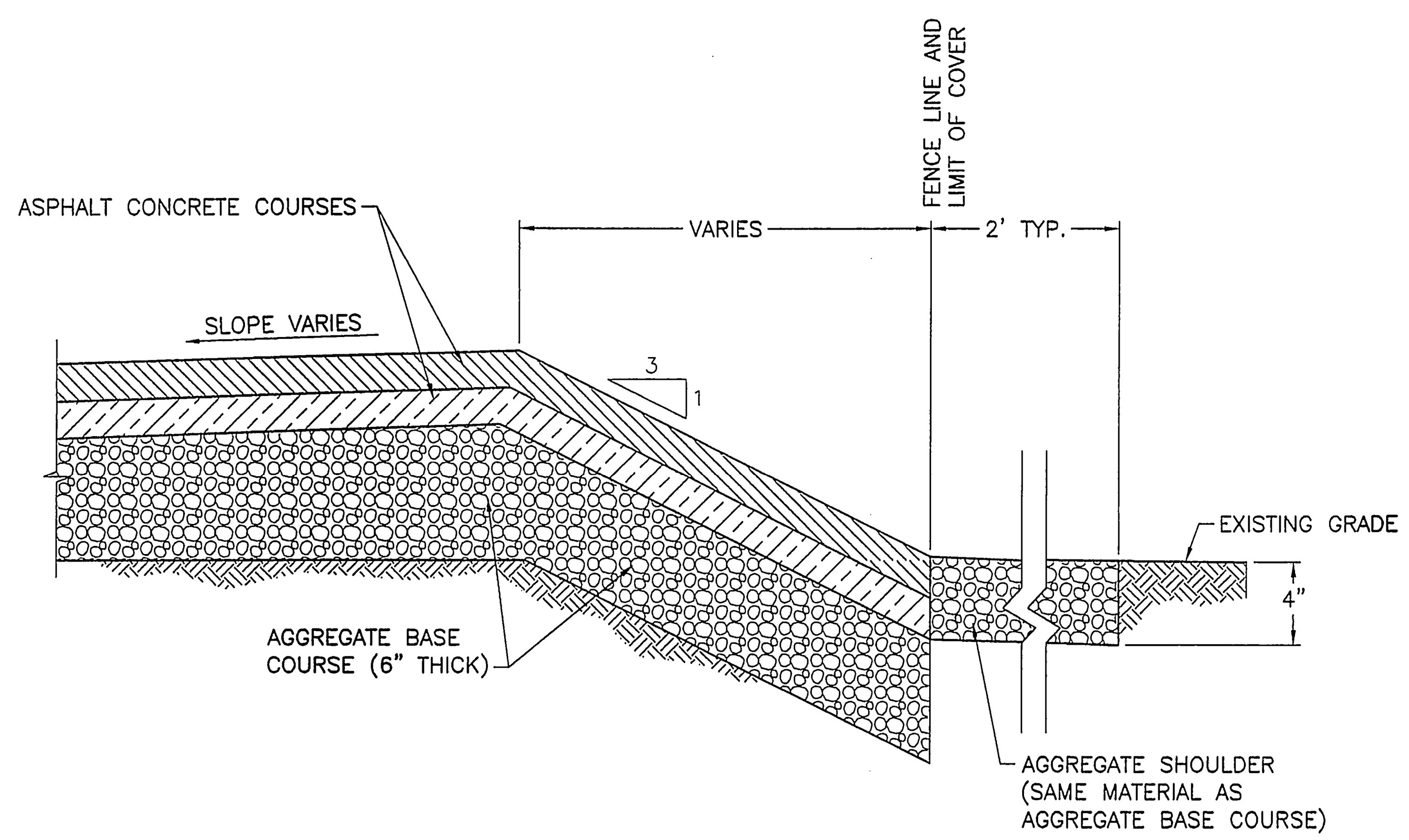


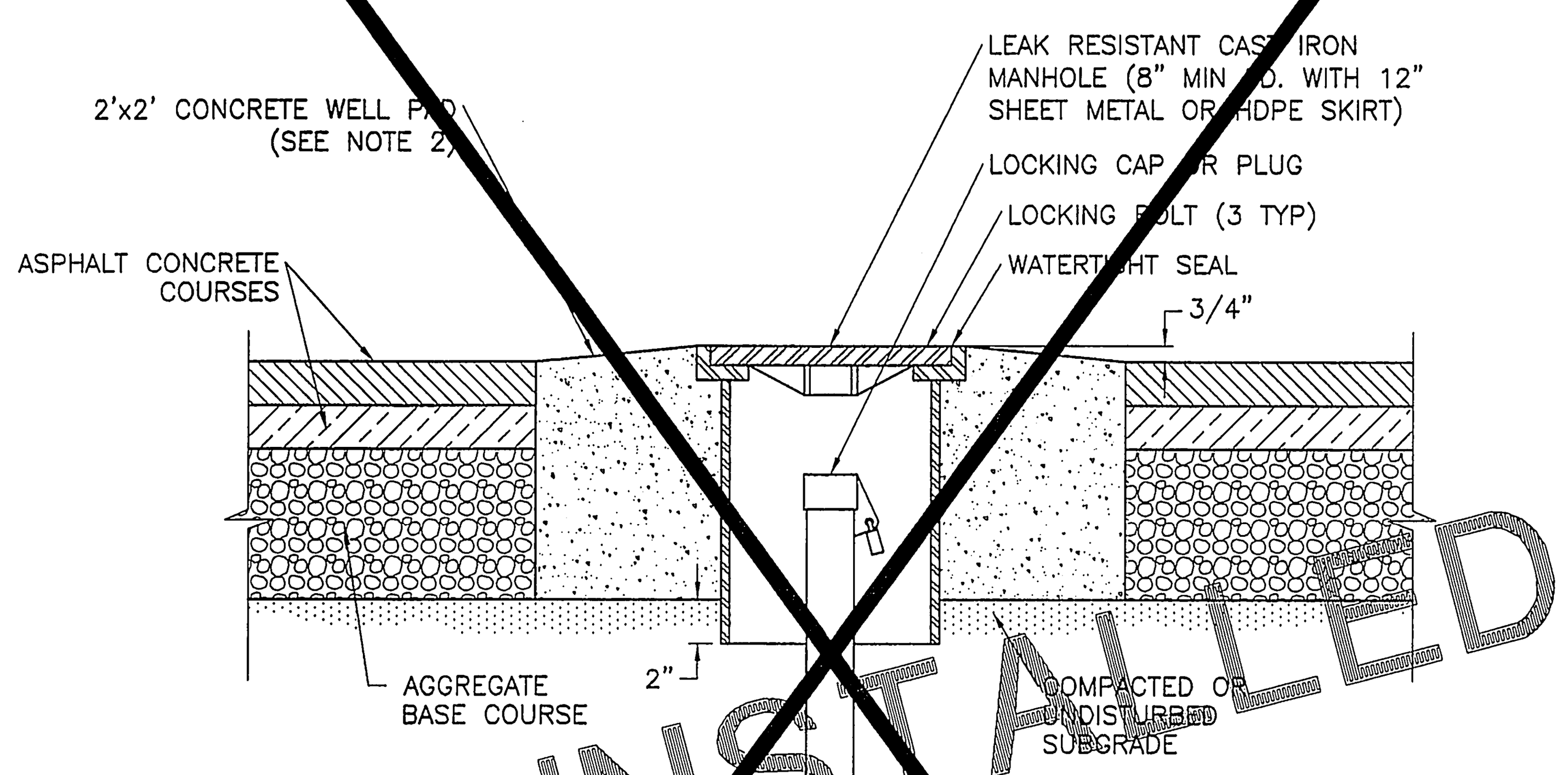
NOTES:

1. CONSTRUCT AGGREGATE SHOULDER ALONG EAST AND SOUTH SIDES OF ASPHALT COVER AS SHOWN.
2. DETAIL IS TYPICAL FOR ALL EDGES WITH THE EXCEPTION OF THE NORTH AND WEST SIDES.

ASPHALT COVER EDGE CONSTRUCTION

SECTION B

SCALE: N.T.S. CL-103 CL-002



NOT INSTALLED

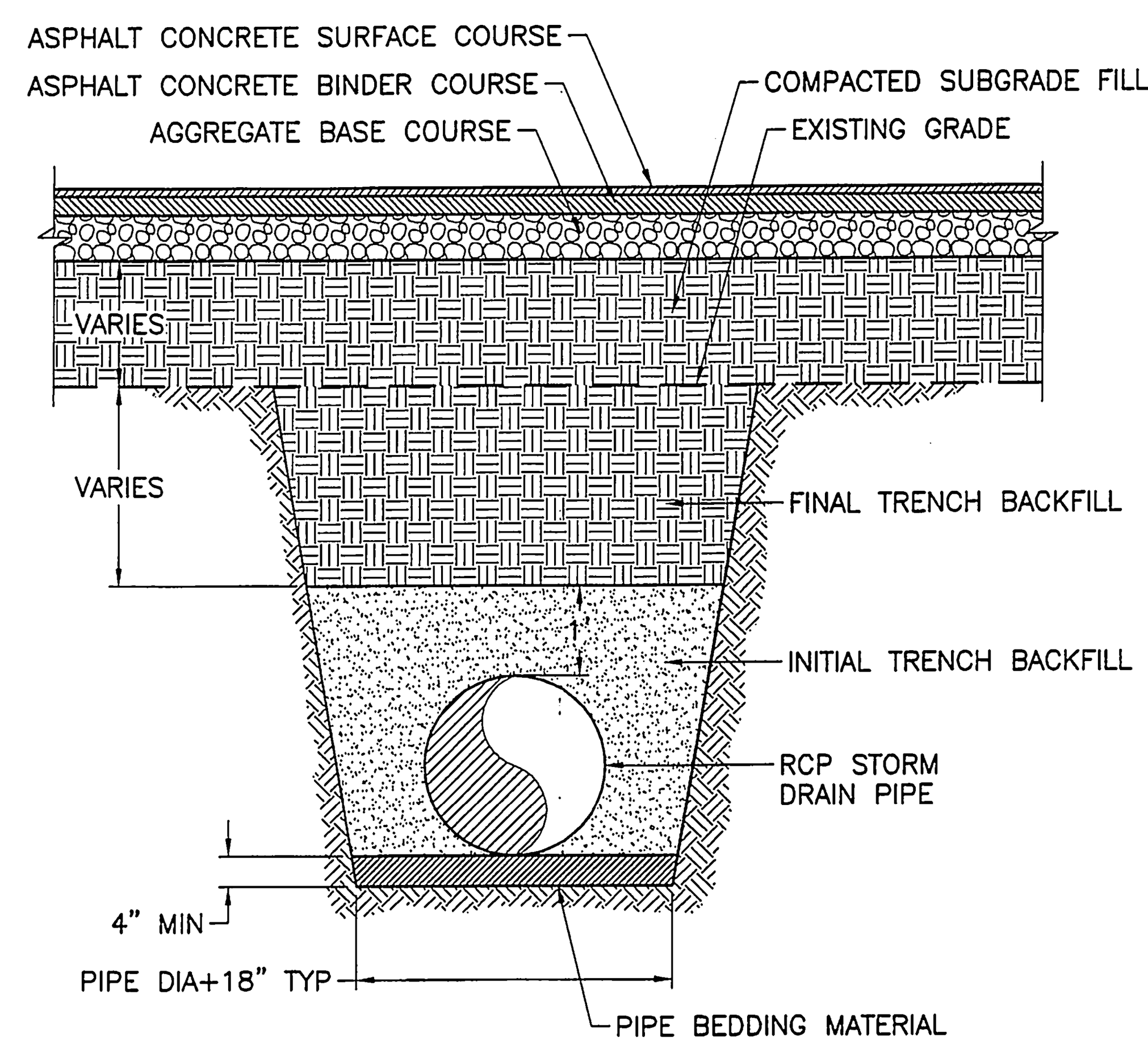
NOTES:

1. REMOVE EXISTING PROTECTIVE COVER. CUT AND REMOVE TOP OF RISER AT ELEVATION BELOW FINISH GRADE AS SHOWN.
2. WELL PAD SHALL EXTEND TO BOTTOM OF AGGREGATE BASE.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL WELL TOP RECONSTRUCTION REQUIREMENTS.

MONITORING WELL TOP RECONSTRUCTION

DETAIL 2

SCALE: NOT TO SCALE CL-103 CL-002



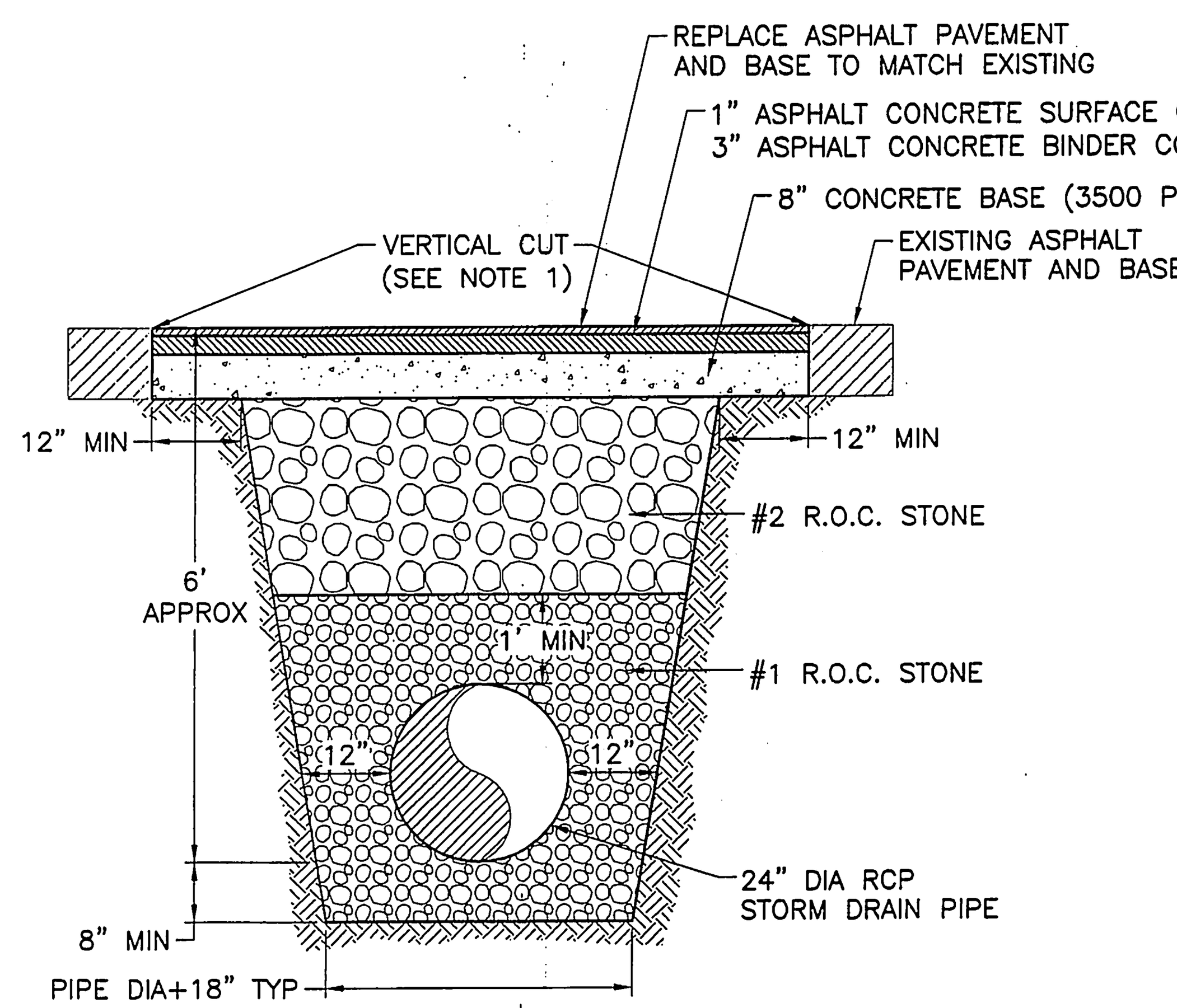
NOTE:

1. SLOPE SIDES OF EXCAVATION OR PROVIDE TRENCH SHORING AS REQUIRED TO COMPLY WITH APPLICABLE OSHA REGULATIONS.

TYPICAL STORM DRAIN PIPE INSTALLATION UNDER ASPHALT COVER

SECTION E

SCALE: 1/4"=1'-0" CL-103 CL-002



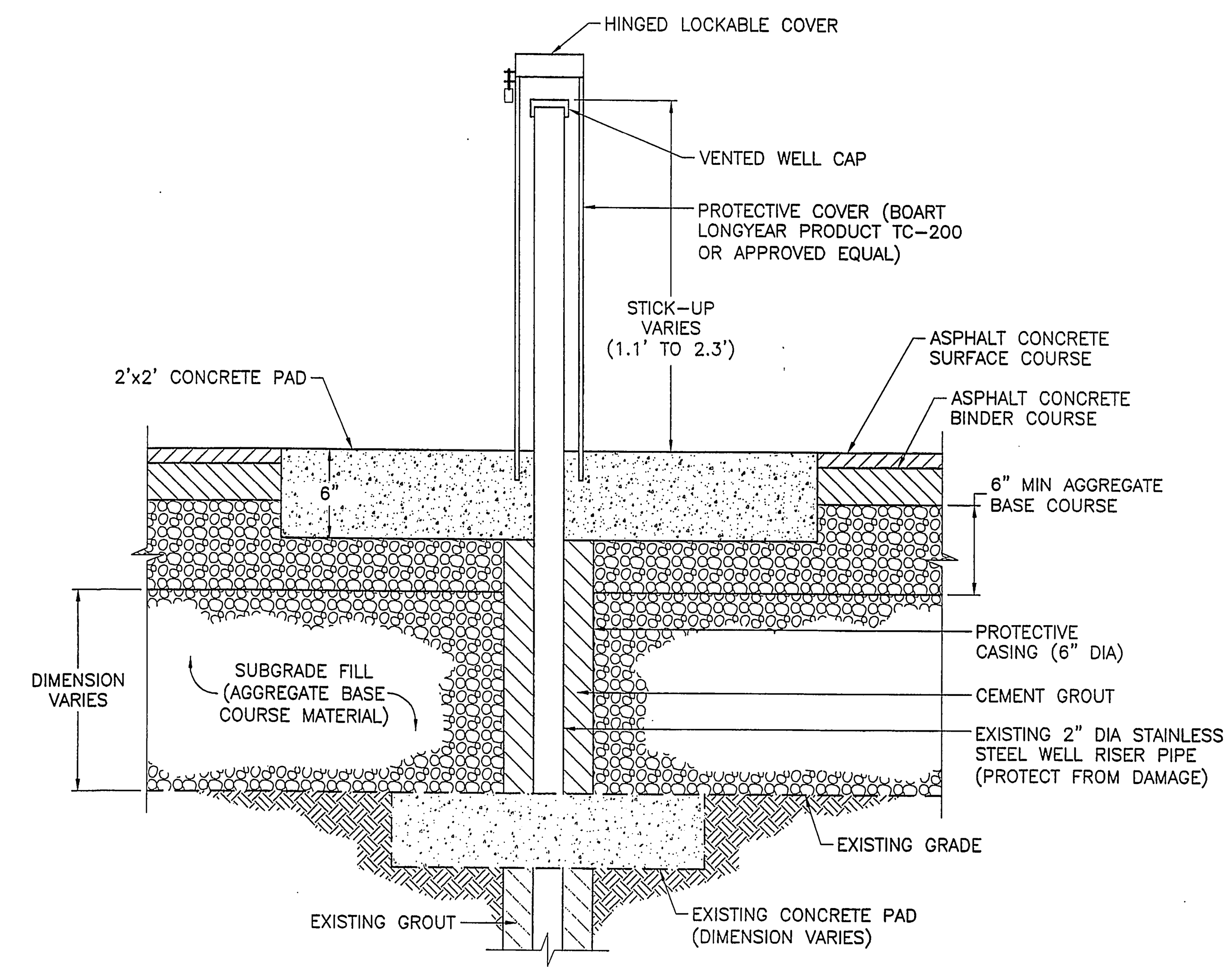
NOTES:

1. CUT EXISTING PAVEMENT IN A UNIFORM STRAIGHT ALIGNMENT ON EACH SIDE OF TRENCH EXCAVATION AT INDICATED DISTANCE OUTSIDE TOP OF EXCAVATION. MAINTAIN PAVEMENTS CUTS IN GOOD CONDITION UNTIL PIPE INSTALLATION, BACKFILL AND PAVEMENT RESTORATION ARE COMPLETED.
2. SLOPE SIDES OF EXCAVATION OR PROVIDE TRENCH SHORING AS REQUIRED TO COMPLY WITH APPLICABLE OSHA REGULATIONS.
3. CONFORM TO CITY OF NIAGARA FALLS REQUIREMENTS.

TYPICAL PIPE INSTALLATION ACROSS ROAD

SECTION G

SCALE: N.T.S. CL-103 CL-002



NOTE:

1. CONTRACTOR SHALL NOT DISTURB OR DAMAGE EXISTING MONITORING WELLS, INCLUDING RISER PIPE, CONCRETE PAD, SURFACE SEAL, AND SUBSURFACE WELL COMPONENTS.
2. CONCRETE WHEEL STOPS WERE INSTALLED ON 4 SIDES OF EACH WELL WITHIN LIMITS OF COVER. BOLLARDS (4-INCH DIAMETER CONCRETE-FILLED STEEL PIPES) WERE CONSTRUCTED ADJACENT TO MONITORING WELL AT SITE ENTRANCE OUTSIDE LIMITS OF COVER.
3. ASPHALT CONCRETE AND AGGREGATE BASE NOT CONSTRUCTED AROUND THE MONITORING WELL OUTSIDE LIMITS OF COVER AT SITE ENTRANCE.

MONITORING WELL TOP RECONSTRUCTION

DETAIL 1

SCALE: N.T.S. CL-103 CL-002

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED: S. LIND
DRAWN: C. BUDSOCK
CHECKED: G. COFFMAN
IN CHARGE: R. MAROTTE
DATE: 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

COVER SYSTEM
DETAILS AND SECTIONS

SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-103 REV: 2 PAGE NO: 9

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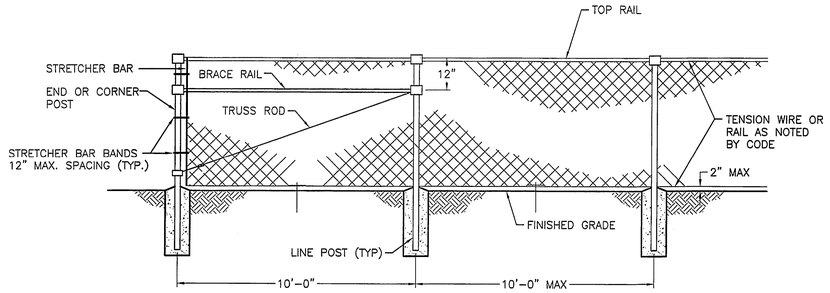
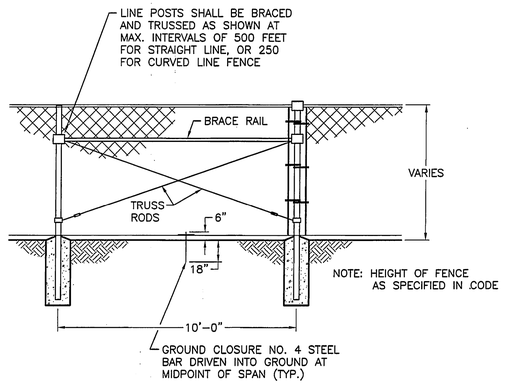
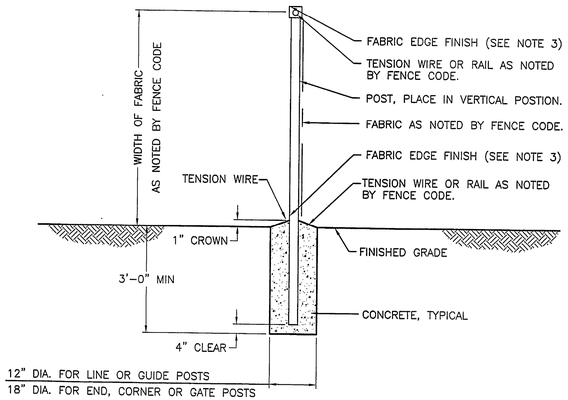


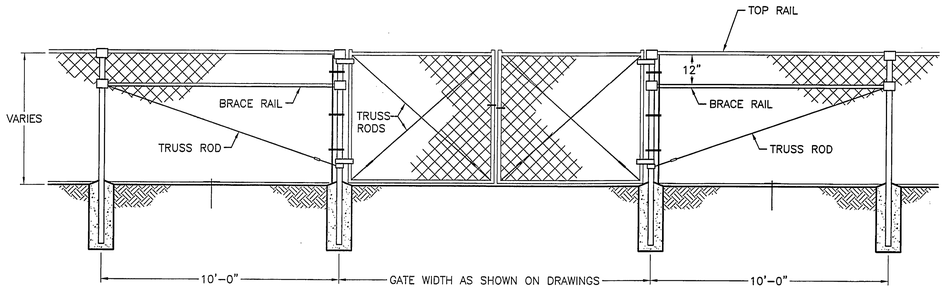
ELEVATION AT CORNER OR END



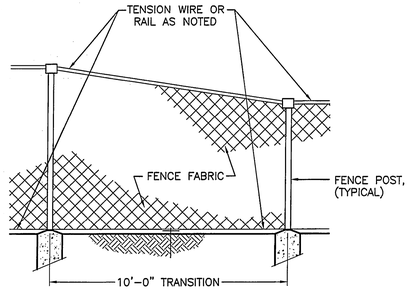
ELEVATION AT BRACED POSTS



FENCE SECTION



DOUBLE-LEAF
SWINGING GATE ELEVATION



TRANSITION IN FENCE HEIGHT

① ② ③ ④
CL – 6 W T

FENCE DESIGNATION CODE:

① TYPE OF CHAIN LINK FABRIC:
CL = GALVANIZED STEEL.
VCL = VINYL – CLAD GALVANIZED STEEL.

② WIDTH OF FABRIC IN FEET / HEIGHT ERECTED.

③ TYPE OF TOP / BOTTOM SUPPORTS:
W = TENSION WIRE.
P = PIPE RAIL.

④ INCLINATION OF EXTENSION ARMS:
T = TOWARD PROTECTED FACILITY.
V = VERTICAL.
A = AWAY FROM PROTECTED FACILITY.
0 = NO BARBED WIRE OR EXTENSION ARMS USED.

NOTES:

1. LOCATION OF FENCING, LOCATION OF GATES, GATE WIDTH AND ANY SPECIAL FEATURES NECESSARY TO CONSTRUCT FENCING AND GATES SHALL BE AS SHOWN ON DRAWINGS. ALL DIMENSIONS EXCEPT GATE WIDTH SHALL BE TO CENTERS OF POSTS.
2. CHAIN LINK FENCE FEATURES SHALL BE AS NOTED ON THE DRAWINGS AND SHALL BE FENCE DESIGNATION CODE CL–6 P A.
3. UNLESS OTHERWISE NOTED, TOP AND BOTTOM EDGES OF FABRIC SHALL BE BARBED AND TWISTED WHEN BARBED WIRE IS USED AND KNUCKLED WHEN NO BARBED WIRE IS USED.
4. SEE SPECIFICATIONS FOR FABRICATION AND INSTALLATION REQUIREMENTS FOR FENCING.
5. GROUND CLOSURE SHALL BE PROVIDED AT LOCAL GROUND DEPRESSIONS WHERE TENSION WIRE OR RAIL IS MORE THAN 2 INCHES ABOVE GROUND SURFACE AS INDICATED OR DIRECTED.

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS–BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421–3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

CHAIN LINK FENCING DETAILS

SCALE AS SHOWN
CONTRACT 6100–07–0005
DWG. NO. CL–104 | REV 2 | PAGE NO 10

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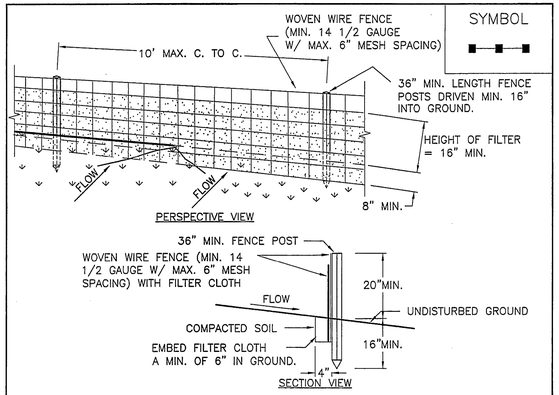
SYMBOL



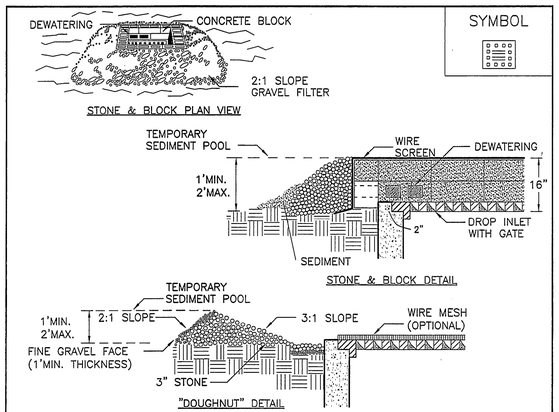
CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

SILT FENCE

SYMBOL



CONSTRUCTION SPECIFICATIONS

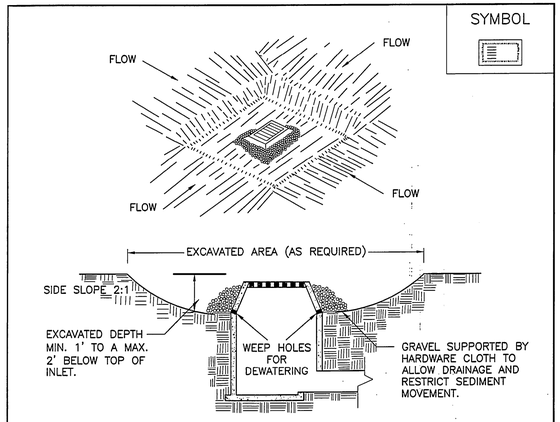
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STONE & BLOCK DROP INLET PROTECTION

SYMBOL



CONSTRUCTION SPECIFICATIONS

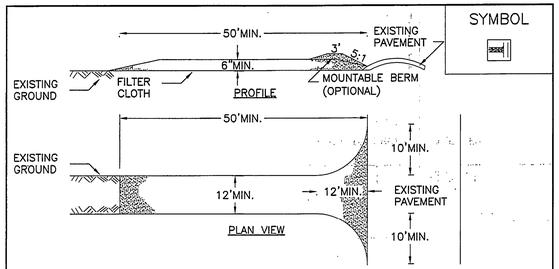
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

EXCAVATED DROP INLET PROTECTION

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

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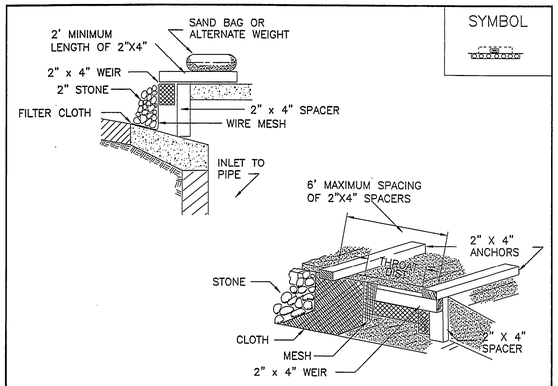
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STABILIZED CONSTRUCTION ENTRANCE

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2" x 4" CONSTRUCTION GRADE LUMBER.
3. WIRE MESH ACROSS THROAT SHALL BE A CONTINUOUS PIECE 30 INCH MINIMUM WIDTH WITH A LENGTH 4 FEET LONGER THAN THE THROAT. IT SHALL BE SHAPED AND SECURELY NAILED TO A 2" x 4" WEIR.
4. THE WEIR SHALL BE SECURELY NAILED TO 2" x 4" SPACERS 9 INCHES LONG SPACED NO MORE THAN 6 FEET APART.
5. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2" x 4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE INLET AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

CURB DROP INLET PROTECTION

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: EROSION AND SEDIMENT CONTROL PLAN IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED M. ILIC
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

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CHARLESTON, TENNESSEE

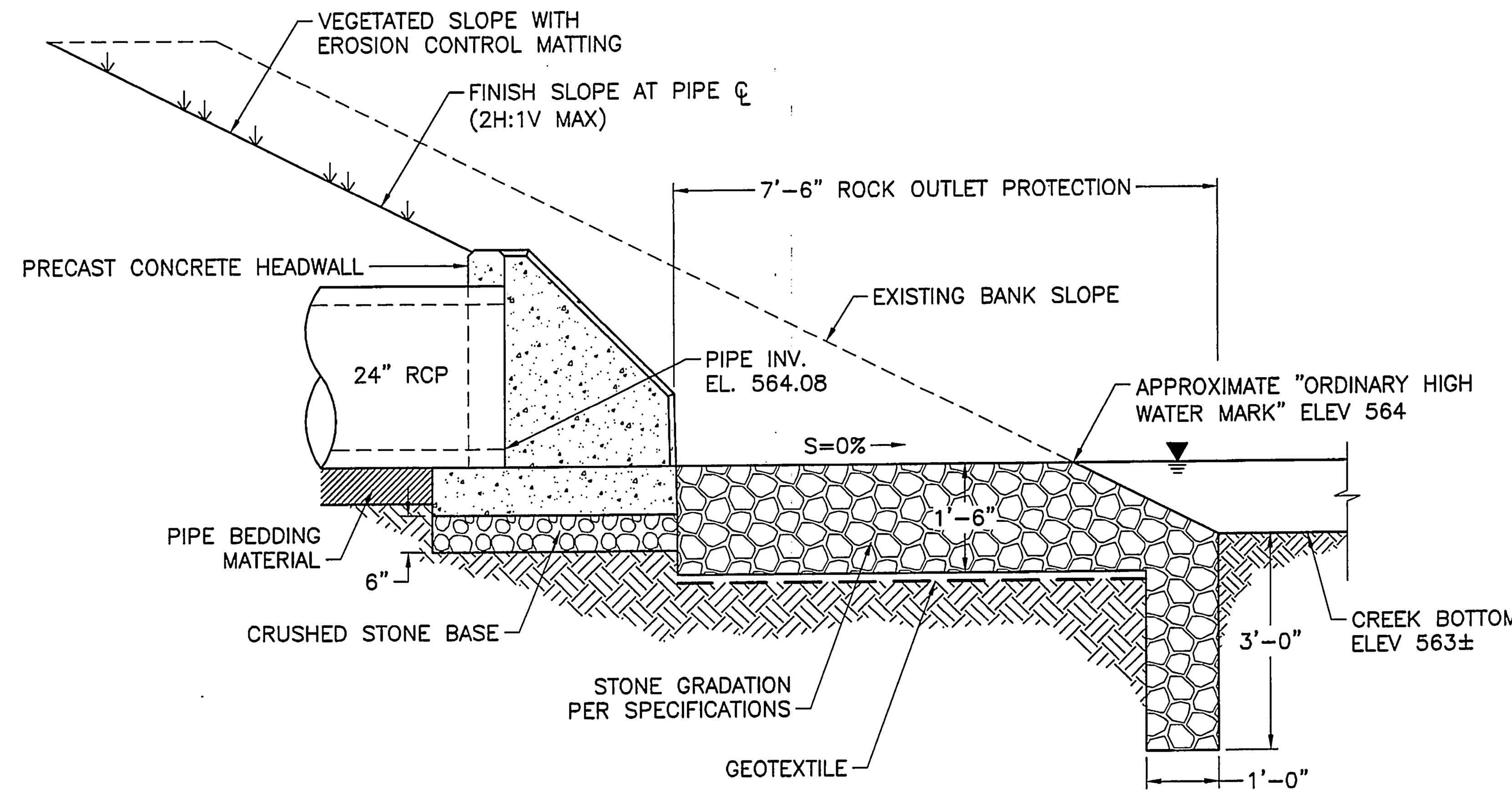
MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

EROSION AND SEDIMENT CONTROL DETAILS (1 OF 2)

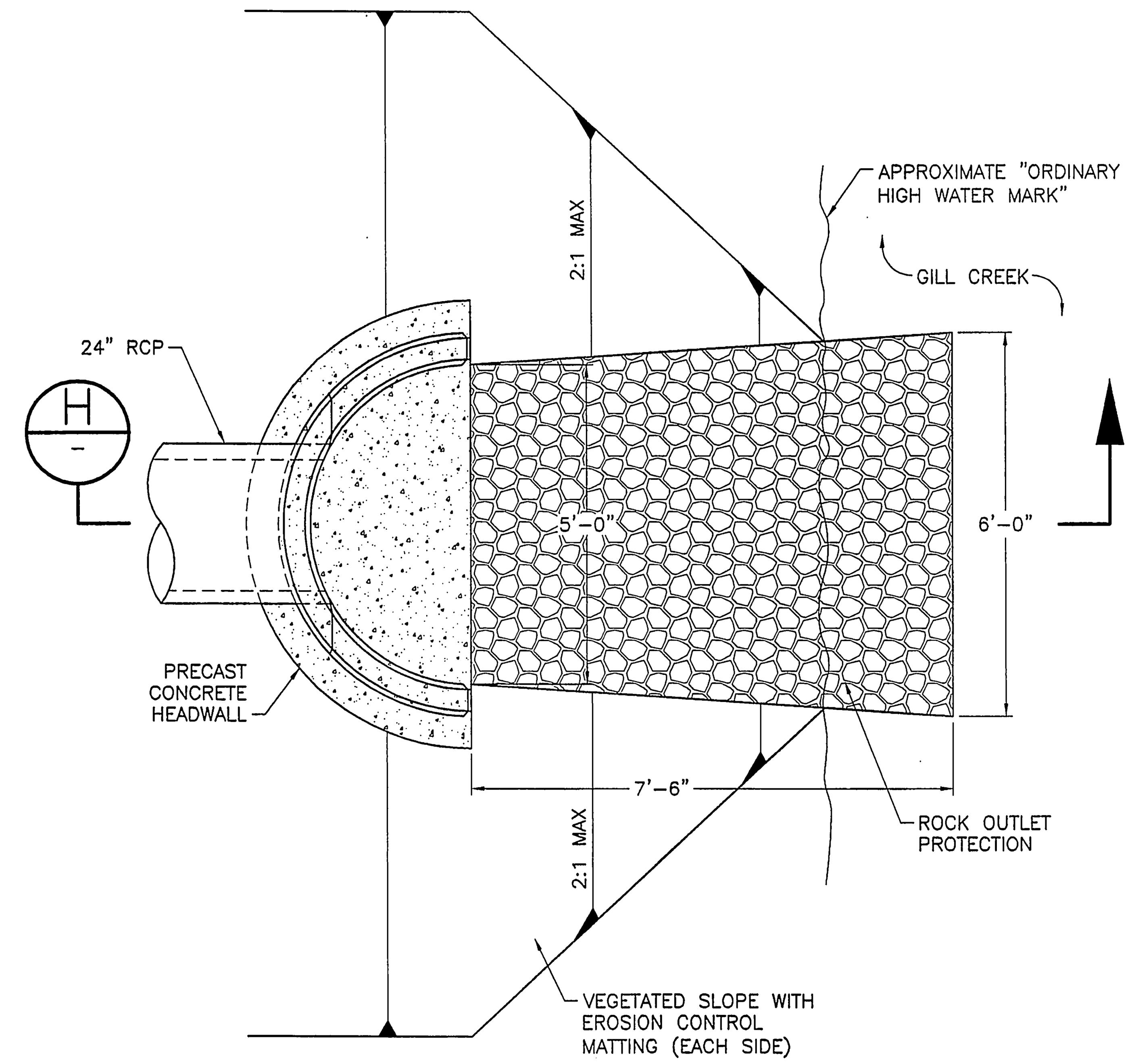
SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO. CL-105 | REV 2 | PAGE NO 11

J:\Olin\Packard Road\DWG\As-Built\Details.dwg - Erosion and Sediment Control-1 12/06/2007 8:22am cbudsock



STORMWATER DISCHARGE

SECTION H/-
SCALE: 1/2"=1'-0"



DETAIL 3/CL-106
SCALE: 1/2"=1'-0"

CALCULATION OF ROCK OUTLET PROTECTION
(IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", AUG. 2005, NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION)

d	=	24 INCHES
La	=	10 FT
w	=	d + 0.4 La
w	=	2 + 0.4 X 10
w	=	6 FT

THESE DRAWINGS HAVE BEEN REVISED BASED ON AVAILABLE INFORMATION TO RECORD CHANGES MADE DURING CONSTRUCTION

NOTE: EROSION AND SEDIMENT CONTROL PLAN IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

REV	DATE	BY	SUB	APP	DESCRIPTION
2	11/16/07				AS-BUILT DRAWING
1	04/30/07				REVISED STONE GRADATION SPECIFICATION; ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED M. ILIC
DRAWN C. BUDSOCK
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

STATE OF NEW YORK · GLENN N. COFFMAN · PROFESSIONAL ENGINEER

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC
MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

EROSION AND SEDIMENT CONTROL DETAILS (2 OF 2)

SCALE: AS SHOWN
CONTRACT: 6100-07-0005
DWG. NO.: CL-106 REV: 2 PAGE NO: 12

J:\Olin\Packard Road\DWG\As-Built\Details.dwg - Erosion & Sediment Control-2 12/06/2007 8:20am cbudsock

APPENDIX B

NYSDEC REMEDIAL DESIGN REPORT APPROVAL LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

March 21, 2007

Mr. Michael J. Bellotti
Olin Corporation
P.O. Box 248
1186 Lower River Road, NW
Charleston, Tennessee 37310-0248

Dear Mr. Bellotti:

Olin Corp. Industrial Welding (Site #9-32-050)
Operable Unit #3 (a.k.a. Packard Road Parcel)
Final Remedial Design Report

The New York State Department of Environmental Conservation (NYSDEC) has reviewed Olin's March 9, 2007 Final Remedial Design Report for Operable Unit (OU)#3 of the Olin Industrial Welding site. The Remedial Design Report for OU#3 is hereby approved by NYSDEC.

In accordance with the Record of Decision for OU#3 and program requirements, the remaining items required for this site are: the remedial construction certification report for OU#3; an executed easement; a revised and updated Operation and Maintenance (O&M) manual (which includes OU#3); and a Site Management Plan.

Should you have any questions, please feel free to contact me at (716) 851-7220.

Sincerely,

Jeffrey A. Konsella, P.E.
Environmental Engineer II

JAK:sz

cc: Mr. Gregory Sutton, DEC Buffalo
Ms. Denise Radtke, DEC Albany
Mr. Matthew Forcucci, DOH Buffalo
Mr. Paul Dicky, Niagara County Health Department

APPENDIX C

MODIFIED OLIN WASTEWATER DISCHARGE PERMIT NO. ICU-23

June 7, 2007

Mr. Michael J. Bellotti
Olin Corporation
1186 Lower River Road, NW
PO Box 248
Charleston TN 37310

Dear Mr. Bellotti:

The Niagara Falls Water Board has completed the review of your request for the temporary discharge of contaminated surface water as a result construction activities at Olin's Industrial Welding Site. Attached is a copy of Olin's modified Permit No. ICU-23. Please note Attachment No. 1 which contains the conditions of the discharge of construction water which is in addition to the existing discharge.

It is our understanding that this wastewater will be transported directly to the NFWB POTW. The cost of disposal will be billed at a rate of 4 cents per gallon. If you have any questions I may be contacted at 716-283-9770, ext. 206. A copy of this permit will be hand delivered to Mr. Ted Wertz of Mactec, Inc.

Sincerely,

NIAGARA FALLS WATER BOARD
WASTEWATER FACILITIES

Albert C. Zaepfel
Industrial Monitoring Coordinator
Enforcement Division

Enc.

Cc: File ICU-23
Semi-Annual Report NYSDEC Region 9, USEPA Region 2

I:\ADMIN\WINWORD\ZAEPFEL\MEMO 07\BELLOTTI OLIN MODIFIED PERMIT

NIAGARA FALLS WATER BOARD

WASTEWATER DISCHARGE PERMIT FOR INDUSTRIAL COMMERCIAL USER

PERMIT NO. ICU – 23 OLIN CORPORATION (INDUSTRIAL WELDING SITE)

In accordance with all terms and conditions of the Niagara Falls Water Board Regulations Part 1960 and also with all applicable provisions of Federal and State Law or regulation:

Permission is Hereby Granted To: **OLIN CORPORATION**

located at: **1186 LOWER RIVER ROAD NW, CHARLESTON TN 37310**

classified by SIC No(s): NONE

for the contribution of wastewater into the Niagara Falls Water Board Publicly-Owned Treatment Works (POTW).

EFFECTIVE THIS 14th DAY OF JANUARY 2005
TO EXPIRE THIS 14th DAY OF JANUARY 2010
This Permit Modified 06-14-07

Richard R. Roll
Director of Technical & Regulatory Services

Signed this 8th DAY OF JUNE 2007

LIST - DISCHARGE IDENTIFICATION

OUTFALL	DESCRIPTION	LOCATION	RECEIVING
MS #1	Monitoring Site No. 1	Industrial Welding Site, 100 block of Packard Road	Untreated leachate from inactive hazardous waste disposal site

A. GENERAL WASTEWATER DISCHARGE PERMIT CONDITIONS

1. Flow monitoring should be performed concurrently with any Wastewater Discharge Permit sampling and should be reported at the same time as analytical results. If it is not feasible to perform flow monitoring, an estimate of flow (method of estimated flow pre-approved by the City) should be submitted with the analytical results.

2. All sampling for pretreatment compliance purposes shall be coordinated through the Industrial Monitoring Coordinator.

3. All analyses must be performed by a laboratory using analytical test methods specified in 40 CFR Part 403.12.

4. All samples shall be handled in accordance with EPA approved methods. Chain of Custody records shall be submitted with all sampling results.

5. All conditions, standards and numeric limitations of Part 1960 of the Niagara Falls Water Board Regulations are hereby incorporated into this permit by reference. These conditions, standards and numeric limitations must be complied with. Failure to comply with any part of said ordinance constitutes a violation and is subject to enforcement action(s) described in Part 1960.9 of said ordinance.

6. Any violation noted by the Industrial User (IU) must be reported immediately to the Niagara Falls Water Board - Wastewater Facilities. In accordance with Federal Regulation 40 CFR, Part 403.12(g), any violation noted by the ICU must be re-sampled, analyzed and resubmitted to the NFWB – Wastewater facilities within thirty (30) days.

7. Sampling frequency for any permitted compounds may be increased beyond the requirements set forth in Section C and D of this permit. If the permittee monitors (sample and analysis) more frequent than required under this permit, all results of this monitoring must be reported.

8. As noted in Part 1960.6 of the Niagara Falls Water Board Regulation, “Personnel as designated by the Director shall be permitted any anytime for reasonable cause to enter upon all properties served by the NFWB – POTW for the purpose of, and to carry out, inspection of the premises, observation, measurement, sampling and testing, in accordance with provisions of the Ordinance.”

9. As noted in Part 1960.5 of the Niagara Falls Water Board Regulation, significant changes in discharge characteristics or volume must be reported immediately to the NFWB – Wastewater Facilities.

10. As noted in Part 250.6 of the Niagara Falls Water Board Regulation, “Permits are issued to a specific user for a specific monitoring site. A permit shall not be reassigned or transferred without the approval of the Director which approval shall not be unreasonably withheld. Any succeeding owner or user to which a permit has been transferred and approved shall also comply with all terms and conditions of the existing permit.”

11. Periodic Self Monitoring Reports (PSMR) shall be submitted as directed in Section D of this permit. Such PSMRs shall obtain the following information.

    a) Name of permitted facility,
    b) The exact place, date and time of sampling,
    c) The dates the analysis were performed,
    d) The person(s) who performed the analysis,
    e) The analytical techniques or methods used,
    f) The results of all required analysis in <u>concentration</u> and mass,
    g) The flow quantity measured during the 24 hour period of sample collection and the means by which the flow quantity was derived, and
    h) The report shall be signed by a “Responsible Company Official” acknowledging the following statement:

A. GENERAL WASTEWATER DISCHARGE PERMIT CONDITIONS CON'T

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violation."

12. All reports shall be submitted to the following address:

Industrial Monitoring Coordinator
Niagara Falls Water Board
Wastewater Facilities
1201 Buffalo Avenue
Niagara Falls, NY 14303-1514

B. SPECIFIC WASTEWATER DISCHARGE PERMIT CONDITIONS

A) Self Monitoring

1) The permittee will collect and analyze and one (1) sample per year as directed in Sections C and D of this permit.

C. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until the expiration date, discharge from the permitted facility outfall(s) shall be limited and monitored by the permittee as specified below.

OUTFALL NUMBER SAMPLE EFFLUENT PARAMETER	DISCHARGE LIMITATIONS			MINIMUM MONITORING REQUIREMENTS MEASUREMENT	
	ANNUAL AVERAGE	DAILY MAXIMUM	UNITS	FREQUENCY	TYPE
MS #1 Flow	.005	.008	MGD	Continuous	N/A
MS #1 Total Suspended Solids		15	Lbs/day	1/year	Grab
MS #1 Soluble Organic Carbon		10	Lbs/day	1/year	Grab
Trichloroethylenes		0.01	Lbs/day	1/year	Grab
BHC's (total)		0.001	Lbs/day	1/year	Grab
Mercury		0.008	Lbs/day	1/year	Grab
Acetone		0.01	Lbs/day	1/year	Grab
Dichloroethanes		0.01	Lbs/day	1/year	Grab

C. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS CON'T

SAMPLE TYPE FOOTNOTES

(1) Sample shall consist of a laboratory composite of four (4) grabs collected equally throughout the batch discharge period. A total of four (4) samples (batches) will be analyzed and reported each quarter for each outfall.

(2) A sample shall consist of a 24 hour laboratory composite of four (4) grab samples collected evenly spaced over the period of release. pH of each grab sample shall be tested immediately upon collection.

(3) Sample shall consist of a 24 hour flow proportion composite sample collected from each monitoring station.

(4) Flow will be monitored continuously via water meters.

(5) Sample shall consist of a 24 hour time proportion composite sample from each approved discharge monitoring point.

(6) Determination of quantities shall be derived from five (5) 24 hour proportion composite samples collected from each approved monitoring point.

(7) Same as (3), however, five (5) samples will be collected per quarter from the monitoring station and analyzed by and at the Niagara Falls Water Board's expense.

D. DISCHARGE MONITORING REPORTING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until its expiration date, discharge monitoring results shall be summarized and reported by the permittee, as noted below. Semiannual Self Monitoring Reports will be submitted February 28th and August 31st. Annual Reports will be submitted by February 28th.

OUTFALL NO.	PARAMETER	REPORTING FREQUENCY
MS #1	Total Suspended Solids	Annually
MS #1	Soluble Organic Carbon	Annually
MS #1	Trichloroethylenes	Annually
MS #1	BHC's	Annually
MS #1	Acetone	Annually
MS #1	Dichloroethanes	Annually
MS #1	Mercury	Annually
MS #1	Flow	Annually

E. COMMENTS/MODIFICATIONS:

1) Effective 06-14-07 this permit is temporarily modified to accept construction water associated with further remedial site work. The changes are incorporated in the attached approval. [Attachment #1]

Attachment #1
Olin Industrial Welding Site Permit No. ICU-23

Conditions of discharge of wastewater associated with temporary Construction activities June 2007

This attachment is written for the express purpose of granting permission for the temporary discharge of wastewater in addition to the existing landfill leachate. The discharge is subject to the following conditions;

- The daily volume will be limited to 33,000 gallons per day.
- The wastewater must be transported to the Niagara Falls Water Board Wastewater Facilities to a designated manhole on the facility plant site. All manifest procedures must be followed for each load.
- The maximum tank truck capacity will be used as the volume discharged. The NFWB assumes a full load is delivered.
- A sample shall be collected **every 30 days** throughout the discharge and analyzed for the pollutants currently listed in Section C of this permit. The results will be compiled in a report and submitted to the NFWB within two weeks of the completion of the analysis.
- A monthly flow report will be submitted with the results which details the daily discharge volume transported from the site.
- All standards and limits contained in the existing permit and the NFWB Regulations Part 1960 shall be met.
- The NFWB will be notified 24 hrs. in advance of the first delivery by phone at 283-9770, ext 206.
- This modification is effective June 14, 2007 through September 14, 2007 at which time the permit reverts to the existing conditions.

File: I:\Admin\winword\Zaepfel\memos 07\Attachment #1 Indust.Weld .

APPENDIX D

DOCUMENTATION FOR ASPHALT CRACK SEALANT AND SEAL COATING MATERIALS

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 31
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.A.3
PAGE NUMBER	02743-2
ITEM:	Crack Master-Supreme hot pour Crack Sealant
SUBMITTAL TYPE:	A - Test Results and/or Certificates ***B - Manufacturer's Literature or Data*** C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/23/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Dan Lalich Date 7/23/07

SealMaster®

Pavement Products & Equipment

CrackMaster® Supreme

Hot Pour Crack Sealant

SMT - 190

Revised: 6/03

1. PRODUCT NAME
CrackMaster Supreme
Hot Pour Crack Sealant

2. MANUFACTURER

SealMaster
2520 S. Campbell St.
Sandusky, OH 44870
Phone: 800-395-7325
Fax: 419-626-5477
www.sealmaster.net

Additional Plant Locations: SealMaster has a nationwide network of manufacturing and distribution facilities.

Phone us at 1-800-395-7325 or visit our website at www.sealmaster.net to find the location near you.

3. PRODUCT DESCRIPTION & BENEFITS

CrackMaster Supreme is a single component, hot-applied, rubberized asphalt crack and joint sealant. CrackMaster Supreme is specially formulated for both direct fire and oil-jacketed melters. It is heat stabilized to withstand temperatures up to 450°F without experiencing polymer degradation. When melted and properly applied it forms a resilient crack sealant for both asphaltic and cementatious pavements. CrackMaster Supreme meets and exceeds ASTM-D6690 Type II.

Basic Uses: CrackMaster Supreme is designed to seal expansion joints, longitudinal and transverse cracks, joints between concrete and asphalt shoulders, and random cracks in both asphalt and concrete pavements.

Composition: As supplied. CrackMaster Supreme is supplied in solid blocks comprised of heat stablized polymers and asphalt.

Sizes: CrackMaster Supreme is supplied in 50 lb. cardboard cartons containing two 25 lb. blocks of material per carton.

Color: Black.

Limitations: Do not overheat material. Cracks must be free from moisture prior to application.

4. TECHNICAL DATA

CrackMaster Supreme meets the following material requirements when tested in accordance with ASTM D5167, ASTM D5249, ASTM D5329, ASTM D5-97, and ASTM D36-95. (see chart below).

Environmental Considerations: CrackMaster Supreme is considered a non-hazardous material.

5. INSTALLATION

Proper surface preparation will facilitate adequate adhesion and consequently the maximum service life of the sealant. The crack must be free from moisture, dust, and loose aggregate. Routing or wire brushing are preferred methods followed by a compressed air heat lance immediately prior to sealing. The substrate and air temperature must be above 40°F.

Methods: CrackMaster Supreme may be melted in direct fired or oil jacketed melters. Carefully insert blocks of material (with plastic bag) into melting equipment with agitator turned off. Load material slowly to avoid splashing. After the initial load of material has reached the recommended pouring temperature (390-410°F), fresh material may be added as sealant is used. Melt only enough material that will be used the same day. Avoid overheating material. Excessive heat could cause material to gel in the equipment or fail in crack and joints. A significant viscosity increase accompanied by stringiness signals the approach of gelation. If this occurs, immediately remove the material from the melter and dispose of it.

IMPORTANT: Protective apparel is recommended with application of CrackMaster Supreme. The extremely hot material will cause severe burns on contact with skin. OSHA Safety Regulations require workers to wear the following types of safety attire (see current OSHA/Safety Regulations for additional information): Hard hat with face shield; long sleeved shirt buttoned at the wrist; heat resistant gloves; long, cuffless pants; and safety toed work boots. Make certain all area around melter is clear of all debris and flammable materials. Avoid breathing vapors. Use with adequate ventilation.

Mixing Procedures: Use material as supplied. Do not blend with other materials. After CrackMaster Supreme is melted it should be agitated or recirculated.

Application: Apply heated CrackMaster Supreme using either a pump and wand system or a pour pot. For best results the sealant depth to width ratio should not exceed 2 to 1 (i.e. 2-inches deep to 1-inch wide). The cooled sealant

Chemical & Physical Analysis

Recommended Application Temperature	390 - 410°F
Maximum Heating Temperature	450°F
Penetration (150 g/5 sec.)	40
Cone Penetration at 25°C	90 Max.
Flow at 60°C, mm	3 Max.
Softening Point	205°F Min.
Resiliency, %	60% Min.
Bond 0°F	(1" Mandrel) - PASS
Bond, non-immersed	PASSES 3 cycles at 50% ext. at -29°C
Specific Gravity	1.02
Asphalt Compatibility	PASSES

CrackMaster- Supreme
Hot Pour Crack Sealant

height should not exceed 1/8" above surrounding pavement. Using a squeegee or squeegee, band the material 2 to 3 inches wide over the crack.

Estimating Material Requirements: Use the following chart as a guideline for estimating material requirements (based upon pounds of material needed for 100 feet of cracks):

Crack Width	Depth	lbs/100feet
3/8"	3/8"	6.2 lbs.
3/8"	1/2"	8.3 lbs.
1/2"	1/2"	11.1 lbs.
1/2"	1"	22.2 lbs.
3/4"	1/2"	16.6 lbs.
3/4"	3/4"	25.00 lbs.

The above coverage rates are only a guideline. Actual material usage may vary due to width of application and thickness of material above pavement surfaces.

Precautions: Cracks must be free from moisture, dust, dirt, and debris. Both substrate and air temperature must be above 40°F. Keep boxes of material dry during storage. Do not store in direct sunlight.

6. AVAILABILITY & COST

Availability: CrackMaster Hot Pour Crack Sealants are supported by a nationwide network of SealMaster facilities along with a national and international network of professional applicators.

Cost: Cost information can be obtained from a local SealMaster CrackMaster applicator. Contact SealMaster for the CrackMaster representative in your area.

7. WARRANTY

SealMaster industries warrants that CrackMaster Supreme meets the chemical composition and performance requirements set forth in section 4. Liability to the buyer or user of this product is limited to the replacement value of the product only.

8. TECHNICAL SERVICES

Manufacturer: Complete product specifications, material safety data sheets, and technical assistance is available from SealMaster.

Professional Applicator: Your local CrackMaster applicator is available to provide on-site inspections and recommendations to meet your specific needs.

10. FILING SYSTEMS

- SealMaster Online Specification at www.sealmaster.net
- Complete SealMaster Product and Equipment Catalog Available
- Sweet's Catalog
- Sweet's CD
- Sweet's Online
- Sweet's Directory

The statements made on this specification sheet are believed to be true and accurate and are intended to provide a guide for approved application practices. As workmanship, weather, construction, condition of pavement, tools utilized, and other variables affecting results are all beyond our control, the manufacturer warrants only that the material conforms to product specifications and any liability to the buyer or user of this product is limited to the replacement value of the product only. The manufacturer expressly disclaims any implied warranties of merchantability or fitness for a particular purpose. Warranty is void on multi-coat applications if material made by other manufactures is used with this product.

Form No.: SMT-190
Revised: 6/03
Supersedes: SMT-13 (4/99), SMT-190 (10/01)

SealMaster Industries, Inc.
2520 South Campbell St.
Sandusky, OH 44870

Phone: 1-800-365-7325
FAX: 1-419-625-6477

www.sealmaster.net

SealMaster®
Pavement Products & Equipment

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 29
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.A.3
PAGE NUMBER	02743-2
ITEM:	Seal Coating (CRS-2 asphalt emulsion)
SUBMITTAL TYPE:	A - Test Results and/or Certificates ***B - Manufacturer's Literature or Data*** C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/20/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVoie Date 7/20/07

MIDLAND ASPHALT MATERIALS INC.

640 Young Street • P O Box 388 • Tonawanda, NY 14151-0388 • (716) 692-0730 • Fax: (716) 692-0613

July 19, 2007

Mr. Ted Wertz
Mactec Engineering

Re: Olin Project OU3, Sevenson Job No. E954
Buffalo Ave., Niagara Falls, NY

Dear Mr. Wertz,

Midland Asphalt is furnishing and applying CRS-2 asphalt emulsion on the above referenced project as a subcontractor to Yarussi Contracting. CRS-2 emulsion is used in conjunction with the surface treating portion of the contract. We manufacture NYSDOT certified emulsion, material designation 702-4101, grade CRS-2. Our emulsion is manufactured at our Tonawanda, N.Y. facility, NYSDOT plant No. 30502 and meets or exceeds the requirements as specified in the NYSDOT Standard Specification, Construction and Material Manual dated January 2, 2002.

If you need any further information please do not hesitate to call.

Sincerely,

Tim McNally
Operations Manager

TABLE 702-6
CATIONIC ASPHALT EMULSIONS

TYPE	RAPID SETTING				MEDIUM SETTING				SLOW SETTING				QUICK SETTING		Polymer Modified RAPID SETTING		Polymer Modified QUICK SETTING	
MATERIAL DESIGNATION	702-4001		702-4101		702-4201		702-4301		702-4401		702-4501		702-4601		702-4701		702-4801	
GRADE	CRS-1		CRS-2		CMS-2		CMS-2h		CSS-1		CSS-1h		CQS-1h		CRS-1p		CQS-1p	
TEST	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
on Emulsion:																		
Viscosity, Saybolt Furol,																		
25° C, second	–	–	–	–	–	–	–	–	20	100	20	100	20	100	–	–	20	100
50° C, second	20	100	100	400	50	450	50	450	–	–	–	–	–	–	20	100	–	–
Storage Stability Test, 1 Day																		
(Difference in % Residue)	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1	–	1
Classification Test	Passes		Passes		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Particle Charge Test	Positive		Positive		Positive		Positive		Positive[1]		Positive[1]		Positive[1]		Passes Positive[1]		Positive[1]	
Sieve Test, %	–	0.10	–	0.10	–	0.10	–	0.10	–	0.10	–	0.10	–	0.10	–	0.10	–	0.10
Cement Mixing	–	–	–	–	–	–	–	–	–	2.0	–	2.0	–	–	–	–	–	–
Demulsibility (ASTM D 244)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	–	–	–
Ring and Ball Softening Point[2] °C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	57	–
Polymer Content, %	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	3	–
Residue by Distillation, %	60	–	65	–	65	–	65	–	57	–	57	–	62	–	60[3]	–	62[3]	–
Oil Distillate,																		
Volume Total Emulsion, %	–	3	–	3	–	12	–	12	–	–	–	–	–	–	–	3	–	–
on Residue from Distillation																		
Penetration, 25° C, 100 g, 5 second	100	200	100	200	100	250	40	110	100	250	40	90	40	90	100	200	40	90
on Asphalt Base for Emulsion:																		
Penetration, 25° C, 100 g, 5 second	100	200	100	200	100	200	60	100	100	200	60	100	60	100	100	200	60	100
Solubility or Trichloroethylene, %	99.0	–	99.0	–	99.0	–	99.0	–	99.0	–	99.0	–	99.0	–	99.0	–	99.0	–
Ductility, 25° C, 5 cm/min., cm	100	–	100	–	100	–	50	–	100	–	50	–	50	–	100	–	50	–
Flash Point, °C	177	–	177	–	177	–	225	–	177	–	225	–	225	–	177	–	225	–
Typical Application: [4]	Spray Patch, P. M.		S. T., P. M.		Cold Mixes, P. M.		Cold Mixes, P. M.		B.& S. S.		B.& S. S.		Quick-Set Slurry		Paver-Placed S. T.		Micro-Surfacing Treatment	
Suggested Temperature Range:																		
Mixing, °C	–	–	–	–	40 - 75		40 - 75		25 - 65		25 - 65		25 - 65					
Spraying, °C	25 - 60		55 - 75		55 - 75		55 - 75		25 - 65		25 - 65		–	–				

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 29B
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.A.3
PAGE NUMBER	02743-2
ITEM:	Seal Coating (CRS-2 asphalt emulsion), Letter from Baughman's Magic Seal, detailing additional information of the seal coating mixture and rate of application.
SUBMITTAL TYPE:	A - Test Results and/or Certificates ***B - Manufacturer's Literature or Data*** C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/25/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVal Date 7/25/07

P.O. BOX 232
SANBORN
NEW YORK 14132
TELEPHONE: (716) 731-5006

BAUGHMAN'S MAGIC SEAL

July 25, 2007

Mr. Ted Wertz
MACTEC Engineering and Consulting, Inc.

Re: Olin Project OU3, Sevenson Job No.E954
Buffalo Avenue, Niagara Falls, NY

Dear Mr. Wertz,

On Monday July 23, 2007 Magic Seal applied two pavement seal coats for the above referenced project. The seal coat mixture was composed of the previously approved asphalt emulsion and aggregate Type 1 Mix in accordance with Table 405-1 of the NYSDOT Standard Specifications dated May 4, 2006. In addition the mixture contained a 1 percent latex additive. The seal coats were applied at a rate of at least 1.4 L/m^2 but not more than 2.3 L/m^2 as specified in section 405-3.07 of the NYSDOT Standard Specifications.

If you need any further information please contact me.

Sincerely,

DONALD H BAUGHMAN
OPERATIONS MANAGER

DHB:cla

APPENDIX E

ADDENDUM 1 TO IWS OPERATIONS AND MAINTENANCE MANUAL

ADDENDUM 1 TO
OPERATIONS AND MAINTENANCE MANUAL
Industrial Welding Site
Niagara Falls, New York

Prepared for:

Olin Corporation

Environmental Remediation Group

Charleston, Tennessee

Prepared by:

MACTEC Engineering and Consulting, P.C.

In Association With

MACTEC Engineering and Consulting, Inc.

Kennesaw, Georgia

February 15, 2008

MACTEC Project No. 6100-07-0005

INTRODUCTION

The following paragraph supplements Section 1.0 of the O&M Manual dated September 15, 2000

This document is an addendum to the "Operations and Maintenance (O&M) Manual, Industrial Welding Site", prepared for Olin Corporation by Law Engineering and Environmental Services, P.C., dated September 15, 2000. The O&M Manual was relevant to Industrial Welding Site, Operable Unit 1 (IWS OU 1). This addendum serves as an update to the O&M Manual and presents the requirements for operation and maintenance of the remedial construction performed at the Packard Road Site, Operable Unit 3 (OU 3) of the Industrial Welding Inactive Hazardous Waste Site. It has been prepared to fulfill the requirements of the NYSDEC in their March 21, 2007 approval letter for the "Final Remedial Design Report, Industrial Welding Site – Operable Unit 3 (Packard Road Site)," dated March 9, 2007. The O&M activities for the Packard Road Site will be performed in conjunction with the activities performed for IWS OU 1. The results of O&M activities for both operable units will be recorded and reported together as a single Industrial Welding Site.

PROJECT LOCATION

The following paragraph supplements Section 1.1 of the O&M Manual dated September 15, 2000.

The Packard Road Site is bounded by parking lots adjacent to Buffalo Avenue to the south, and Veterans Drive (Packard Road) and Gill Creek to the east in the City of Niagara Falls, New York. The Packard Road Site is immediately south of the IWS OU 1 which was remediated in 1999. The Packard Road Site comprises approximately 3.7 acres within the limits of the new asphalt cover. The Site Plan, provided as Figure 1.2, shows the project location and depicts the locations of key site O&M components for the Packard Road Site.

OPERATIONS AND MAINTENANCE ACTIVITIES

The following paragraph supplements Section 1.2 of the O&M Manual dated September 15, 2000.

Components of the Packard Road Site remedial construction and O&M activities addressed by this Addendum 1 to the O&M Manual are:

- Perimeter security fencing

- Asphalt concrete cover system
- Stormwater drainage system
- Storm drain sampling and analysis

PERIMETER SECURITY FENCING

The following paragraph supplements Section 2.0 of the O&M Manual dated September 15, 2000.

Chain link fencing and a locked gate control access to the Packard Road Site and adjacent IWS. The locked gate is located at the site entrance along Veterans Drive where indicated on Figure 1.2. Routine maintenance and inspection of the fencing will be performed in accordance with the applicable procedures presented in Section 2.0.

ASPHALT CONCRETE COVER SYSTEM

The following paragraphs supplement Section 4.0 of the O&M Manual dated September 15, 2000.

The constructed asphalt concrete cover on the Packard Road Site consists of a 6-inch minimum thickness aggregate base course, overlain by a 2 ½-inch thick asphalt binder course and a 1-inch thick asphalt concrete surface course.

Routine maintenance and inspection of the asphalt cover will be performed in accordance with the applicable procedures presented in Section 4.0, with the following modifications:

- The existing IWS asphalt cover was repaired and seal coated as part of the remedial construction in 2007. Depending on results of future inspections, seal coating may not be required for several years (see below).
- The new asphalt cover constructed in 2007 should be seal coated in 2008. The seal coat should last for approximately 3 years.

Olin will evaluate the need and schedule for maintenance and perform the work accordingly.

STORMWATER DRAINAGE SYSTEM

The following paragraphs supplement Section 4.0 of the O&M Manual dated September 15, 2000.

The Packard Road Site stormwater (surface water) drainage system is comprised of five precast concrete drop inlets with drainage grates, one precast concrete junction manhole (MH 2), a headwall and approximately 975 linear feet of 24-inch and 18-inch reinforced concrete pipes (RCP). A 24-inch RCP was installed under Veterans Drive to transport stormwater from the manhole to the headwall outlet at Gill Creek. Riprap (rock outlet protection) was installed at the headwall outlet on the bank of Gill Creek.

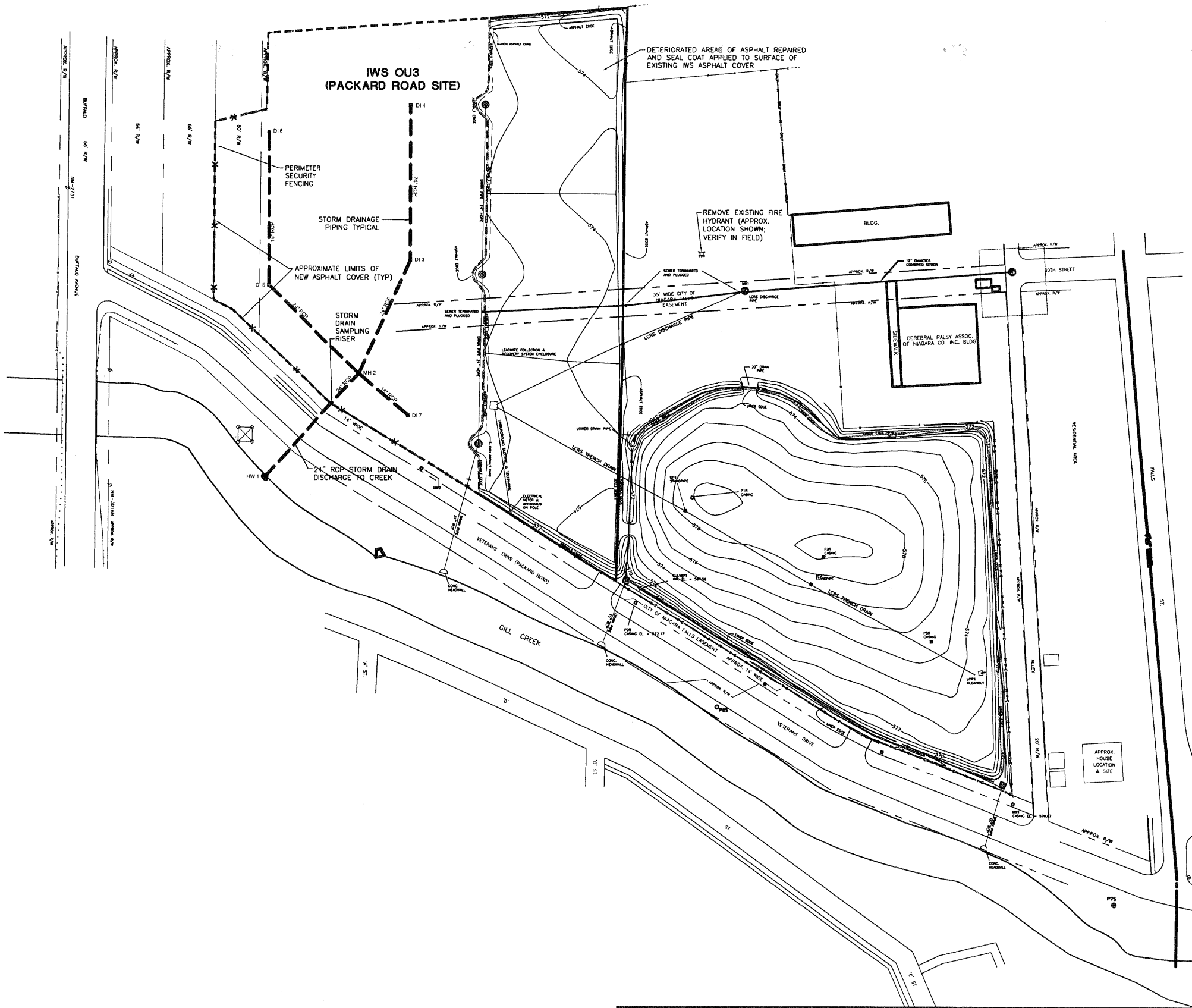
Routine maintenance and inspection of the surface water drainage system will be performed in accordance with the applicable procedures presented in Section 3.0.

STORM DRAIN SAMPLING AND ANALYSIS

The following paragraphs supplement Section 6.3 of the O&M Manual dated September 15, 2000.

A grab sample of water in the storm drainage system for the Packard Road Site will be collected semi-annually from a sample point located along the alignment of the 24-inch RCP approximately 50 feet southeast of MH 2 near the eastern fence line. The sample point consists of a 6-inch diameter PVC sampling riser that penetrates the top of the 24-inch RCP, allowing a point of access for the introduction of sampling equipment. Figure 1.2 shows the location of the storm drain sampling point.

Storm drain sampling and analytical testing will be in accordance with the procedures discussed in Section 6.3.



LEGEND

- V-C — V-C = VINYL-COATED CHAINLINK FENCE INSTALLED OCT. 1999
- GALV — GALV = GALVANIZED CHAINLINK FENCE INSTALLED OCT. 1999
- = OTHER EXISTING CHAINLINK FENCE
- = DITCH WITH FLOW DIRECTION
- P3R OR MW1 = PIEZOMETER IDENTIFICATION OR MONITORING WELL IDENTIFICATION
- STANDPIPE = STANDPIPE FOR LEACHATE COLLECTION & RECOVERY SYSTEM
- R/W = RIGHT-OF-WAY
- = LIMIT OF NEW ASPHALT COVER
- = LIMIT OF SEAL COATING

NOTE: SOURCE OF SITE PLAN BASE MAP: RECORD DRAWINGS OF IWS WORK, SEPT. 2000.

SCALE IN FEET

0 150 120

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC
MACTEC Engineering and Consulting, Inc.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

OVERALL SITE PLAN

JOB NO. 6300-06-0001 FIGURE 1.2

PREPARED BY/DATE C. Budsock 12/11/07
CHECKED BY/DATE Stephen A. Jarvis 12/11/07

APPENDIX F

RESULTS OF AIR MONITORING SAMPLING AND ANALYSIS

GALSON
LABORATORIES

Mr. Mark Nicklas
Sevenson Environmental
2749 Lockport Road
Niagara Falls, NY 14305

June 14, 2007

DOH ELAP# 11626 Account# 10127 Login# L153754

Dear Mr. Nicklas:

Enclosed are the analytical results for the samples received by our laboratory on June 05, 2007. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

The samples submitted for BHC Compounds were subcontracted to Clayton Group Services, Inc. Their report is enclosed in its entirety.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Amanda Frateschi at (877) 482-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

F. Joseph Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Sevenson Environmental Services
Site : OLIN-OU3-Packard Road
Project No. : OLIN-OU3

Date Sampled : 31-MAY-07 - 01-JUN-07 Account No.: 10127
Date Received : 05-JUN-07 Login No. : L153754
Date Analyzed : 11-JUN-07
Report ID : 540002

Mercury

Sample ID	Lab ID	Air Vol liter	Filter ug	Tube ug	Total ug	Conc mg/m3
N-2260806657/N-1	L153754-11	65	<0.04	<0.06	<0.06	<0.0009
S-2260806652/S-8	L153754-12	65	<0.04	<0.06	<0.06	<0.0009
E-2260806651/E-6	L153754-13	67	<0.04	<0.06	<0.06	<0.0009
W-2260806649/W-10	L153754-14	65	<0.04	<0.06	<0.06	<0.0009
BL-2213407212/BL-7	L153754-15	NA	<0.04	<0.06	<0.06	NA
N-2213407321/N-18	L153754-16	84	<0.04	<0.06	<0.06	<0.0007
S-2213407524/S-5	L153754-17	84	<0.04	<0.06	<0.06	<0.0007
E-2260806650/E-9	L153754-18	84	<0.04	<0.06	<0.06	<0.0007
W-2213407193/W-20	L153754-19	84	<0.04	<0.06	<0.06	<0.0007
BL-2260806654/BL-15	L153754-20	NA	<0.04	<0.06	<0.06	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.06 ug
Analytical Method : mod. NIOSH 6009;CVAA;FILTER-TUBE
OSHA PEL (TWA) : 0.1 mg/m3 Ceiling
Collection Media : Filter & Tube

Submitted by: PWL
Approved by : LLS
Date : 12-JUN-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Sevenson Environmental Services
Site : OLIN-OU3-Packard Road
Project No. : OLIN-OU3

Date Sampled : 31-MAY-07 - 01-JUN-07 Account No.: 10127
Date Received : 05-JUN-07 Login No. : L153754
Date Analyzed : 06-JUN-07
Report ID : 539272

Total Dust

Sample ID	Lab ID	Air Vol m3	Total mg	Conc mg/m3
TOTAL DUST-N-350598	L153754-21	0.325	<0.05	<0.2
TOTAL DUST-S-350602	L153754-22	0.325	0.114	0.35
TOTAL DUST-E-350614	L153754-23	0.335	0.182	0.54
TOTAL DUST-W-350607	L153754-24	0.325	<0.05	<0.2
TOTAL DUST-BL-350606	L153754-25	NA	<0.05	NA
TOTAL DUST-N-350605	L153754-26	0.420	<0.05	<0.1
TOTAL DUST-S-350599	L153754-27	0.420	0.103	0.25
TOTAL DUST-E-350603	L153754-28	0.420	<0.05	<0.1
TOTAL DUST-W-350613	L153754-29	0.420	<0.05	<0.1
TOTAL DUST-BL-350600	L153754-30	NA	<0.05	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.05 mg
Analytical Method : NIOSH 0500; GRAV
OSHA PEL (TWA) : PNOR 15 mg/m3
Collection Media : PVC PW

Submitted by: pah
Approved by : KRK
Date : 11-JUN-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : Sevenson Environmental Services
Site : OLIN-OU3-Packard Road
Project No. : OLIN-OU3

Date Sampled : 31-MAY-07-01-JUN-07 Account No.: 10127
Date Received: 05-JUN-07 Login No. : L153754
Date Analyzed: 06-JUN-07 - 11-JUN-07

Unless otherwise noted below, all quality control results associated with the samples were within established control limits and/or do not adversely affect the sample results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

L153754 (Report ID: 539272) : PNOR = Particulates Not Otherwise Regulated.
SOPs: ic-dust(4)

L153754 (Report ID: 540002) : SOPs: im-hg(8), im-hgair(3)

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

June 11, 2007

Shelly Krause
GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057-

Bureau Veritas Work Order No. 07060249

Reference: L153754

Dear Shelly Krause:

Bureau Veritas North America, Inc. received 10 samples on 6/6/2007 for the analyses presented in the following report.

Enclosed is a copy of the Chain-of-Custody record, acknowledging receipt of these samples. Please note that any unused portion of the samples will be discarded 30 days after the date of this report, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact a Client Services Representative at (800) 806-5887.

Sincerely,

Wendy Lesniak
Client Services Representative

cc:

BUREAU VERITAS

CASE NARRATIVE

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754

Work Order No 07060249

Unless otherwise noted below, all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results.

Unless otherwise indicated below, the industrial hygiene results have not been blank corrected.

Below is the statistical precision and accuracy information for the various compounds analyzed by EPA TO-10A:

alpha-BHC
Number of samples =40
Recovery % =90
Relative Standard Deviation % =8.89

beta-BHC
Number of samples =40
Recovery % =98.55
Relative Standard Deviation % =9.62

delta-BHC
Number of samples =40
Recovery % =83.8
Relative Standard Deviation % =11.22

gamma-BHC
Number of samples =44
Recovery % =93.4
Relative Standard Deviation % =7.35

ANALYTICAL RESULTS

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754 **Work Order No:** 07060249

Sample Identification: N-BHC-5-31-07

Lab Number: 001A **Date Sampled:** 5/31/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 650

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007

Sample Identification: S-BHC-5-31-07

Lab Number: 002A **Date Sampled:** 5/31/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 650

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007

ANALYTICAL RESULTS

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754 **Work Order No:** 07060249

Sample Identification: E-BHC-5-31-07

Lab Number: 003A **Date Sampled:** 5/31/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 670

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000075	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000075	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000075	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000075	--	0.05	EPA TO-10A	06/08/2007

Sample Identification: W-BHC-5-31-07

Lab Number: 004A **Date Sampled:** 5/31/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 650

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000077	--	0.05	EPA TO-10A	06/08/2007

ANALYTICAL RESULTS

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754 **Work Order No:** 07060249

Sample Identification: BL-BHC-5-31-07

Lab Number: 005A **Date Sampled:** 5/31/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** NA

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007

Sample Identification: N-BHC-6-1-07

Lab Number: 006A **Date Sampled:** 6/1/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 840

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007

ANALYTICAL RESULTS

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754 **Work Order No:** 07060249

Sample Identification: S-BHC-6-1-07

Lab Number: 007A **Date Sampled:** 6/1/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 840

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007

Sample Identification: E-BHC-6-1-07

Lab Number: 008A **Date Sampled:** 6/1/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 840

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007

ANALYTICAL RESULTS

Date: *11-Jun-07*

Client: GALSON LABORATORIES

Project: L153754 **Work Order No:** 07060249

Sample Identification: W-BHC-6-1-07

Lab Number: 009A **Date Sampled:** 6/1/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** 840

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	06/08/2007

Sample Identification: BL-BHC-6-1-07

Lab Number: 010A **Date Sampled:** 6/1/2007

Sample Type PUF Tube **Date Received:** 6/6/2007

Analyst BVP **Air Volume (L):** NA

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
alpha-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
beta-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
delta-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007
gamma-BHC	<0.05	--	--	0.05	EPA TO-10A	06/08/2007

General Notes:
<: Less than the indicated reporting limit (RL).
--: Information not available or not applicable.
Back sections (if applicable) were checked and showed no significant breakthrough unless otherwise noted.

Clayton

0706249

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057-9672
Tel: 315-437-5227
888-432-LABS(5227)
Fax: 315-437-0571
www.galsonlabs.com

Check if change of address ☐
New Client ? yes ☐ no ☐

Report To : Shelly Krause
Galson Laboratories
6601 Kirkville Road
East Syracuse, NY 13057
Phone No. : 888-432-5227
Client Account # :

Invoice To : Pamela Weaver
Galson Laboratories
6601 Kirkville Road
East Syracuse, NY 13057
Phone No. : 888-432-5227
Fax No. 315-437-0571

Site Name :

Project : L153754

Sampled By :

Need Results By:	(surcharge)
☑ 14 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

Verbal Authorization :
Purchase Order No. : 10127
Credit Card No. : Card Holder Name : Exp. :

Email/Fax Results To : Shelly Krause Fax No. : 315-437-0571
Email Address : skrause@galsonlabs.com

Sample Identification	Date Sampled	Collection Medium	*Air Volume (liters)/ Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
✓ N-BHC-5-31-07	5/31/2007	PUF	650	EPA TO-10A		
✓ S-BHC-5-31-07	5/31/2007	PUF	650	EPA TO-10A		
✓ E-BHC-5-31-07	5/31/2007	PUF	670	EPA TO-10A		
✓ W-BHC-5-31-07	5/31/2007	PUF	650	EPA TO-10A		
✓ BL-BHC-5-31-07	5/31/2007	PUF	NA	EPA TO-10A		
✓ N-BHC-6-1-07	6/1/2007	PUF	840	EPA TO-10A		
✓ S-BHC-6-1-07	6/1/2007	PUF	840	EPA TO-10A		
✓ E-BHC-6-1-07	6/1/2007	PUF	840	EPA TO-10A		
✓ W-BHC-6-1-07	6/1/2007	PUF	840	EPA TO-10A		
✓ BL-BHC-6-1-07	6/1/2007	PUF	NA	EPA TO-10A		

BHC Compounds only per Tonya 6/6/07 via

Page 12 of 16 Report Reference:1 Generated:14-JUN-07 18:00

☑ **If you do not want a Laboratory Blank added please check box. If blanks are not submitted or box is not checked, our policy states that a laboratory blank will be added for each analyte and it will be charged at normal rate.**

Comments:

Please provide an uncertainty statement in accordance with AIHA LQAP policy document Section 2A.5.4.3. Need results by 6/26/07. Rush charges are not authorized.

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Brian Caruso	Brian Caruso	6/5/07 5:00pm
Received by LAB :	SANDRA F LUNDAL		6/6/07 0830

Login # :

***Collection Time(min) X LPM = Air Vol. (L)**

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East Syracuse, NY 13057
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888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☒ no

Report To : Mark Nicklas E954
Sevenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Invoice To : Mark Nicklas
Sevenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Site Name : OLIN-003-Packard Road Project : OLIN-003 Sampled By : Ted Wertz

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ Samples submitted using the FreePumpLoan™ Program. ☐ Samples submitted using the FreeSamplingBadges™ Program.

Client Account No. :
Purchase Order No. :
Credit Card No. : Card Holder Name : Exp : 17 to 18

Email / Fax Results To :
Email Address : twertz@mactec.com Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
N BHC-5-31-07	5-31-07	Tube, Pufs only	650	325	BHCs	NIOSH 5502	
S BHC-5-31-07	5-31-07	Tube, Puf	650	325	BHC's	NIOSH 5502	17
E BHC-5-31-07	5-31-07	Tube, Puf	670	335	BHCs	NIOSH 5502	
W BHC-5-31-07	5-31-07	Tube, Puf	650	325	BHCs	NIOSH 5502	
BL BHC-5-31-07	5-31-07	Tube, Puf	field blank	n/a	BHCs	NIOSH 5502	
N 2260806657	5-31-07	Tube, Carulite 226-172 (10th inlet)	65	325	Mercury	NIOSH 6009	18
S 2260806652	5-31-07	Tube, Carulite	65	325	Mercury	NIOSH 6009	
E 2260806651	5-31-07	Tube, Carulite	67	335	Mercury	NIOSH 6009	
W 2260806649	5-31-07	Tube, Carulite	65	325	Mercury	NIOSH 6009	
BL 2213407212	5-31-07	Tube, Carulite	field blank	n/a	Mercury	NIOSH 6009	

Page 13 of 16 Report Reference: Generated: 14-JUN-07 13:00

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area:

Comments:

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz		6-4-07
Received by LAB :	M. Krause	M. Krause	6/5/07 1030

Login # : L153754 ~~Samples received after 3pm will be considered as next day's business.~~ * sample collection time X LPM = Air Vol.

LAB ORIGINAL

GALSON LABORATORIES
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East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☒ no

Report To : Mark Nicklas E954
Sevenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Invoice To : Mark Nicklas
Sevenson Environmental
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Site Name : OLIN-003-Packard Road Project : OLIN-003 Sampled By : Ted Wertz

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ Samples submitted using the FreePumpLoan™ Program. ☐ Samples submitted using the FreeSamplingBadges™ Program.

Client Account No. :
Purchase Order No. :
Credit Card No. : Card Holder Name : Exp. :

Email / Fax Results To :
Email Address : twertz@mactec.com Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
Total Dust-N-350590	5-31-07	Filter 2pc PVC	325	325	NIOSH 0500 Total Dust	NIOSH 0500	
Total Dust-S-350602	5-31-07	Filter ↓	325	325	↓	↓	
Total Dust E-350614	5-31-07	Filter ↓	335	335	↓	↓	
Total Dust-W-350607	5-31-07	Filter ↓	325	325	↓	↓	
Total Dust-BL-350606	5-31-07	Filter ↓	field blank	n/a	↓	↓	
Mercury-N-1	5-31-07	Filter 3pc MCE	65	325	Mercury NIOSH 6009	NIOSH 6009	
Mercury S-8	5-31-07	Filter ↓	65	325	↓	↓	
Mercury E-6	5-31-07	Filter ↓	67	335	↓	↓	
Mercury W-10	5-31-07	Filter ↓	65	325	↓	↓	
Mercury BL-7	5-31-07	Filter ↓	field blank	n/a	↓	↓	

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area:

Comments:

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz	[signature]	6-4-07
Received by LAB :	M. Krause	M. Krause	6/5/07 1030

Login # : L153754 **Samples received after 3pm will be considered as next day's business.** *** sample collection time X LPM = Air Vol.**

LAB ORIGINAL

GALSON LABORATORIES
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Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☒ no

Report To : Mark Nicklas -E954
Seven Son Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Invoice To : Mark Nicklas
Seven Son Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Site Name : OLIN-003-Packard Rd. Project : OLN-003 Sampled By : Ted Wertz

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ Samples submitted using the FreePumpLoan™ Program. ☐ Samples submitted using the FreeSamplingBadges™ Program.

Client Account No. :
Purchase Order No. :
Credit Card No. : Card Holder Name : Exp. :

Email / Fax Results To :
Email Address : twertz@mactec.com Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
N-BHC-6-1-07	6-1-07	Tube, Puf (Puff ends only)	840	420	BHCs	NIOSH 5502	
S-BHC-6-1-07	6-1-07	Tube, Puf	840	↓	BHCs	NIOSH 5502	
E-BHC-6-1-07	6-1-07	Tube, Puf	840	↓	BHCs	NIOSH 5502	
W-BHC-6-1-07	6-1-07	Tube, Puf	840	↓	BHCs	NIOSH 5502	
BL-BHC-6-1-07	6-1-07	Tube, Puf	Field blank	n/a	BHCs	NIOSH 5502	
N-2213407321	6-1-07	Tube, Carulite (226-57-1-A only)	84	420	Mercury	NIOSH 6009	
S-2213407524	6-1-07	Tube, Carulite	84	↓	Mercury	NIOSH 6009	
~~E-2260806655~~	~~6-1-07~~	~~Tube, Carulite~~			~~Mercury~~	~~NIOSH 6009~~	
W-2213407193	6-1-07	Tube, Carulite	84	↓	Mercury	NIOSH 6009	
E-2260806650	6-1-07	Tube, Carulite	84	↓	Mercury	NIOSH 6009	
BL-2260806654	6-1-07	Tube, Carulite	Field blank	n/a	Mercury	NIOSH 6009	

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area:

Comments: Contact Ted Wertz for any questions 770 490 4772

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz		6-4-07 1200
Received by LAB :	M. Krause	M. Krause	6/5/07 1030

Login # : L53754

Samples received after 3pm will be considered as next day's business.

*** sample collection time X LPM = Air Vol.**

LAB ORIGINAL

Page 15 of 16 Report Reference: Generated: 14-JUN-07 18:00

GALSON LABORATORIES
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East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☒ no

Report To : Mark Nicklas E954
Sevenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284-0431
Fax No. : 716 284 7645

Invoice To : Mark Nicklas
Sevenson Environmental Inc
2749 Lockport Rd.
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Site Name : OLN-003-Packard Rd Project : OLN-003 Sampled By : Ted Wertz

19

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ Samples submitted using the FreePumpLoan™ Program.
☐ Samples submitted using the FreeSamplingBadges™ Program.

Client Account No. :
Purchase Order No. :
Credit Card No. : Card Holder Name : Exp. :

Email / Fax Results To :
Email Address : twertz@mactec.com Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
Total Dust-N - 350605	6-1-07	2pc PW PVC Filter	420	420	Total Dust	NIOSH 0500	
Total Dust-S - 350599	6-1-07	Filter	420	↓	↓	↓	
Total Dust-E - 350603	6-1-07	Filter	420				
Total Dust-W - 350613	6-1-07	Filter	420	↓			
Total Dust-BL-350600	6-1-07	Filter ↓	field blank	n/a	↓	↓	
Mercury -N -18	6-1-07	Filter 3pc vwmce	84	420	Mercury	NIOSH 6009	
Mercury -S -5	6-1-07	Filter	84		↓	↓	
Mercury -E -9	6-1-07	Filter	84				
Mercury -W -20	6-1-07	Filter	84	↓			
Mercury -BL -15	6-1-07	Filter ↓	field blank	n/a	↓	↓	

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area:

Comments:

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz	[signature]	6-4-07 1200
Received by LAB :	m. Krause	m. Krause	6/5/07 @ 1030

Login # : L153754 **Samples received after 3pm will be considered as next day's business.** *** sample collection time X LPM = Air Vol.**

LAB ORIGINAL

GALSON
LABORATORIES

Mr. Mark Nicklas
Sevenson Environmental
2749 Lockport Road
Niagara Falls, NY 14305

July 09, 2007

DOH ELAP# 11626 Account# 10127 Login# L155013

Dear Mr. Nicklas:

Enclosed are the analytical results for the samples received by our laboratory on June 28, 2007. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

The samples submitted for gamma-BHC were subcontracted to Clayton Group Services, Inc. Their report is enclosed in its entirety.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Amanda Frateschi at (877) 482-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

F. Joseph Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 03-JUL-07
Report ID : 542160

Account No.: 10127
Login No. : L155013

Mercury

Sample ID	Lab ID	Air Vol liter	Filter ug	Tube ug	Total ug	Conc mg/m3
MER.-N-19 2213407529	L155013-6	83	<0.04	<0.06	<0.06	<0.0007
MER.-S-13 2213407368	L155013-7	83	<0.04	<0.06	<0.06	<0.0007
MER-E-2 2260806653	L155013-8	83	<0.04	<0.06	<0.06	<0.0007
MER-W-16 2213407208	L155013-9	83	<0.04	<0.06	<0.06	<0.0007
MER-FB-4 2260806648	L155013-10	NA	<0.04	<0.06	<0.06	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.06 ug
Analytical Method : mod. NIOSH 6009;CVAA;FILTER-TUBE
OSHA PEL (TWA) : 0.1 mg/m3 Ceiling
Collection Media : Filter & Tube

Submitted by: PWL
Approved by : crd
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

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East Syracuse, NY 13057
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FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 02-JUL-07 - 03-JUL-07
Report ID : 542185

Account No.: 10127
Login No. : L155013

Client ID : N-6/N-ORBO **Lab ID : L155013-16** **Air Volume : 830 Liter**
Date Sampled : 06/26/07 **Date Analyzed : 07/02/07**

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
Anthracene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(g,h,i)perylene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(e)pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
INDENO-1,2,3-CD-PYRENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(b)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(k)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000058
Chrysene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000052
Benzo(a)pyrene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000058
DIBENZO(A,H)ANTHRACENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
1-Nitropyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000048
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000039
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000057
Phenanthrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Fluorene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000071
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000069

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: ac
Approved by : CXA
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified
LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

LABORATORY ANALYSIS REPORT

GALSON LABORATORIES
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 02-JUL-07 - 03-JUL-07
Report ID : 542185

Account No.: 10127
Login No. : L155013

Client ID : S-7/S-ORBO **Lab ID : L155013-17** **Air Volume : 830 Liter**
Date Sampled : 06/26/07 **Date Analyzed : 07/02/07**

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
Anthracene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(g,h,i)perylene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(e)pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
INDENO-1,2,3-CD-PYRENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(b)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(k)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000058
Chrysene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000052
Benzo(a)pyrene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000058
DIBENZO(A,H)ANTHRACENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
1-Nitropyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000048
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000039
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000057
Phenanthrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Fluorene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000071
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000069

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: ac
Approved by : CXA
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified
LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

LABORATORY ANALYSIS REPORT

GALSON LABORATORIES
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 02-JUL-07 - 03-JUL-07
Report ID : 542185

Account No.: 10127
Login No. : L155013

Client ID : E-10/E-ORBO **Lab ID : L155013-18** **Air Volume : 830 Liter**
Date Sampled : 06/26/07 **Date Analyzed : 07/02/07**

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
Anthracene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(g,h,i)perylene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(e)pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
INDENO-1,2,3-CD-PYRENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(b)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(k)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000058
Chrysene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000052
Benzo(a)pyrene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000058
DIBENZO(A,H)ANTHRACENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
1-Nitropyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000048
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000039
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000057
Phenanthrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Fluorene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000071
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000069

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: ac
Approved by : CXA
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

LABORATORY ANALYSIS REPORT

GALSON LABORATORIES
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 02-JUL-07 - 03-JUL-07
Report ID : 542185

Account No.: 10127
Login No. : L155013

Client ID : W-5/W-ORBO **Lab ID : L155013-19** **Air Volume : 830 Liter**
Date Sampled : 06/26/07 **Date Analyzed : 07/02/07**

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
Anthracene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(g,h,i)perylene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(e)pyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
INDENO-1,2,3-CD-PYRENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
Benzo(b)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000058
Benzo(k)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000047
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000058
Chrysene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000052
Benzo(a)pyrene	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000058
DIBENZO(A,H)ANTHRACENE	0.5	<0.3	<0.3	<0.3	<0.5	<0.00060	<0.000053
1-Nitropyrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000048
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000039
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000057
Phenanthrene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000066
Fluorene	0.4	<0.3	<0.3	<0.3	<0.4	<0.00048	<0.000071
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.00036	<0.000069

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: ac
Approved by : CXA
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
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NS -Not Specified
LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

LABORATORY ANALYSIS REPORT

GALSON LABORATORIES
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 02-JUL-07 - 03-JUL-07
Report ID : 542185

Account No.: 10127
Login No. : L155013

Client ID : FB-8/FB-ORBO **Lab ID : L155013-20** **Air Volume : NA**
Date Sampled : 06/26/07 **Date Analyzed : 07/03/07**

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
Anthracene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Pyrene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Benzo(g,h,i)perylene	0.5	<0.3	<0.3	<0.3	<0.5	NA	NA
Benzo(e)pyrene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
INDENO-1,2,3-CD-PYRENE	0.5	<0.3	<0.3	<0.3	<0.5	NA	NA
Benzo(b)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Benzo(k)fluoranthene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	NA	NA
Chrysene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Benzo(a)pyrene	0.5	<0.3	<0.3	<0.3	<0.5	NA	NA
DIBENZO(A,H)ANTHRACENE	0.5	<0.3	<0.3	<0.3	<0.5	NA	NA
1-Nitropyrene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.3	NA	NA
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	NA	NA
Phenanthrene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Fluorene	0.4	<0.3	<0.3	<0.3	<0.4	NA	NA
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	NA	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: ac
Approved by : CXA
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified
LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.

GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received : 28-JUN-07
Date Analyzed : 05-JUL-07
Report ID : 542229

Account No.: 10127
Login No. : L155013

Total Dust

Sample ID	Lab ID	Air Vol m3	Total mg	Conc mg/m3
TOTAL DUST-N-350601	L155013-11	0.415	<0.05	<0.1
TOTAL DUST-S-350609	L155013-12	0.415	<0.05	<0.1
TOTAL DUST-E-350612	L155013-13	0.415	0.079	0.19
TOTAL DUST-W-350604	L155013-14	0.415	<0.05	<0.1
TOTAL DUST-FB-350610	L155013-15	NA	<0.05	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.05 mg
Analytical Method : NIOSH 0500; GRAV
OSHA PEL (TWA) : PNOR 15 mg/m3
Collection Media : PVC PW

Submitted by: KMP
Approved by : KRK
Date : 06-JUL-07 NYS DOH # : 11626
QC by: Tom Burgess

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m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : Sevenson Environmental Services
Site : OLIN-003-Packard Road
Project No. : OLIN-003

Date Sampled : 26-JUN-07
Date Received: 28-JUN-07
Date Analyzed: 02-JUL-07 - 05-JUL-07

Account No.: 10127
Login No. : L155013

Unless otherwise noted below, all quality control results associated with the samples were within established control limits and/or do not adversely affect the sample results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

L155013 (Report ID: 542160) : SOPs: im-hg(9), im-hgair(3)

L155013 (Report ID: 542185) : SOPs: il-n5506(1)
Total ug corrected for a desorption efficiency of 99%

L155013 (Report ID: 542229) : PNOR = Particulates Not Otherwise Regulated.
SOPs: ic-dust(4)

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

July 06, 2007

Shelly Krause
GALSON LABORATORIES
6601 Kirkville Road
East Syracuse, NY 13057-

Bureau Veritas Work Order No. 07070055

Reference: L155013

Dear Shelly Krause:

Bureau Veritas North America, Inc. received 5 samples on 7/2/2007 for the analyses presented in the following report.

Enclosed is a copy of the Chain-of-Custody record, acknowledging receipt of these samples. Please note that any unused portion of the samples will be discarded 30 days after the date of this report, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact a Client Services Representative at (800) 806-5887.

Sincerely,

Wendy Lesniak
Client Services Representative

cc:

CASE NARRATIVE

Date: *06-Jul-07*

Client: GALSON LABORATORIES

Project: L155013

Work Order No 07070055

Unless otherwise noted below, all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results.

Unless otherwise indicated below, the industrial hygiene results have not been blank corrected.

Please note that there are not enough data points to provide statistical information.

ANALYTICAL RESULTS

Date: *06-Jul-07*

Client: GALSON LABORATORIES

Project: L155013 **Work Order No:** 07070055

Sample Identification: N-BHC-6-26-07

Lab Number: 001A **Date Sampled:** 6/26/2007

Sample Type PUF Tube **Date Received:** 7/2/2007

Analyst BVP **Air Volume (L):** 830

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	07/03/2007

Sample Identification: S-BHC-6-26-07

Lab Number: 002A **Date Sampled:** 6/26/2007

Sample Type PUF Tube **Date Received:** 7/2/2007

Analyst BVP **Air Volume (L):** 830

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	07/03/2007

Sample Identification: E-BHC-6-26-07

Lab Number: 003A **Date Sampled:** 6/26/2007

Sample Type PUF Tube **Date Received:** 7/2/2007

Analyst BVP **Air Volume (L):** 830

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	07/03/2007

ANALYTICAL RESULTS

Date: *06-Jul-07*

Client: GALSON LABORATORIES

Project: L155013 **Work Order No:** 07070055

Sample Identification: W-BHC-6-26-07

Lab Number: 004A **Date Sampled:** 6/26/2007

Sample Type PUF Tube **Date Received:** 7/2/2007

Analyst BVP **Air Volume (L):** 830

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
gamma-BHC	<0.05	<0.000060	--	0.05	EPA TO-10A	07/03/2007

Sample Identification: FB-BHC-6-26-07 BLANK

Lab Number: 005A **Date Sampled:** 6/26/2007

Sample Type PUF Tube **Date Received:** 7/2/2007

Analyst BVP **Air Volume (L):** NA

Analyte	Analytical Results (µg)	Analytical Results (mg/m³)	Analytical Results (ppm)	Reporting Limit (µg)	Test Method	Date Analyzed
gamma-BHC	<0.05	--	--	0.05	EPA TO-10A	07/03/2007

General Notes:
<: Less than the indicated reporting limit (RL).
--: Information not available or not applicable.
Back sections (if applicable) were checked and showed no significant breakthrough unless otherwise noted.

Clayton

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057-9672
Tel: 315-437-5227
888-432-LABS(5227)
Fax: 315-437-0571
www.galsonlabs.com

Check if change of address ☐
New Client ? yes ☐ no ☐

Report To : Shelly Krause
Galson Laboratories
6601 Kirkville Road
East Syracuse, NY 13057
Phone No. : 888-432-5227
Client Account # :

Invoice To : Pamela Weaver
Galson Laboratories
6601 Kirkville Road
East Syracuse, NY 13057
Phone No. : 888-432-5227
Fax No. 315-437-0571

Site Name : Project : L155013 Sampled By :

Need Results By:	(surcharge)
☑ 15 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

Verbal Authorization : _____
Purchase Order No. : 10127
Credit Card No. : _____ Card Holder Name : _____ Exp. : _____

Email/Fax Results To : Shelly Krause Fax No. : 315-437-0571
Email Address : skrause@galsonlabs.com

Sample Identification	Date Sampled	Collection Medium	*Air Volume (liters)/ Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
✓ N-BHC-6-26-07	6/26/2007	PUF	830	EPA TO-10A		
✓ S-BHC-6-26-07	6/26/2007	PUF	830	EPA TO-10A		
✓ E-BHC-6-26-07	6/26/2007	PUF	830	EPA TO-10A		
✓ W-BHC-6-26-07	6/26/2007	PUF	830	EPA TO-10A		
✓ FB-BHC-6-26-07	6/26/2007	PUF	NA	EPA TO-10A		

Lindane + BHC only per Tonya

☑ **If you do not want a Laboratory Blank added please check box. If blanks are not submitted or box is not checked, our policy states that a laboratory blank will be added for each analyte and it will be charged at normal rate.**

Comments:

Please provide an uncertainty statement in accordance with AIHA LQAP policy document Section 2A.5.4.3. Need results by 7/24/07. Rush charges are not authorized.

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Brian Caruso	Brian Caruso	6/29/07 3:50pm
Received by LAB :	Dawn L Denlevich	7/2/07 9:50AM	

Login # : _____

***Collection Time(min) X LPM = Air Vol. (L)**

Page 14 of 17 Report Reference:1 Generated:09-JUL-07 14:02

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☐ no

1 of 3

Report To : Mark Nicklas E954
Seuenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Invoice To : Mark Nicklas
Seuenson Environmental Inc.
2749 Lockport Road
Niagara Falls NY 14305
Phone No. : 716 284 0431
Fax No. : 716 284 7645

Site Name : OLN-003-Packard Road Project : OLN-003 Sampled By : Ted Wertz

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ **Samples submitted using the FreePumpLoan™ Program.** ☐ **Samples submitted using the FreeSamplingBadges™ Program.**

Client Account No. :
Purchase Order No. :
Credit Card No. :
Card Holder Name : Exp. :

Email / Fax Results To :
Email Address : twertz@mactec.com
Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
N BHC-6-26-07	6-26-07	Tube, Puf	830	415	BHC	NIOSH 5502	
S BHC-6-26-07	6-26-07	Tube, Puf	830	415	BHC		
E BHC-6-26-07	6-26-07	Tube, Puf	830	415	BHC		
W BHC-6-26-07	6-26-07	Tube, Puf	830	415	BHC		
FB BHC-6-26-07	6-26-07	Tube, Puf	field blank	n/a	BHC		
Mercury-N-19	6-26-07	Filter UW 37mm CE	83	415	Mercury	NIOSH 6009	
Mercury-S-13	6-26-07	Filter	83	415	Mercury		
Mercury-E-2	6-26-07	Filter	83	415	Mercury		
Mercury-W-16	6-26-07	Filter	83	415	Mercury		
Mercury-FB-4	6-26-07	Filter	field blank	n/a	Mercury		

Page 15 of 17 Report Reference: Generated 9 JUL 07 14:18

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area: PLEASE EMAIL RESULTS TO:

Comments: twertz@mactec.com and mnicklas@seuenson.com
CALL 770-490-4772 for any questions

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz	Ted Wertz	1400hrs / 6-27-2007
Received by LAB :	Cheri Macke	Cheri Macke	6/28/07 11 AM

Login # : L155013 **Samples received after 3pm will be considered as next day's business.**

* sample collection time X LPM = Air Vol.

LAB ORIGINAL

GALSON LABORATORIES

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

2 of 3

☐ Check if change of address

New Client ? ☐ yes ☐ no

Report To :
Phone No. :
Fax No. :

Invoice To :
Phone No. :
Fax No. :

Site Name : Project : Sampled By :

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ Samples submitted using the FreePumpLoan™ Program.
Client Account No. :
Purchase Order No. :
Credit Card No. :
Email / Fax Results To :
Email Address :

☐ Samples submitted using the FreeSamplingBadges™ Program.
Card Holder Name : DD Exp. :
Fax No. :

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
Total Dust-N-350601	6-26-07	Filter	415	415	Total Dust	NIOSH 0500	
Total Dust-S-350609	6-26-07	Filter	415	415	↓	↓	
Total Dust-E-350612	6-26-07	Filter	415	415			
Total Dust-W-350604	6-26-07	Filter	415	415			
Total Dust-FB-350610	6-26-07	Filter	field blank	n/a			
N-2213407529	6-26-07	Carulite	83	415	Mercury	NIOSH 6009	
S-2213407368	6-26-07	Carulite	83	415	↓	↓	
E-2260806653	6-26-07	Carulite	83	415			
W-2213407208	6-26-07	Carulite	83	415			
FB-2260806648	6-26-07	Carulite	field blank	n/a			

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area:

Comments:

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz	[signature]	1400 hrs / 6-27-2007
Received by LAB :	Cheri Marchetti	[signature]	6/28/07 11Am

Login # : L155013 **Samples received after 3pm will be considered as next day's business.** *** sample collection time X LPM = Air Vol.**

LAB ORIGINAL

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ Check if change of address

New Client ? ☐ yes ☐ no

3 of 3

Report To : _____ Invoice To : _____

Phone No. : _____ Phone No. : _____

Fax No. : _____ Fax No. : _____

Site Name : Project : Sampled By :

Need Results By:	(surcharge)
☒ 5 Business Days	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same day	200%

☒ **Samples submitted using the FreePumpLoan™ Program.** ☐ **Samples submitted using the FreeSamplingBadges™ Program.**

Client Account No. : _____

Purchase Order No. : _____

Credit Card No. : _____ Card Holder Name : _____ Exp. : _____

Email / Fax Results To : _____

Email Address : _____ Fax No. : _____

Sample Identification	Date Sampled	Collection Medium	*Air Volume (Liters)	Passive Monitors (Min)	Analysis Requested	Method Reference	Specific DL Needed
N 6	6-26-07	Filter	830	415	PAH	NIOSH 5506	
S 7	6-26-07	Filter	830	415	↓	↓	
E 10	6-26-07	Filter	830	415			
W 5	6-26-07	Filter	830	415			
FB- 8	6-26-07	Filter	field blank	n/a			
N ORBO	6-26-07	Tube, Orbo	830	415	PAH	NIOSH 5506	
S ORBO	6-26-07	Tube, Orbo	830	415	↓	↓	
E ORBO	6-26-07	Tube, Orbo	830	415			
W ORBO	6-26-07	Tube, Orbo	830	415			
FB- ORBO	6-26-07	Tube, Orbo	field blank	n/a			

Report Reference: 1 Generated: 09-JUL-07 14:47 Page 17 of 17

☒ Yes ☐ No **We normally add a laboratory blank for each analyte. We will charge you for this at our normal rate. If you agree please check "Yes" otherwise check "No".**

List description of industry or process / interference's present in sampling area: _____

Comments: _____

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by :	Ted Wertz		1400hrs / 6-27-2007
Received by LAB :	Cheri Marchetti		6/28/07 11 AM

Login # : L155013

Samples received after 3pm will be considered as next day's business.

* **sample collection time X LPM = Air Vol.**

LAB ORIGINAL

APPENDIX G

QUALITY CONTROL TEST RESULTS: STORMWATER PIPE TRENCH BACKFILL

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 25, 6/11/07, 6/15/07 (Four Copies)
SECTION:	02317, Trenching And Backfilling, paragraph 1.03.B
PAGE NUMBER	02317-1, Trenching And Backfilling
ITEM:	Reports from SJB Services, Report 1 pick up onsite material samples, Report #2, In-Place density test results for testing on 6/11/07, Report #3, In-Place density test results for testing on 6/15/07.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/2/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Dan LaVoie Date 7/2/07

Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 06-04-07

Project: Industrial Welding

Client: Sevenson

Contractor: Sevenson

Project No.: BT-07-097

Report No.: 1

S	M	T	W	TH	F	SA	
	X						
Sunny		Clear		Overcast		Rain	Snow
to 32		32 to 50		50 to 70		70 to 85	85 +
Ball		Moderate		High			

OBSERVATIONS:

This SJB Services technician was present at the above referenced project site to perform pick-ups for on-site material. The following was noted:

Technician picked up on-site material samples for Olin job site as per client.

Technician: Jerry Morgan

Time On Site: 8:00am-8:30am

Respectfully Submitted,
SJB SERVICES, INC.

Contract
Drilling
and
Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Project: IWS

Client: Sevenson Environmental

Contractor: Sevenson Environmental

Project No: BT-07-097

Report No.: 2

Date: June 11, 2007

S	M	T	W	TH	F	SA
	X					

Sunny	Clear	Overcast	Rain	Snow
X				

to 32	32 to 50	50 to 70	70 to 85	85 +
		X		

Still	Moderate	High
X		

OBSERVATIONS:

This SJB Services, Inc. Technician was present at the above referenced project to perform in-place density inspection.

Upon arrival to the site, the contractor representative (John Scarfini), Ted (Mactec Engineering) had shown this technician the areas that needed to be tested. The locations are in reference to the new piping for the water runoff of the approx 4.5 acres of land. The drainage runs across the Veterans Drive to the creek on the south side.

The areas on the test results are listed on the site map as follows:

1) Test # 1 east extension is listed as MH 2 to HW 1 on site map
2) Test # 4 north extension is listed as MH 2 to DI 7 on site map
3) Test # 5 south extension is listed as MH 2 to DI 5 on site map

The area MH 2 is the center distribution chamber inlet that ultimately sends the runoff to the creek on the south side of Veterans Drive in Niagara Falls, New York.

This area had 4 proctors to utilize. The proctor numbers are as listed;

1) LTR # 1 onsite material with a 111.2 @ 10 % moisture
2) LTR # 2 onsite material with a 112.7 @ 10.7 % moisture
3) LTR # 3 ROC stone #2 with a 147.3 @ 5.6 % moisture
4) LTR # 4 ROC Stone #2 with a 148.3 @ 5.8 % moisture

All the test results and reports were asked to be faxed to the attn: Ted Wertz (rep. MATEC) at 716-284-7645.

Refer to attached copy for test numbers.

Technician: Richard Card

Time On Site: 7:00 am - 9:00 am

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

FIELD IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: INDUSTRIAL WELDING — LOCATION: NIAGARA FALLS, NY

CLIENT: SEVENSON ENVIRONMENTAL — REPORT NO.: 2

BLDG./AREA: — PROJECT NO.: BT-07-097

CONTRACTOR: SEVENSON ENVIRONMENTAL — DATE: 06-11-07

TEST NO.	ELEV.	IN-PLACE DENSITY (pcf)	IN-PLACE MOISTURE (%)	% COMPACTION	PASS Y / N	PROCTOR CODE	LOCATION AND REMARKS
1	F.G.	108.1	13.1	97.2	Y	LTR-1	45' W OF EDGE OF PAVEMENT, CENTER OF TRENCH (E-EXTENSION)
2	SUBGRADE	104.5	12.6	94.0	N	LTR-1	1ST LINE FOR SUBGRADE, 20' N OF POLE, 15' FROM FENCE
3	SUBGRADE	106.3	12.7	95.6	Y	LTR-1	1ST LINE FOR SUBGRADE, 30' S OF PAVEMENT, 15' FROM FENCE
4	F.G.	119.9	10.4	106.4	Y	LTR-2	18' S OF DROPLINE MANHOLE, CENTER OF RUN (N-EXTENSION)
5	F.G.	108.2	12.0	96.0	Y	LTR-2	40' S OF DISTRIBUTION CHAMBER, CENTER OF LINE (N-EXTENSION)
6	F.G.	127.0	4.7	112.7	Y	LTR-2	100' S OF DISTRIBUTION CHAMBER, CENTER OF LINE (N-EXTENSION
7	SUBGRADE	106.7	11.8	96.0	Y	LTR-1	RETEST OF TEST #2 (TEST PERFORMED ON 6-15-07)

PROCTOR CODE	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE (%)	MATERIAL TYPE AND SOURCE
LTR-1	111.20	10.0	
LTR-2	112.70	10.7	
LTR-3	147.30	5.6	LTR-4, 148.3, 5.8

REMARKS:
NUCLEAR METHOD USED - DIRECT TRANSMISSION
95% COMPACTION REQUIRED ON ALL TESTS
F.G. = FINISHED GRADE

TECHNICIAN: R. CARD

Respectfully Submitted,
SJB SERVICES, INC.

Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 06-15-07

Project: Industrial Welding

Client: Severgon

Contractor: Severson

Project No.: BT-07-097

Report No.: 3

S	M	T	W	TH	F	SA
					X	

Sunny X	Clear	Overcast	Rain	Snow
to 32	32 to 50	50 to 70	70 to 85 X	85 +
Still	Moderate X	High		

OBSERVATIONS:

This SJB / Empire Geo Services field engineers was on site at the above referenced project to perform field in-place density testing via nuclear method using troxler-moisture-density gauge model # 3411-B. 95% compaction required.

Compaction tests performed on on-site materials at drainage trenches, consisting of clay fill with broken brick, broken concrete, crushed stone, etc. Reportedly placed in 12" lifts. Compaction test performed with probe depths ranging from 8" to 12" deep. Seer attached field in-place density test report for test results and locations, with copy of site plan to show approximate test locations.

Copy of previous in-place density test report (from 6-11-07) attached for clarity of re-test location.

Technician: Brian Tobin

Time On Site: 9:00am-11:00am

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5157 South Park Avenue
Hamburg, NY 14075
Phone: (716) 648-8110
Fax: (716) 648-8051

FIELD IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: INDUSTRIAL WELDING — LOCATION: NIAGARA FALLS, NY
CLIENT: SEVENSON ENVIRONMENTAL — REPORT NO.: 3
BLDG/AREA: SITE DRAINAGE TRENCHES — PROJECT NO.: BT-07-097
CONTRACTOR: SEVENSON ENVIRONMENTAL — DATE: 06-15-07

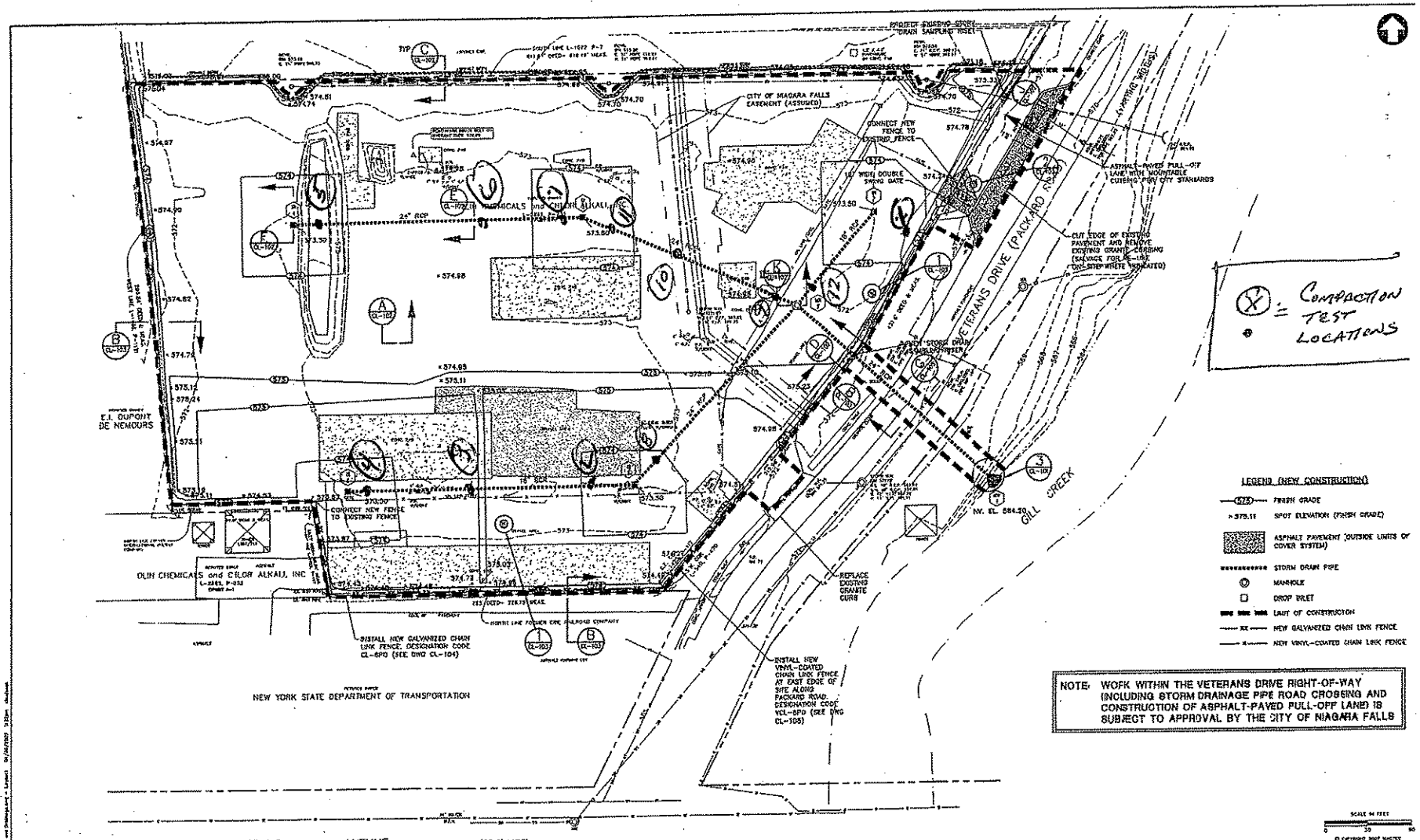
TEST NO	ELEV.	IN-PLACE DENSITY (pcf)	IN-PLACE MOISTURE (%)	% COMPACTION	PASS Y/N	PROCTOR CODE	LOCATION AND REMARKS ALSO, SEE ATTACHED LOCATION PLAN
1	SUBGRADE	105.7	11.8	95.0	Y	LTR-1	SUBGRADE FILL - RETEST OF TEST #2 FROM 6-11-07
2	SUBGRADE	107.6	5.9	105.9	Y	LTR-1	DI #5-35' WEST
3	SUBGRADE	122.3	10.6	110.0	Y	LTR-1	DI #5-110' WEST
4	SUBGRADE	116.9	9.9	105.1	Y	LTR-1	DI #6-30' EAST
5	SUBGRADE	131.4	6.2	118.2	Y	LTR-1	DI #4-20' EAST
6	SUBGRADE	129.3	6.1	116.3	Y	LTR-1	DI #4 - 65' EAST
7	SUBGRADE	116.2	6.2	104.5	Y	LTR-1	DI #3 - 30' WEST
8	SUBGRADE	119.1	7.5	106.2	Y	LTR-1	DI #5 - 25' NORTHEAST
9	SUBGRADE	127.2	6.2	114.4	Y	LTR-1	MH #2 - 10' NORTHEAST
10	SUBGRADE	117.6	7.7	105.7	Y	LTR-1	MH #2 - 65' NORTHWEST
11	SUBGRADE	131.7	6.5	118.4	Y	LTR-1	DI #3 - 30' SOUTHEAST
12	SUBGRADE	111.0	10.2	99.8	Y	LTR-1	MH #2 - 15' NORTH

PROCTOR CODE	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE (%)	MATERIAL TYPE AND SOURCE
LTR-1	111.20	10.0	ON SITE MATERIAL
LTR-3	147.30	5.6	2" ROC STONE, LAFARGE, NIAGARA

REMARKS:
NUCLEAR METHOD USED - DIRECT TRANSMISSION
95% COMPACTION REQUIRED ON ALL TESTS
TROXLER 3411-B

TECHNICIAN: B. TOBIN

Respectfully Submitted,
SJB SERVICES, INC.



NOTE: WORK WITHIN THE VETERANS DRIVE RIGHT-OF-WAY (INCLUDING STORM DRAINAGE PIPE ROAD CROSSING AND CONSTRUCTION OF ASPHALT-PAVED PULL-OFF LANE) IS SUBJECT TO APPROVAL BY THE CITY OF NIAGARA FALLS

REV	DATE	BY	SUP	DESCRIPTION
1	01/31/07			ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN P. NICHOLSON
CHECKED D. COFFMAN
IN CHARGE A. MAROTTE
DATE 02 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 IVEY POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OUS (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

GRADING AND DRAINAGE PLAN

SCALE AS SHOWN
CONTRACT 6160-07-0005
DWG NO. CL-002 REV. 1 SHEET NO. 4

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 22-1
SECTION:	02310, Grading, paragraph 1.03.B 02317, Trenching And Backfilling, paragraph 1.03.B
PAGE NUMBER	02310-1, Grading 02317-1, Trenching And Backfilling
ITEM:	Additional information of the Proctor of the onsite soils for Sample #1 and Sample #2, samples taken on the southeast corner of the site.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/10/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVoie Date 7/10/07

SJB SERVICES, INC.
Contract Drilling and Testing

22-1 ADDITIONAL INFORMATION

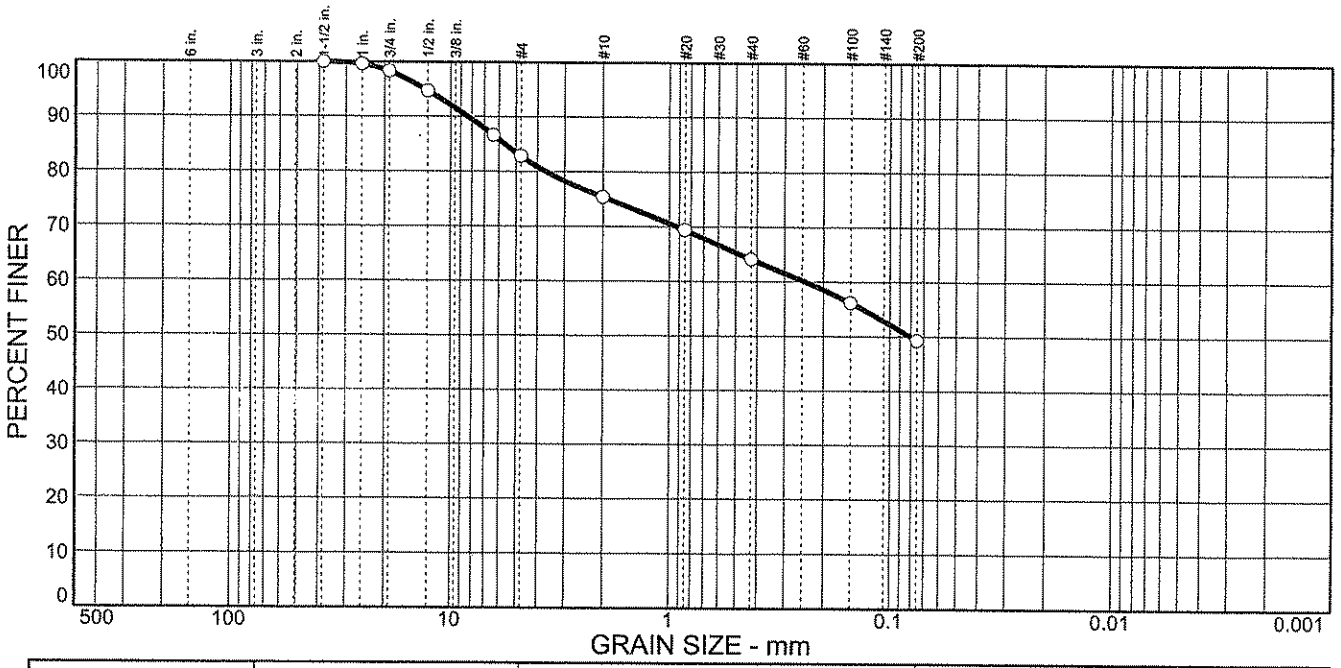
BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Particle Size Distribution Report

Project: OLIN CORP REMEADIATION **Project No.:** BT-07-097

Client: SEVENSON

Sample No: 07-736 **Source of Sample:** ON-SITE MATERIAL **Date:** 6/29/07
Location: SOUTHEAST CORNER SAMPLE #1 **Elev./Depth:**



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	17.2	33.5	49.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	99.6		
.75 in.	98.3		
.5 in.	94.7		
.25 in.	86.6		
#4	82.8		
#10	75.4		
#20	69.4		
#40	64.1		
#100	56.2		
#200	49.3		

* (no specification provided)

Soil Description

ON-SITE #1
ON-SITE BROWN FINES, SOME SAND, LITTLE GRAVEL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 5.63 D_{60}= 0.241 D_{50}= 0.0802
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

LTR-1
SAMPLED BY: SJB
DATE RECEIVED: 6/4/07

Plate

COMPACTION TEST REPORT

Test specification: ASTM D 1557-91 Procedure C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.55			1.7	49.3

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 111.2 pcf Optimum moisture = 10.0 %	ON-SITE #1 ON-SITE BROWN FINES, SOME SAND, LITTLE GRAVEL

Project No. BT-07-097 **Client:** SEVENSON

Project: OLIN CORP REMEADIATION

• **Location:** SOUTHEAST CORNER SAMPLE #1

Remarks:

LTR-1
SAMPLE NUMBER: 07-736

COMPACTION TEST REPORT

SJB SERVICES, INC.

Plate

Contract Drilling and Testing

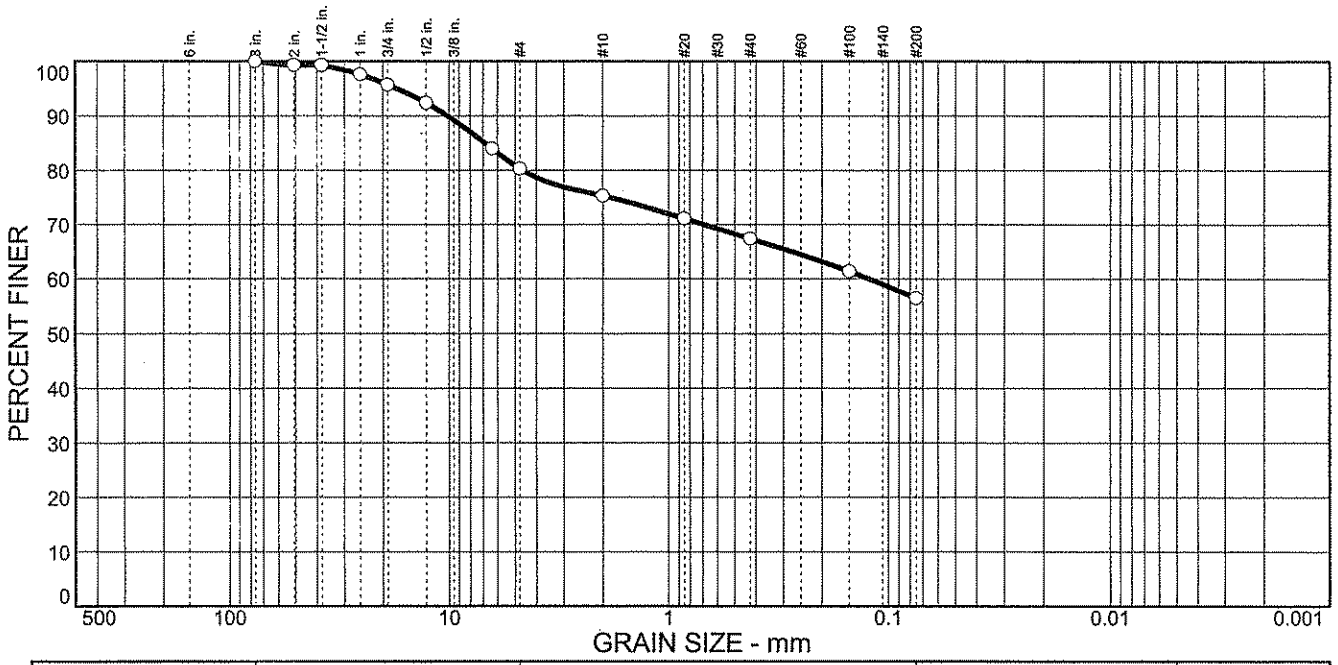
BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Particle Size Distribution Report

Project: OLIN CORP REMEADIATION **Project No.:** BT-07-097

Client: SEVENSON

Sample No: 07-737 **Source of Sample:** ON-SITE MATERIAL **Date:** 6/29/07
Location: SOUTHEAST CORNER SAMPLE #2 **Elev./Depth:**



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	19.7	23.8	56.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
2 in.	99.3		
1.5 in.	99.3		
1 in.	97.6		
.75 in.	95.7		
.5 in.	92.4		
.25 in.	84.0		
#4	80.3		
#10	75.3		
#20	71.1		
#40	67.4		
#100	61.4		
#200	56.5		

* (no specification provided)

Soil Description

ON-SITE #2
ON-SITE BROWN FINES, SOME SAND, LITTLE GRAVEL

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.84 D_{60}= 0.122 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

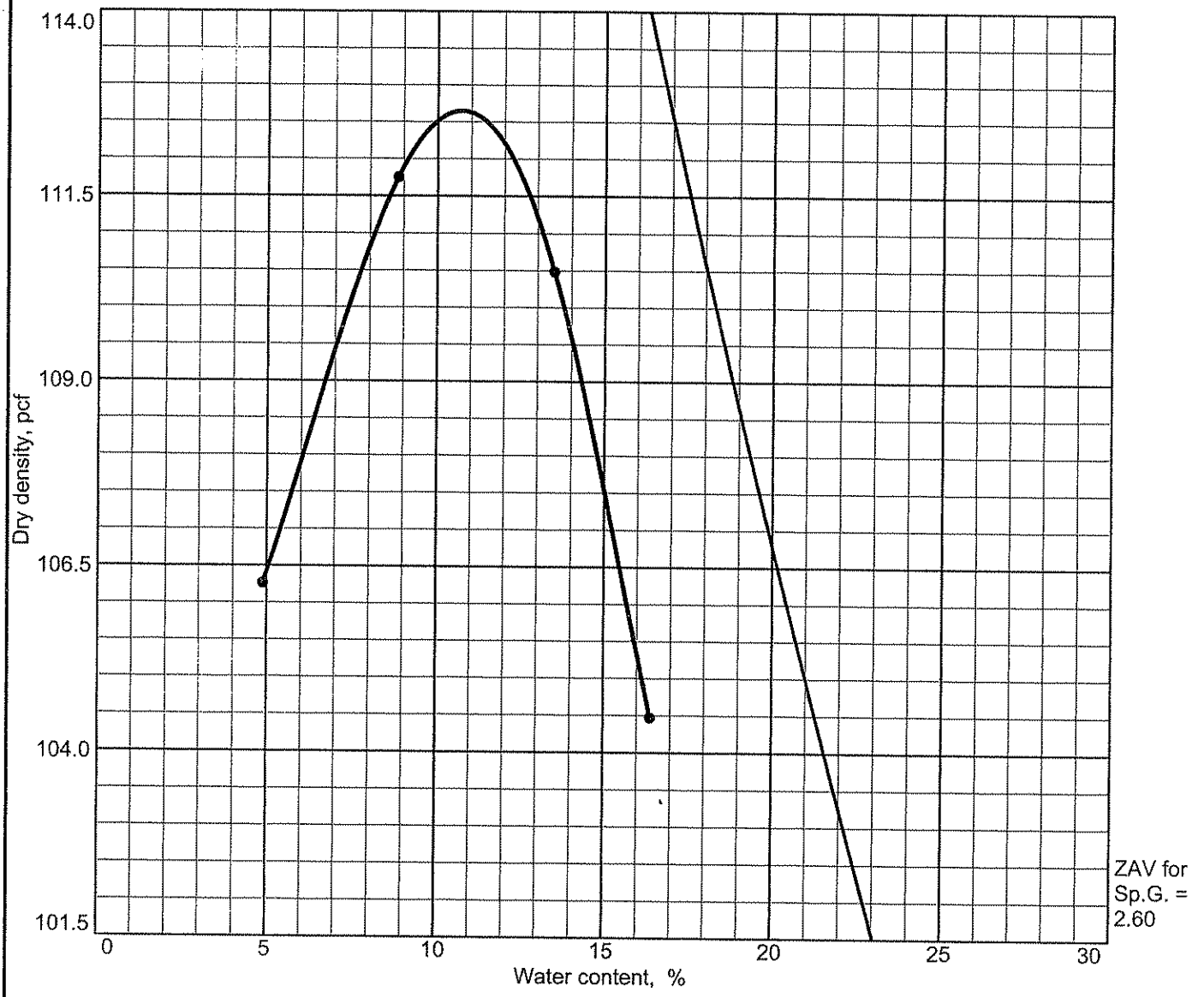
USCS= AASHTO=

Remarks

LTR-2
SAMPLED BY: SJB
DATE RECEIVED: 6/4/07

Plate

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.60			4.3	56.5

TEST RESULTS

Maximum dry density = 112.7 pcf

Optimum moisture = 10.7 %

MATERIAL DESCRIPTION

ON-SITE #2
ON-SITE BROWN FINES, SOME SAND, LITTLE GRAVEL

Project No. BT-07-097 **Client:** SEVENSON

Project: OLIN CORP REMEADIATION

● **Location:** SOUTHEAST CORNER SAMPLE #2

Remarks:

LTR-2
SAMPLE NUMBER: 07-737

COMPACTION TEST REPORT

SJB SERVICES, INC.

Plate

APPENDIX H

QUALITY CONTROL TEST RESULTS: AGGREGATE BASE COURSE

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (packard Road Site)**
Niagara Falls, New York

Received
5/17/07
MACTEC

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 11 (Four Copies)
SECTION:	02722 Aggregate Base Course, paragraph 1.03.A
PAGE NUMBER	02722-1
ITEM:	Aggregate Base Course Material, 02722-2 paragraph 2.02.A, and as per drawing CLI03, Certification, Sieve Size, Proctor
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	5/16/07
RESPONSE REQUIRED:	ASAP

Certification Statement:. By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature [signature] Date 5/15/07

LLAFARGE

Nicholas Dolyk
400 Hinman Rd.
Lockport, NY 14094
716-998-7212 (cell)
716-433-4930 (fax)

5/15/07

Sevenson Environmental
2749 Lockport Rd.
Niagara Falls, NY 14305

All: Mike
Re: Olin
Fax: 284-1196

To whom it may concern:

This is to certify that the material being supplied to the above project conforms to the outlined NYSDOT requirements for Section 703-02 Coarse Aggregate. Below is a gradation for 2" ROC NYSDOT Subbase 304.12.

location: Lockport
Material Type: 2" ROC

Sieve Size	Weight	% Ret	% Pass	Spec
2"	0.0	0.0	100.0	100
1 1/2"	262.3	1.5	98.5	
in	2640.9	15.1	83.4	
3/4"	1713.9	9.8	73.6	
1/2"	1329.2	7.6	66.0	
1/4"	4442.2	25.4	40.6	25-60
1/8"	1416.6	8.1	32.5	
#20	2256.1	12.9	19.6	
#40	1469.1	8.4	11.2	5-40
#80	279.8	1.6	9.6	
#200	612.1	3.5	6.1	0-10
pan	1066.8	6.1		
Total	17489.1			

Product Characteristics	
Avg. Proctor Density	142.6 pef
Avg. Proctor Moisture	6.60%
DOT Info	
Source No.	S-5R
Test No.	06AR10

44/[illegible] -74. BASE
P4[illegible]A[illegible] Rd X'ing DWG CL-103
SPEC 02722 PAR 1.03.A
SIEVE PAR 2.02.A

7Jt

Nicholas Dolyk
Quality Control
lafarg e AC&A

CONSTRUCTION MATERIALS / NORTHERN DIVISION
PO Box 510 - 400 Hinman Road, Lockport, New York 14094
Office: (716) 439-1300 Fax: (716) 439-9447

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 26, 6/26/07
SECTION:	02722 Aggregate Base Course, paragraph 1.03.B
PAGE NUMBER	02722-1
ITEM:	SJB Services field in-place density testing report dated 6/26/07 for the Aggregate Base Course Material.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/12/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVoie Date 7/12/07

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 6-26-07

Project: OLIN
Client: SEVENSON
Contractor: SEVENSON
Project No.: BT-07-097
Report No.: 5

	S	M	(T)	W	TH	F	SA
Day:							

Weather:	(Sunny) AM	Clear	Overcast	Rain	Snow
Temperature:	to 32	32 to 50	50 to (70) AM	70 to 85	85 +
Wind:	(Still)	Moderate	High		

OBSERVATIONS:

THIS SJB SERVICES TECHNICIAN WAS PRESENT AT THE ABOVE REFERENCED PROJECT SITE TO PERFORM IN-PLACE DENSITY TESTING.

THE FOLLOWING WAS NOTED:

1.) CONTRACTOR BACKFILLED PARKING LOT AREA WITH 2" ROC STONE (FROM: LAFARGE LOCKPORT). THE MATERIAL WAS PLACED IN LIFTS, COMPACTED & IN-PLACE DENSITY TESTING WAS PERFORMED.

2.) SEE ATTACHED IPD FIELD REPORT FOR MORE INFORMATION.

Technician: JERRY MORGAN

Time On Site: 8:00AM - 12:00PM

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

FIELD IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

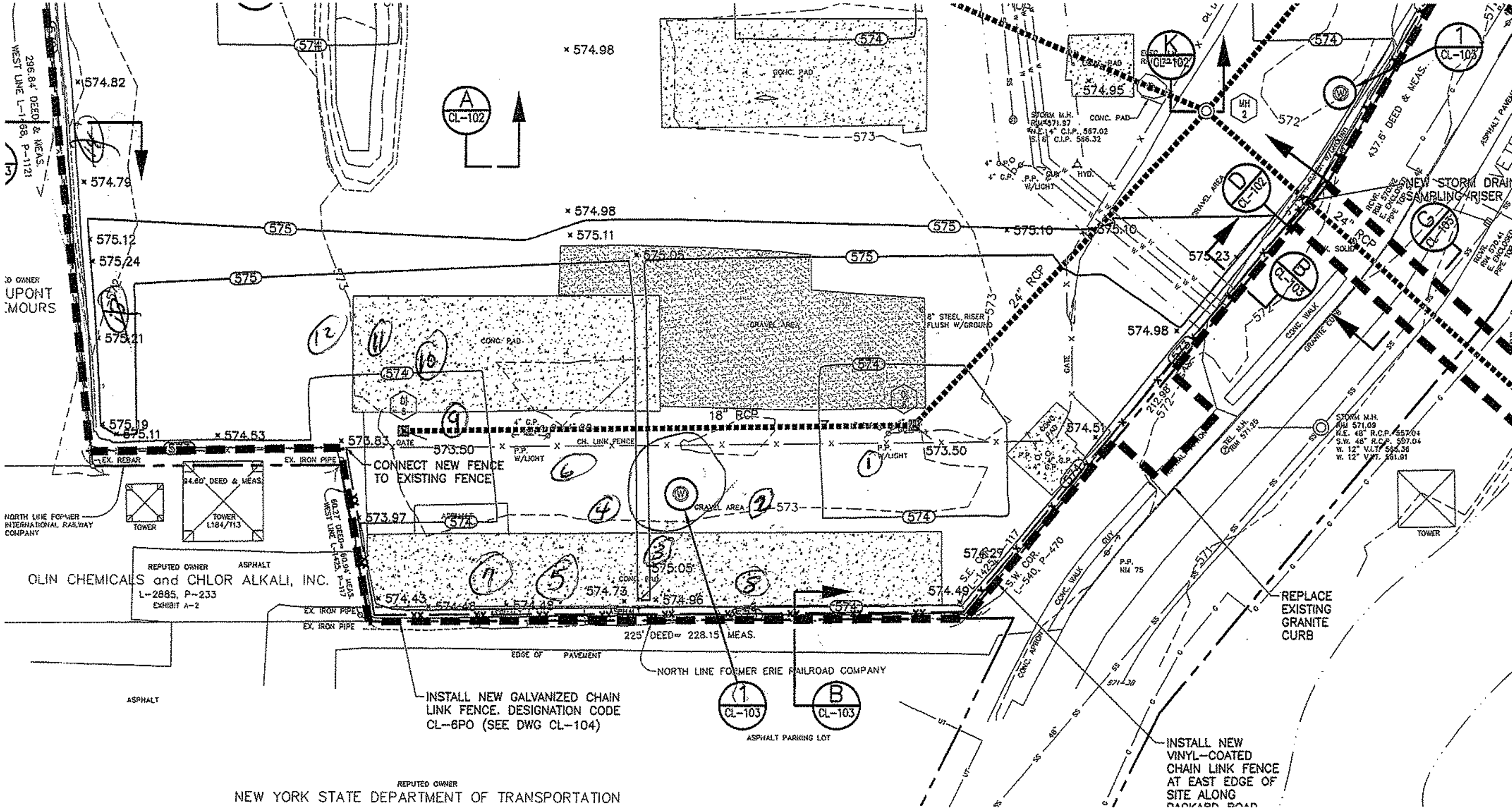
PROJECT: OLIN
LOCATION: NIAGARA FALLS, N.Y.
CLIENT: Sevenson
REPORT NO.:
BLDG./AREA: Parking Lot
PROJECT NO.: BT-07-097
CONTRACTOR: Sevenson
DATE: 6-26-07

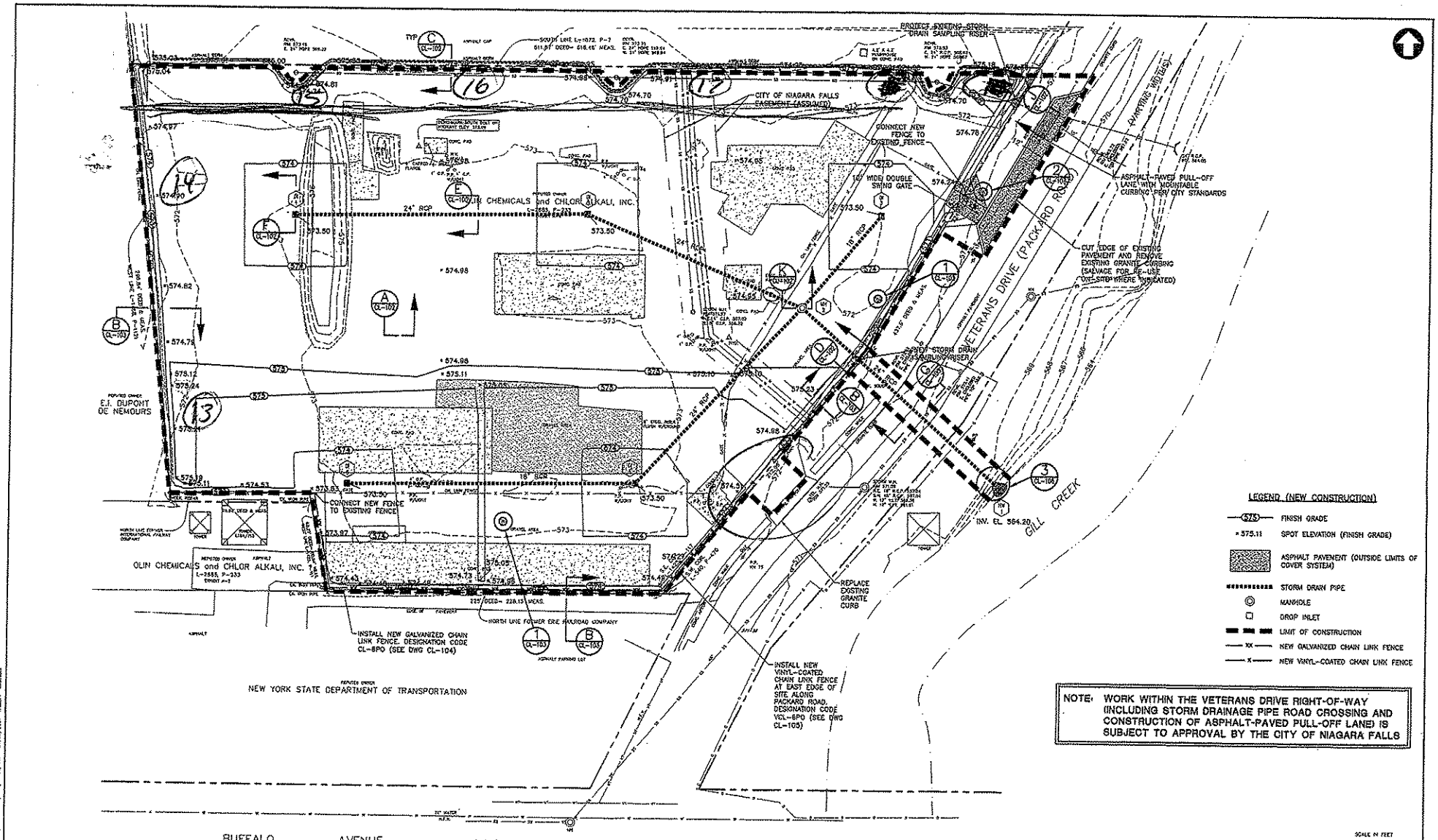
TEST NO.	ELEV.	IN-PLACE DENSITY (pcf)	IN-PLACE MOISTURE (%)	% COMPACTION	PASS Y / N	PROCTOR CODE	LOCATION AND REMARKS "Parking Lot"
1.	AGB	141.5	4.3	96.1	Y	LTR-3	25'SW DI NO.5
2.	"	141.6	5.5	96.2	Y	"	40' N OF DI NO.5
3.	"	139.8	5.2	95.0	Y	"	40'SW OF DI NO.5
4.	"	140.1	5.2	95.1	Y	"	30' W OF DI NO.5
5.	"	142.6	4.8	96.8	Y	"	60'SW OF Sampling Well
6.	"	141.5	5.4	96.1	Y	"	40'N OF TEST NO. 5 LOCATION
7.	"	142.7	5.4	96.9	Y	"	20'S OF TEST NO. 6 LOCATION
8.	"	142.5	5.2	96.7	Y	"	60'W OF TEST NO. 7 LOCATION
9.	"	142.3	5.1	96.8	Y	"	50'NE OF DI NO. 6
10.	"	139.8	5.2	95.0	Y	"	60'SW OF TEST NO. 9 LOCATION
11.	"	142.5	4.7	96.8	Y	"	100'NW OF DI NO. 6
12.	"	146.2	6.8	99.3	Y	"	40'SW OF TEST NO. 11 LOCATION
13.	"	141.7	5.2	96.3	Y	"	100'NW OF TEST NO. 12. LOCATION
14.	"	139.8	5.4	95.0	Y	"	100'N OF TEST NO. 13. LOCATION
15.	"	140.8	5.3	95.8	Y	"	100'NE OF TEST NO. 14. LOCATION
16.	"	140.4	4.7	95.3	Y	"	100'E OF TEST NO. 15 LOCATION
17.	"	146.3	5.1	99.3	Y	"	100'SE OF TEST NO. 16 LOCATION

PROCTOR CODE	MAXIMUM DENSITY (pcf)	OPTIMUM MOISTURE (%)	MATERIAL TYPE AND SOURCE
LTR-3	142.3	5.6	2" Roc Stone (Lafarge Lockport)

REMARKS:
NUCLEAR METHOD USED Troxler 3430
DIRECT TRANSMISSION Ser. No. 21924
95% Compaction Required
TECHNICIAN: Terry Morgan

Respectfully Submitted,
SJB SERVICES, INC.


296.84' DEED & MEAS.
WEST LINE L-1468, P-1121
574.98
574.82
574.79
575.12
575/24
575.21
575.19
575.11
574.53
575.11
575.05
575.10
575.23
574.98
574.95
573.83
573.50
573.97
574.43
574.73
574.96
575.05
574.49
574.51
CONC. PAD
GRAVEL AREA
8" STEEL RISER FLUSH W/GROUND
18" RCP
24" RCP
CH. LINK FENCE
GATE
P.P. W/LIGHT
STORM M.H.
CONC. PAD
HYD.
UPONT
MOURS
EX. REBAR
EX. IRON PIPE
94.60' DEED & MEAS.
TOWER
L184/T113
NORTH LINE FORMER INTERNATIONAL RAILWAY COMPANY
CONNECT NEW FENCE TO EXISTING FENCE
REPUTED OWNER
ASPHALT
OLIN CHEMICALS and CHLOR ALKALI, INC.
L-2885, P-233
EXHIBIT A-2
60.27' DEED= 60.94' MEAS.
WEST LINE L-1425, P-117
225' DEED= 228.15' MEAS.
EDGE OF PAVEMENT
NORTH LINE FORMER ERIE RAILROAD COMPANY
INSTALL NEW GALVANIZED CHAIN LINK FENCE. DESIGNATION CODE CL-6PO (SEE DWG CL-104)
ASPHALT PARKING LOT
REPUTED OWNER
NEW YORK STATE DEPARTMENT OF TRANSPORTATION
ASPHALT
S.E. COR. L-1425, P-117
S.W. COR. L-540, P-470
212.98'
437.6' DEED & MEAS.
NEW STORM DRAIN SAMPLING RISER
CONC. WALK
GRANITE CURB
CONC. APRON
STORM M.H.
RIM 571.09
N.E. 48" R.C.P. 557.04
S.W. 48" R.C.P. 557.04
W. 12" V.I.T. 556.36
W. 12" V.I.T. 561.91
REPLACE EXISTING GRANITE CURB
TOWER
INSTALL NEW VINYL-COATED CHAIN LINK FENCE AT EAST EDGE OF SITE ALONG PACKARD ROAD
ASPHALT PAVEMENT
CL-102
CL-103
MH 2



REV	DATE	BY	SUP	APP	DESCRIPTION
1	04/30/07				ISSUED FOR CONSTRUCTION; UPDATED PROJECT NUMBER

DESIGNED S. LIND
DRAWN P. NICHOLSON
CHECKED G. COFFMAN
IN CHARGE R. MAROTTE
DATE 09 MARCH 07

OLIN CORPORATION
CHARLESTON, TENNESSEE

MACTEC Engineering and Consulting, P.C.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

IWS OU3 (PACKARD ROAD SITE)
NIAGARA FALLS, NEW YORK

GRADING AND DRAINAGE PLAN

SCALE AS SHOWN
CONTRACT 6100-07-0005
DWG NO. CL-002
REV NO. 1
PAGE NO. 4

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 26, 7/2/07
SECTION:	02722 Aggregate Base Course, paragraph 1.03.B
PAGE NUMBER	02722-1
ITEM:	SJB Services field in-place density testing report dated 7/2/07 for the Aggregate Base Course Material. Also included is additional information of the Proctor, test results of two samples of the 2-inch ROC stone taken at LaFarge, Niagara Plant.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/10/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Jim LaVal Date 7/10/07

SJB SERVICES, INC.
Contract Drilling and Testing

#26 02722 1.038
7/2/07

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-2-07

Project: OLIN
Client: SEVENSON
Contractor: SEVENSON
Project No.: BT-07-097
Report No.: 4

Day:	S	(M)	T	W	TH	F	SA		
Weather:	(Sunny)		Clear		Overcast		Rain		Snow
Temperature:	to 32		32 to 50		50 to (70)		70 to 85		85 +
Wind:	(Still)		Moderate		High				

OBSERVATIONS:

THIS SJB SERVICES TECHNICIAN WAS Present at The ABOVE Referenced Project SITE TO Perform IN-PLACE Density TESTING.

The FOLLOWING WAS Noted:

1) Contractor BACKFILLED PARKING LOT WITH 2" Roc Stone (From: LAFARGE Lockport). The MATERIAL WAS PLACED IN LIFTS, COMPACTED & IN-PLACE Density TESTING WAS PERFORMED.

2) See ATTACHED IPD Field report FOR more INFORMATION.

Technician: JERRY MORGAN

Time On Site: 800AM - 1100AM

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

FIELD IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OLIN
LOCATION: NIAGARA FALLS, N.Y.
CLIENT: Sevenson
REPORT NO.:
BLDG./AREA: Parking Lot
PROJECT NO.:
CONTRACTOR: Sevenson
DATE: 7/2/07

TEST NO.	ELEV.	IN-PLACE DENSITY (pcf)	IN-PLACE MOISTURE (%)	% COMPACTION	PASS Y / N	PROCTOR CODE	LOCATION AND REMARKS "Parking Lot"
1.	AGB	142.0	5.0	96.4	Y	LTR-3	30'W OF CATCH BASIN NO. 7
2.	"	144.9	6.1	98.4	Y	"	100'W OF TEST NO. 1 LOCATION
3.	"	146.7	3.9	99.6	Y	"	100'W OF TEST NO. 2 LOCATION
4.	"	143.6	5.4	97.5	Y	"	100'W OF TEST NO. 3 LOCATION
5.	"	146.0	4.4	99.1	Y	"	40'S OF TEST NO. 4 LOCATION
6.	"	147.3	4.3	100.0	Y	"	100'E OF " " 5. "
7.	"	143.7	6.0	97.5	Y	"	100'E OF " " 6. "
8.	"	141.0	4.7	95.7	Y	"	100'E OF " " 7. "
9.	"	145.0	5.7	98.4	Y	"	40'W OF MANHOLE #2
10.	"	147.3	5.4	100.0	Y	"	100'W OF TEST NO. 9 LOCATION
11.	"	144.1	4.6	97.8	Y	"	100'W OF " " 10. "
12.	"	147.3	4.7	100.0	Y	"	100'S OF " " 11. "
13.	"	142.5	4.2	96.7	Y	"	100'E OF " " 12. "
14.	"	147.3	4.4	100.0	Y	"	100'E OF " " 13. "
15.	"	140.7	3.2	95.5	Y	"	20'W OF CATCH BASIN 5
16.	"	146.0	4.0	99.1	Y	"	100'W OF TEST NO. 15 LOCATION
17.	"	147.3	5.6	100.0	Y	"	80'NW OF CATCH BASIN NO. 4

PROCTOR CODE	MAXIMUM DENSITY (pcf)	OPTIMUM MOISTURE (%)	MATERIAL TYPE AND SOURCE
LTR-3	147.3	5.6	2" ROC STONE (LAFARGE LOCKPORT)

REMARKS:
NUCLEAR METHOD USED Troxler 3411B
DIRECT TRANSMISSION Ser. No. 12116
95% Compaction Required
TECHNICIAN: J. Morgan

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

FIELD IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

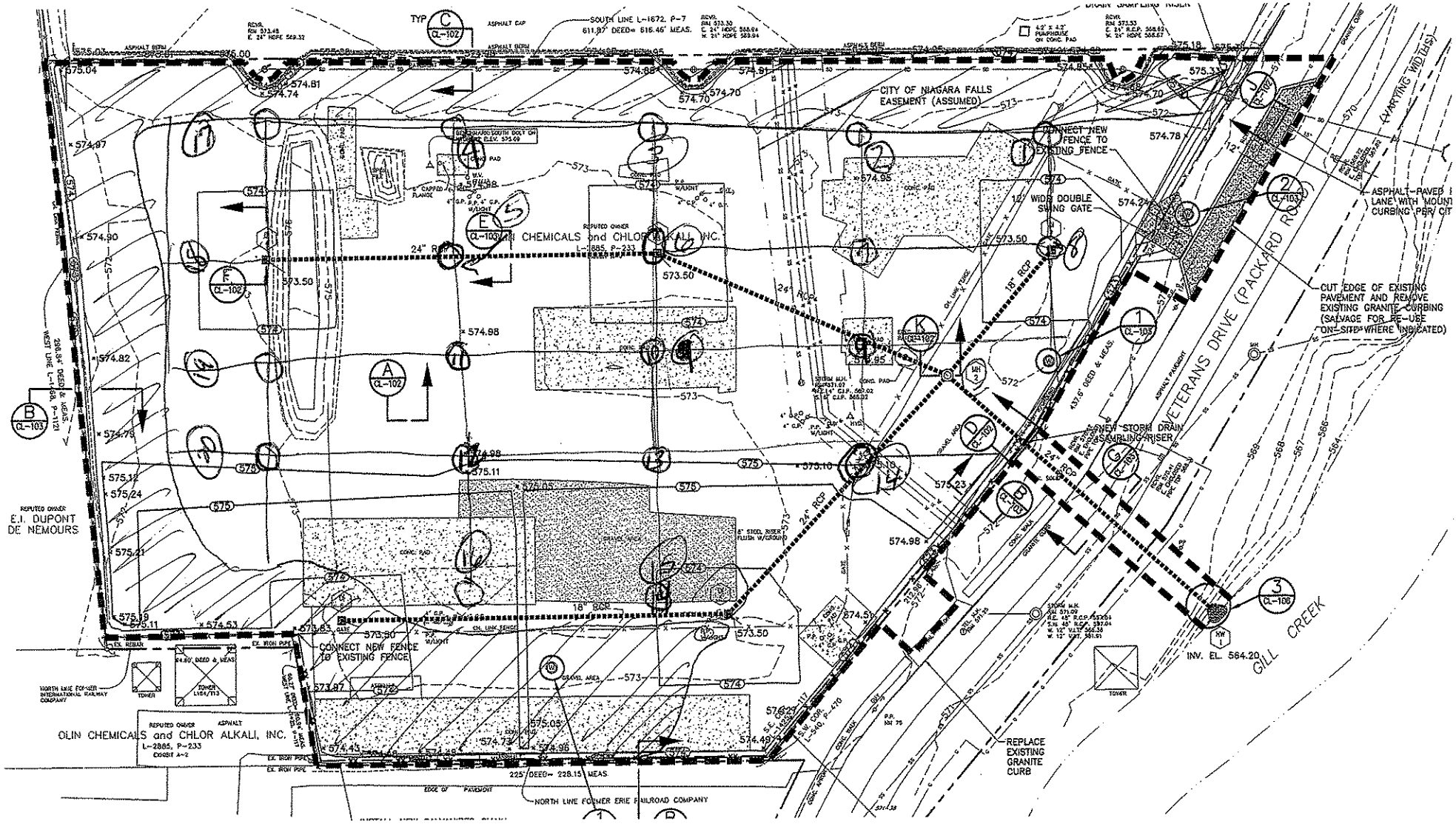
PROJECT: OLIN
LOCATION: NIAGARA FALLS, NY
CLIENT: SEVENSON
REPORT NO.:
BLDG./AREA: Parking Lot
PROJECT NO.:
CONTRACTOR: SEVENSON
DATE: 7-2-07

TEST NO.	ELEV.	IN-PLACE DENSITY (pcf)	IN-PLACE MOISTURE (%)	% COMPACTION	PASS Y / N	PROCTOR CODE	LOCATION AND REMARKS
							"Parking Lot"
18	AGB	143.6	4.9	97.5	Y	LTR-3	100'S OF TEST NO. 18 LOCATION
19	"	143.0	7.1	97.1	Y	"	100'S " " " 18 "
20	"	142.5	6.2	96.7	Y	"	100'S " " " 19 "

PROCTOR CODE	MAXIMUM DENSITY (pcf)	OPTIMUM MOISTURE (%)	MATERIAL TYPE AND SOURCE
LTR-3	147.3	5.6	(2" ROC STONE - LAFARGE LOCKPORT)

REMARKS:
NUCLEAR METHOD USED Troxler 3411B
DIRECT TRANSMISSION Ser. NO 12116
95% Compaction required
TECHNICIAN: J. MORGAN

Respectfully Submitted,
SJB SERVICES, INC.


CITY OF NIAGARA FALLS EASEMENT (ASSUMED)
CONNECT NEW FENCE TO EXISTING FENCE
12' WIDE DOUBLE SWING GATE
ASPHALT-PAVED LANE WITH MOUNT CURBING PER CIT
CUT EDGE OF EXISTING PAVEMENT AND REMOVE EXISTING GRANITE CURBING (SALVAGE FOR RE-USE ON-SITE WHERE INDICATED)
VETERANS DRIVE (PACKARD RD.)
NEW STORM DRAIN SAMPLING RISER
REPUTED OWNER E.I. DUPONT DE NEMOURS
OLIN CHEMICALS and CHLOR ALKALI, INC. L-2885, P-233
CONNECT NEW FENCE TO EXISTING FENCE
REPLACE EXISTING GRANITE CURB
NORTH LINE FORMER ERIE RAILROAD COMPANY
INV. EL. 564.20
GILL CREEK
225' DEED= 228.15' MEAS.

Contract Drilling and Testing

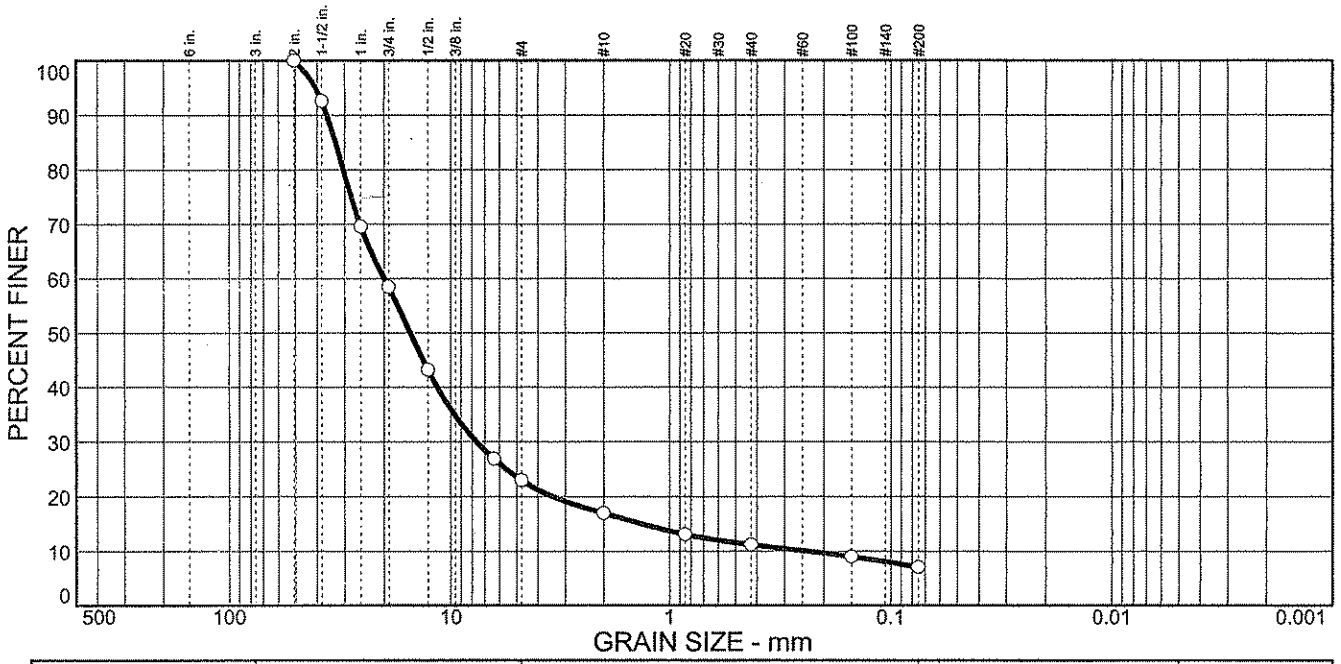
BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Particle Size Distribution Report

Project: OLIN CORP REMEADIATION **Project No.:** BT-07-097

Client: SEVENSON

Sample No: 07-738 **Source of Sample:** LAFARGE N.A. **Date:** 6/29/07
Location: NIAGARA PLANT **Elev./Depth:**



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	77.0	15.9	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1.5 in.	92.6		
1 in.	69.6		
.75 in.	58.5		
.5 in.	43.2		
.25 in.	26.9		
#4	23.0		
#10	17.0		
#20	13.1		
#40	11.2		
#100	9.0		
#200	7.1		

* (no specification provided)

Soil Description

2" ROC STONE
0 - 3500 CYD STOCKPILE

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 33.0 D_{60}= 19.9 D_{50}= 15.2
D_{30}= 7.62 D_{15}= 1.33 D_{10}= 0.236
C_u= 84.23 C_c= 12.36

Classification

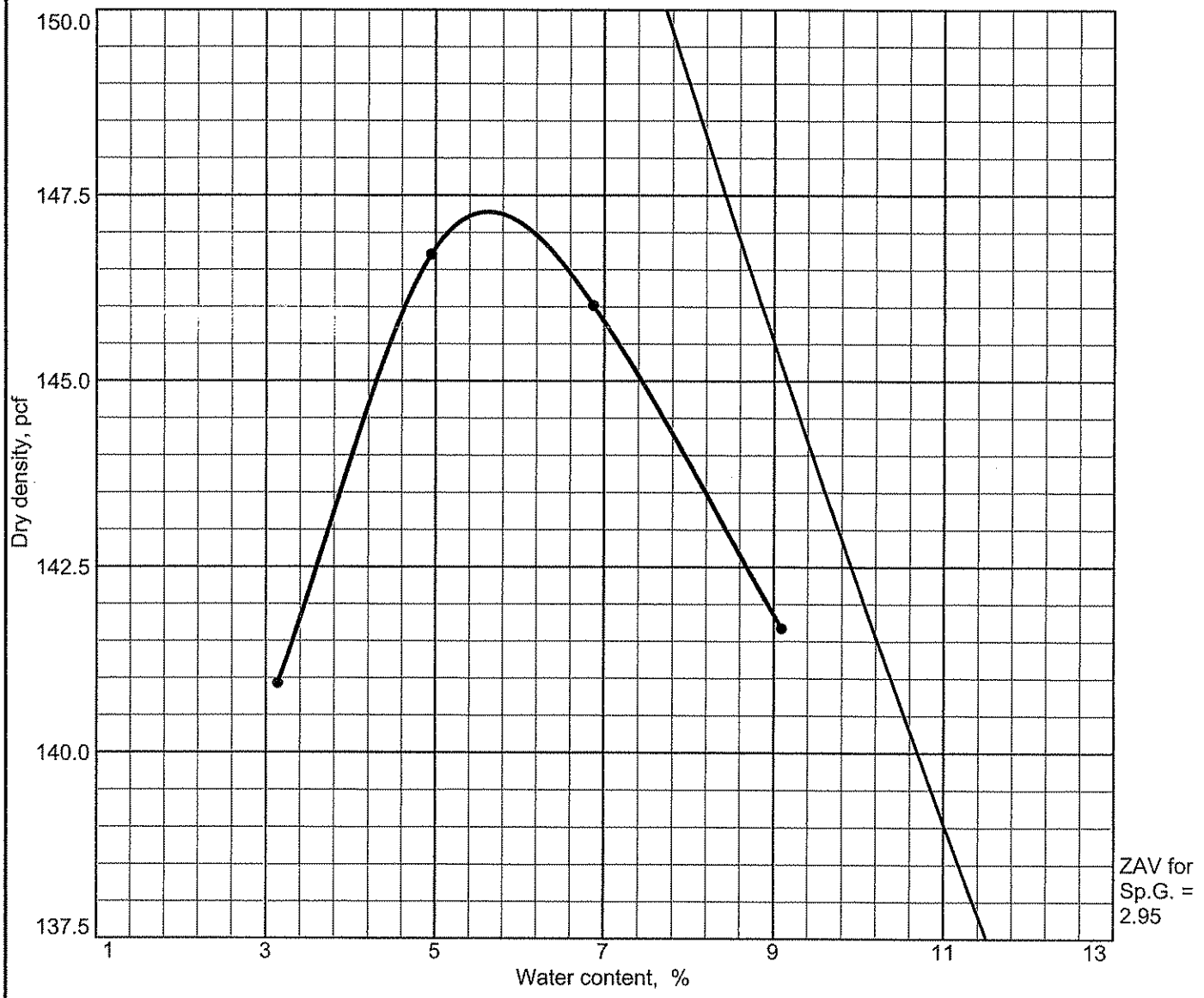
USCS= AASHTO=

Remarks

LTR-3
SAMPLED BY: SJB
DATE RECEIVED: 6/4/07

Plate

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.95			41.5	7.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 147.3 pcf Optimum moisture = 5.6 %	2" ROC STONE 0 - 3500 CYD STOCKPILE

Project No. BT-07-097 **Client:** SEVENSON

Project: OLIN CORP REMEADIATION

● **Location:** NIAGARA PLANT

Remarks:

LTR-3

SAMPLE NUMBER: 07-738

COMPACTION TEST REPORT

SJB SERVICES, INC.

Plate

Contract Drilling and Testing

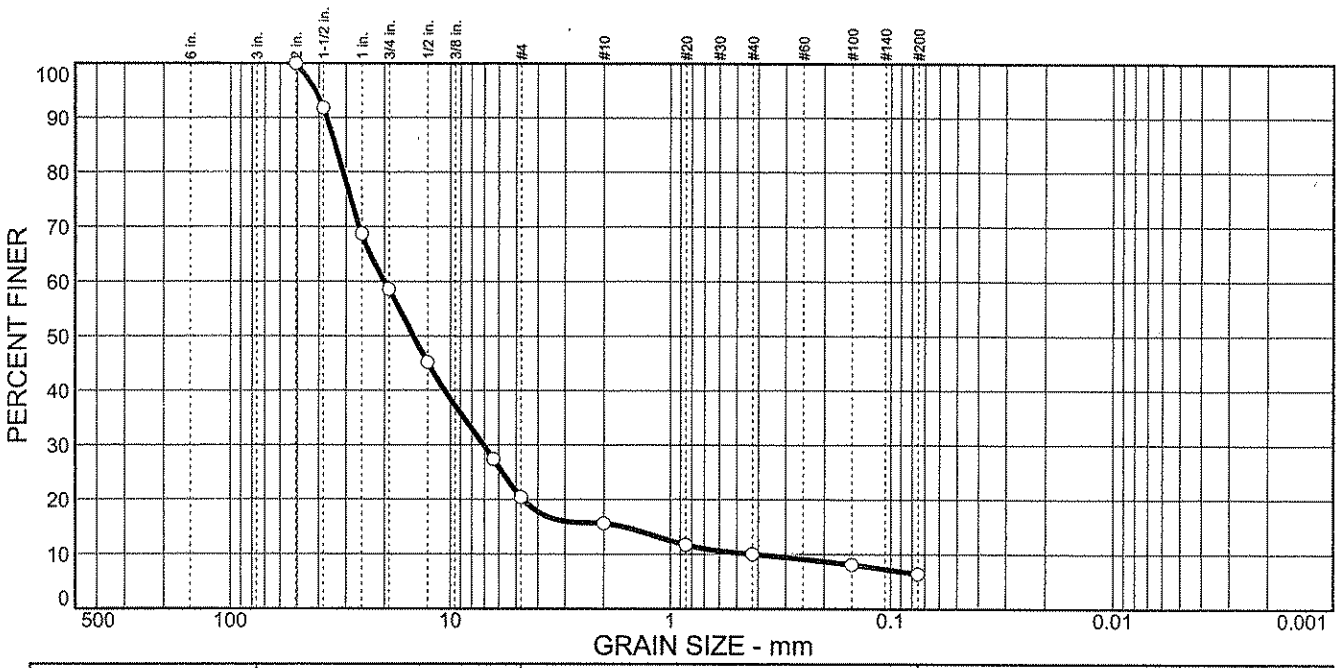
BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Particle Size Distribution Report

Project: OLIN CORP REMEADIATION **Project No.:** BT-07-097

Client: SEVENSON

Sample No: 07-739 **Source of Sample:** LAFARGE N.A. **Date:** 6/29/07
Location: NIAGARA PLANT **Elev./Depth:**



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	79.6	14.0	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1.5 in.	91.8		
1 in.	68.7		
.75 in.	58.6		
.5 in.	45.2		
.25 in.	27.4		
#4	20.4		
#10	15.6		
#20	11.7		
#40	10.0		
#100	8.1		
#200	6.4		

* (no specification provided)

Soil Description

2" ROC STONE
3500 - 7000 CYD STOCKPILE

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 33.5 D_{60}= 19.9 D_{50}= 14.7
D_{30}= 7.05 D_{15}= 1.63 D_{10}= 0.425
C_u= 46.94 C_c= 5.87

Classification

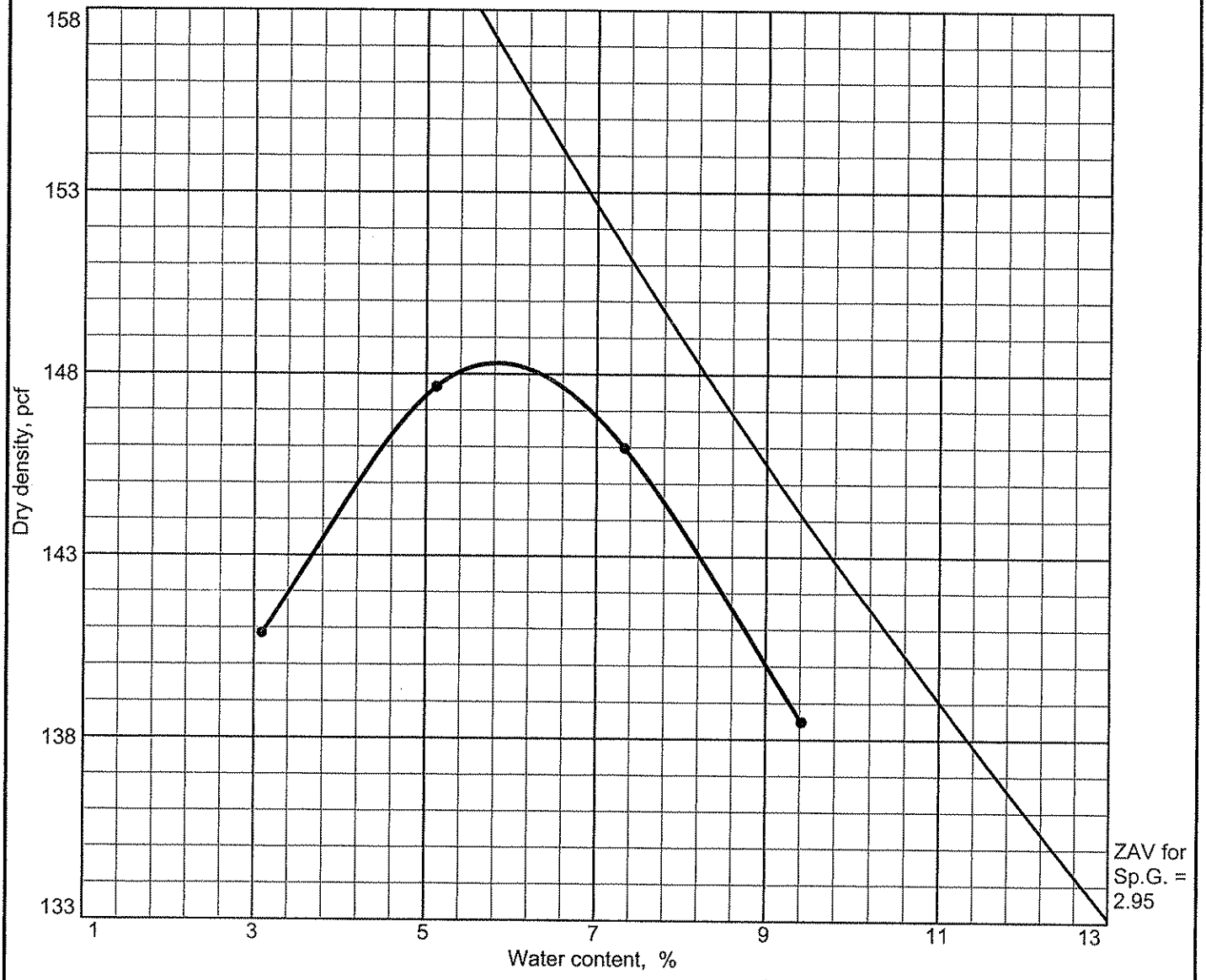
USCS= AASHTO=

Remarks

LTR-4
SAMPLED BY: SJB
DATE RECEIVED: 6/4/07

Plate

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.95			41.4	6.4

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 148.3 pcf Optimum moisture = 5.8 %	2" ROC STONE 3500 - 7000 CYD STOCKPILE
Project No. BT-07-097 **Client:** SEVENSON **Project:** OLIN CORP REMEADIATION • **Location:** NIAGARA PLANT	**Remarks:** LTR-4 SAMPLE NUMBER: 07-739
COMPACTION TEST REPORT **SJB SERVICES, INC.**	**Plate**

APPENDIX I

QUALITY CONTROL TEST RESULTS: ASPHALT CONCRETE JOB-MIX FORMULAS, CERTIFICATIONS, AND VERIFICATION TESTING

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 16 (Four Copies)
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.A.1, 1.03.A.2
PAGE NUMBER	02743-2
ITEM:	Job mix formulas and certification for Asphalt Concrete within limits of Asphalt Cover for the Asphalt concrete binder course and the Asphalt surface course.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** ***B - Manufacturer's Literature or Data*** C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	5/17/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature [signature] Date 5/17/07

LAFARGE

Nicholas Dolyk
400 Hinman Rd.
Lockport, NY 14094
716-998-7212 (cell)
716-433-4930 (fax)

April 9, 2007

Yarussi Construction
5650 Simmons Ave.
Niagara Falls, NY 14304

Att: Ardell
Re: Olin, Buffalo and Packard Rd.
Fax: 283-5928

To Whom it may concern:

This is to certify that the material being supplied to the above project conforms to the outlined NYSDOT requirements for Section 703-02 Coarse Aggregates and Section 403, Hot Mix Asphalt. Our NYSDOT source number is 5-5R and our most recent test number is 06AR10.

Location: Niagara
Job Mix Formulas (JMF's): Type 3 Binder, 7 Top

SPEC 02713
BINDER { PARAGRAPH 1.03.A.1 Job mix formula & PARAGRAPH 1.03.A.2 certification

Sincerely,

Nicholas Dolyk
Quality Control
Lafarge AC&A

CONSTRUCTION MATERIALS / NORTHERN DIVISION
PO Box 510 ~ 400 Hinman Road, Lockport, New York 14094
Office: (716) 439-1300 Fax: (716) 434-9447

P.5

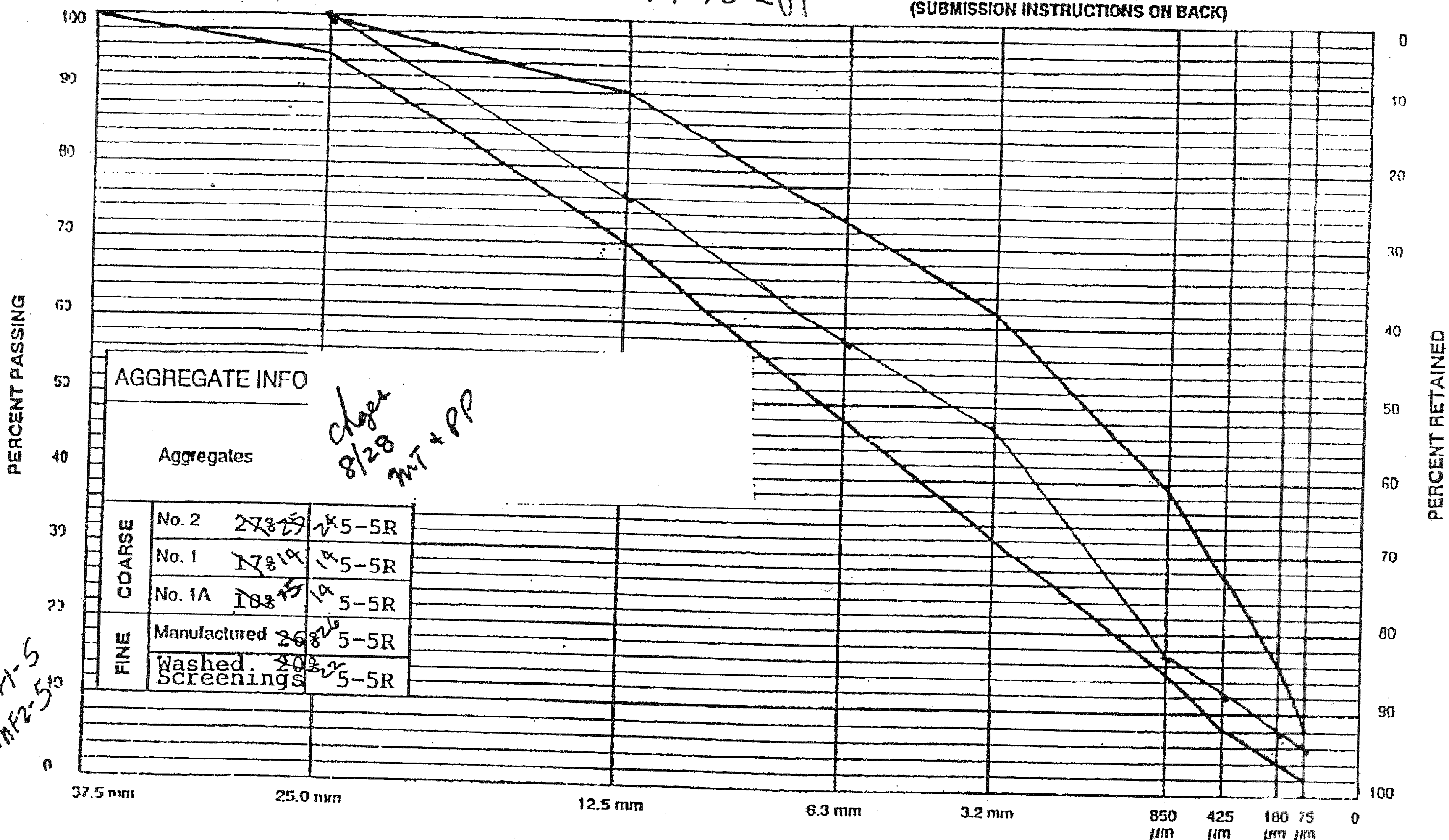
716-433-4930

MATERIALS BUREAU
JOB MIX FORMULA
Type 3, Binder (Dense)

Plant: Redland Quarries NY Inc. Region: 5
Plant Location: 400 Hinman Rd., Lockport, NY 14094, Niagara
Submitted By: [signature] Date: April 21, 1997

17-13-01

(SUBMISSION INSTRUCTIONS ON BACK)



AGGREGATE INFO

change 8/28 MT + PP

	Aggregates		
COARSE	No. 2	~~27%~~ 29	~~29~~ 5-5R
	No. 1	~~17%~~ 19	19 5-5R
	No. 1A	~~18%~~ 15	19 5-5R
FINE	Manufactured	~~26%~~ 26	5-5R
	Washed Screenings	~~20%~~ 22	5-5R

Sieve Size		37.5 mm	25.0 mm	12.5 mm	6.3 mm	3.2 mm	850 µm	425 µm	180 µm	75 µm	Asphalt Content (Percent)
% Passing	1. General Limits	100	95-100	70-90	48-74	32-62	15-39	8-27	4-16	2-8	4.5-6.5
	2. JMF Range	100	95-100	70-82	51-65	40-54	10-24	5-19	4-12	0-4	4.5-5.3
	3. Target Value	100	100	76.0	58.0	47.0	17.0	12.0	8.0	2	4.9

Asphalt Grade
AC 15

Approved By Regional Director: [signature] Date: 5/9/97

Remarks: Approval based on all material being returned, no dust diverted

LAFARGE

Nicholas Dolyk
400 Hinman Rd.
Lockport, NY 14094
716-998-7212 (cell)
716-433-4930 (fax)

April 9, 2007

Yarussi Construction
5650 Simmons Ave.
Niagara Falls, NY 14304

Att: Ardell
Re: Olin, Buffalo and Packard Rd.
Fax: 283-5928

To Whom it may concern:

This is to certify that the material being supplied to the above project conforms to the outlined NYSDOT requirements for Section 703-02 Coarse Aggregates and Section 403, Hot Mix Asphalt. Our NYSDOT source number is 5-5R and our most recent test number is 06AR10.

Location: Niagara
Job Mix Formulas (JMF's): Type 3 Binder, 7 Top

SPEC 02743
PARAGRAPH 1.03.A.1
Job mix Formula
&
PARAGRAPH 1.03.A.2
CERTIFICATION

Top

Sincerely,

Nicholas Dolyk
Quality Control
Lafarge AC&A

CONSTRUCTION MATERIALS / NORTHERN DIVISION
PO Box 510 ~ 400 Hinman Road, Lockport, New York 14094
Office: (716) 439-1300 Fax: (716) 434-9447

DOT 282 M (6/95)

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

JOB MIX FORMULA

Type 7 Top Course

Facility No. 1D1D1, 1D118, 1D281, 10313 Formula No.

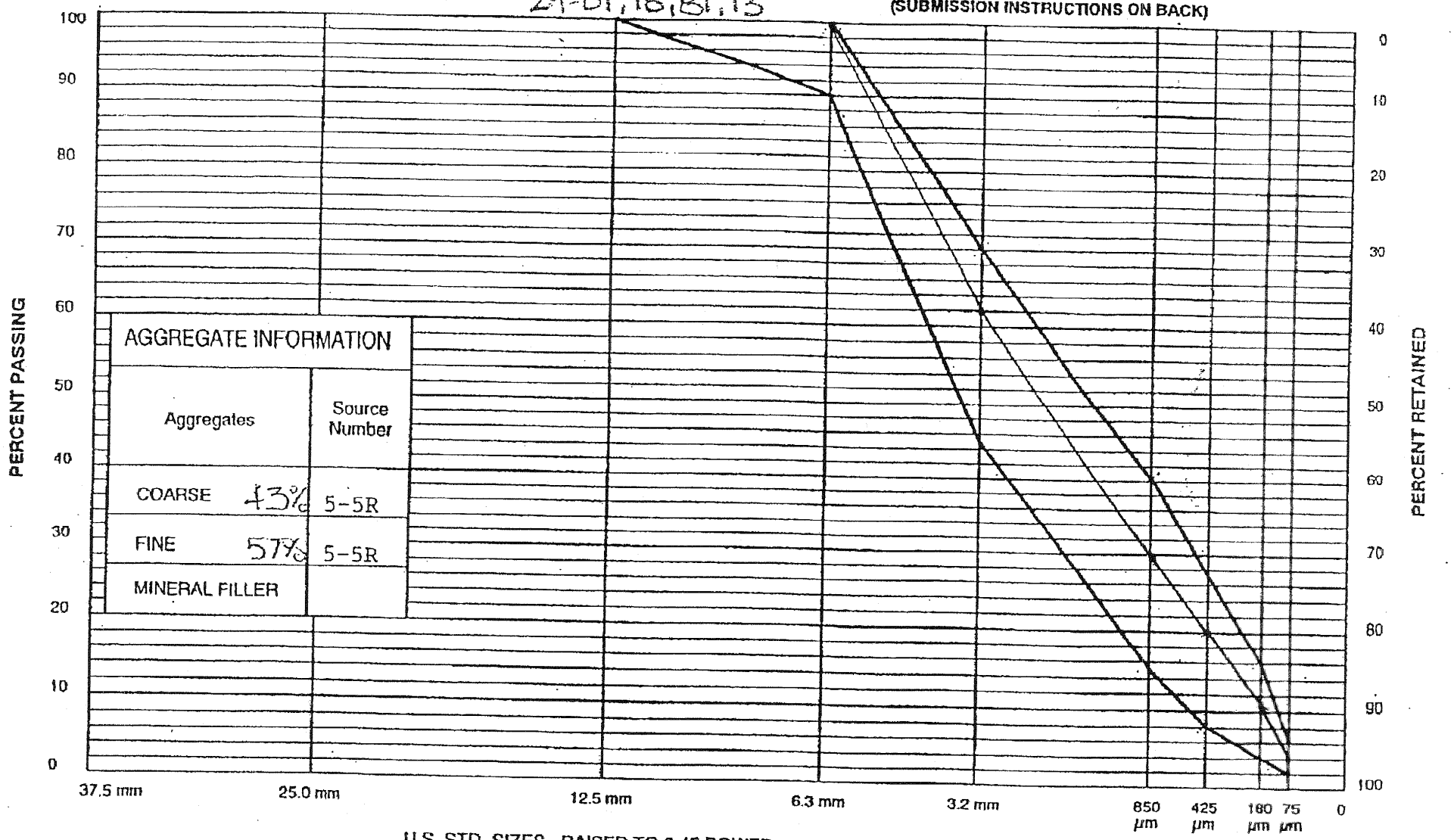
Plant LAFARGE Region 5

Plant Location 400 Hinman Rd., Lockport, NY 14094, NIAGARA

Submitted By Michael L Theimann Date February 19, 1

29-D1, 18, 81, 13

(SUBMISSION INSTRUCTIONS ON BACK)



U.S. STD. SIZES - RAISED TO 0.45 POWER

Sieve Size		37.5 mm	25.0 mm	12.5 mm	6.3 mm	3.2 mm	850 µm	425 µm	180 µm	75 µm	Asphalt Content (Percent)
% Passing	1. General Limits			100	90-100	45-70	15-40	8-27	4-16	2-6	6.0-8.0
	2. JMF Range			100	90-100	56-68	23-37	13-27	7-15	2-6	6.1-6.9
	3. Target Value			100	100	62	30	20	11	4	6.5

Asphalt Grade	
AC 20	6.22

Approved by Regional Director by Timothy Hayes ALL PLANTS ADDED Date 3/19/97

Remarks:

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 16D
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.A.2
PAGE NUMBER	02743-2
ITEM:	Letter of certification from LaFarge for Asphalt Concrete within limits of Asphalt Cover for the Asphalt surface course.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/11/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVal Date 7/11/07

LAFARGE

7/10/07

Yarussi Construction
5650 Simmons Ave.
Niagara Falls, NY 14304

Subj: OLIN Project

Dear Nick,

As per the request of the engineering firm for the above named project, we will produce a 7 Top mix with additional asphalt cement to achieve the requested 8.0% +/- .4% content.

Please feel free to contact me at 716-998-7212 with any questions and I would be happy to assist in any way possible. Thank you.

Regards,

Nicholas Dolyk
Quality Control Technician

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 30
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.C.1
PAGE NUMBER	02743-2
ITEM:	LaFarge verification testing results for the asphalt type 3 binder for asphalt placed on 7/13, 7/16, 7/17, 7/18 and 7/19/07.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	7/23/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVeck Date 7/23/07

BR 328 (3/99) di

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/13/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. _____ Sublot _____
JMF Number 17-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.573	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2566.5	2552.0		
D	1350.1	1347.7		
E	2920.4	2906.3		
A+D-E	996.2	993.4		
Gmm	2.576	2.569		
Average Gmm	2.573			

Quality Control By: (signature) Date:
Rob Knerr 8/17/1999

Quality Assurance By: (signature) Date:
Alex K. 8/17/1999

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3a's	2.706	0
No 2's	2.706	24
No 1's	2.706	14
H.F.1's	2.559	0
1a's	2.706	14
H.F.1a's	2.559	0
1b's	2.723	48
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.714
% Asphalt	5.1
VMA	#DIV/0!
VFA	#DIV/0!

BR 328 (3/99) cl

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/13/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. _____ Sublot _____
JMF Number 17-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.564	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2555.2	2556.8		
D	1350.1	1347.7		
E	2910.2	2905.6		
A+D-E	995.1	998.9		
Gmm	2.568	2.560		
Average Gmm	2.564			

Quality Control By: (signature) Date:
Rob Knerr 7/13/2007

Quality Assurance By: (signature) Date:
Alex K. 7/13/2007

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3a's	2.706	0
No 2's	2.706	24
No 1's	2.706	14
H.F.1's	2.559	0
1a's	2.706	14
H.F.1a's	2.559	0
1b's	2.723	48
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.714
% Asphalt	5.1
VMA	#DIV/0!
VFA	#DIV/0!

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	5.12% AC
1"	64.0	3.3	96.7	
3/4"	0.0	0.0	96.7	
1/2"	310.0	16.1	80.6	Test 1
3/8"	0.0	0.0	80.6	
1/4"	362.0	18.8	61.8	
#4	0.0	0.0	61.8	
1/8"	371.0	19.2	42.6	
#8	0.0	0.0	42.6	
#10	0.0	0.0	42.6	
#16	0.0	0.0	42.6	
#20	580.0	30.1	12.5	
#30	0.0	0.0	12.5	
#40	55.0	2.9	9.6	
#50	0.0	0.0	9.6	
#80	42.0	2.2	7.5	
#100	0.0	0.0	7.5	
#200	99.0	5.1	2.3	
Pan	45.0	2.3		
Total	1928.0			

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	4.98 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	290.0	18.3	81.7	Test 2
3/8"	0.0	0.0	81.7	
1/4"	334.0	21.0	60.7	
#4	0.0	0.0	60.7	
1/8"	324.0	20.4	40.3	
#8	0.0	0.0	40.3	
#10	0.0	0.0	40.3	
#16	0.0	0.0	40.3	
#20	362.0	22.8	17.5	
#30	0.0	0.0	17.5	
#40	75.0	4.7	12.7	
#50	0.0	0.0	12.7	
#80	88.0	5.5	7.2	
#100	0.0	0.0	7.2	
#200	62.0	3.9	3.3	
Pan	52.0	3.3		
Total	1587.0			

Producer Lafarge
Location Niagara
Facility No. 10101
Date: 7/16/2004

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. 1 Sublot A
JMF Number ~~464-16~~ 17-66

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams: In Air	In Water	S.S.D.	Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.564	#DIV/0!
QA Avg.							

Yarussi Construction
first test
olin job

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2568.8	2560.0		
D	1350.1	1347.7		
E	2917.5	2908.7		
A+D-E	1001.4	999.0		
Gmm	2.565	2.563		
Average Gmm	2.564			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No. 3a	2.701	0
No 2	2.701	23
No 1	2.701	22
No A	2.701	16
Dry Screen	2.701	34
sand2	2.701	0
3's	2.500	0
filler	2.500	0
dust	2.500	0
RAP	2.500	5

Gsb	2.681
% Asphalt	4.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date: 7/16/2007
Jeffrey Jezioro

Quality Assurance By: (signature) Date: 7/16/2007
NYSDOT

Producer Lafarge
Location Niagara
Facility No. 10101
Date: 7/16/2004

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. 1 Sublot A
JMF Number ~~461-18~~ 17-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.591	#DIV/0!
QA Avg.							

Yarussi Construction
second test
olin job

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2512.4	2520.4		
D	1350.1	1347.7		
E	2895.4	2892.4		
A+D-E	967.1	975.7		
Gmm	2.598	2.583		
Average Gmm	2.591			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No. 3s	2.701	0
No 2	2.701	23
No 1	2.701	22
No A	2.701	16
Dry Screen	2.701	34
sand2	2.701	0
D's	2.500	0
filler	2.500	0
dust	2.500	0
RAP	2.500	5

Gsb	2.691
% Asphalt	4.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature)	Date:
Jeffrey Jezioro	7/16/2007
Quality Assurance By: (signature)	Date:
NYSDOT	7/16/2007

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	5.05 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	310.0	18.9	81.1	
3/8"	0.0	0.0	81.1	
1/4"	342.0	20.9	60.2	
#4	0.0	0.0	60.2	
1/8"	285.0	17.4	42.9	
#8	0.0	0.0	42.9	
#10	0.0	0.0	42.9	
#16	0.0	0.0	42.9	
#20	415.0	25.3	17.6	
#30	0.0	0.0	17.6	
#40	92.0	5.6	12.0	
#50	0.0	0.0	12.0	
#80	66.0	4.0	7.9	
#100	0.0	0.0	7.9	
#200	73.0	4.5	3.5	
Pan	57.0	3.5		
Total	1640.0			

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	5.06 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	290.0	18.9	81.1	
3/8"	0.0	0.0	81.1	
1/4"	299.0	19.5	61.5	
#4	0.0	0.0	61.5	
1/8"	260.0	17.0	44.5	
#8	0.0	0.0	44.5	
#10	0.0	0.0	44.5	
#16	0.0	0.0	44.5	
#20	388.0	25.3	19.2	
#30	0.0	0.0	19.2	
#40	115.0	7.5	11.7	
#50	0.0	0.0	11.7	
#80	72.0	4.7	7.0	
#100	0.0	0.0	7.0	
#200	63.0	4.1	2.9	
Pan	44.0	2.9		
Total	1531.0			

Producer Lafarge
Location Niagara
Facility No. 10101
Date: 7/17/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. 1 Sublot A
JMF Number 461-18
07-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties
Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.587	#DIV/0!
QA Avg.							

Yarussi Construction
first test
olin job

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2535.1	2542.8		
D	1350.1	1347.7		
E	2904.5	2908.1		
A+D-E	980.7	982.4		
Gmm	2.585	2.588		
Average Gmm	2.587			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No. 3a	2.701	0
No 2	2.701	23
No 1	2.701	22
No A	2.701	16
Dry Screen	2.701	34
sand2	2.701	0
3's	2.500	0
filler	2.500	0
dust	2.500	0
RAP	2.500	5

Gsb	2.691
% Asphalt	4.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date: 7/17/2007
Jeffrey Jezioro

Quality Assurance By: (signature) Date: 7/17/2007
NYSDOT

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	4.92 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	255.0	19.0	81.0	
3/8"	0.0	0.0	81.0	
1/4"	270.0	20.2	60.8	
#4	0.0	0.0	60.8	
1/8"	226.0	16.9	43.9	
#8	0.0	0.0	43.9	
#10	0.0	0.0	43.9	
#16	0.0	0.0	43.9	
#20	340.0	25.4	18.5	
#30	0.0	0.0	18.5	
#40	92.0	6.9	11.6	
#50	0.0	0.0	11.6	
#80	61.0	4.6	7.1	
#100	0.0	0.0	7.1	
#200	55.0	4.1	3.0	
Pan	39.6	3.0		
Total	1338.6			

BR 328 (3/99) di

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/18/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. _____ Sublot _____
JMF Number 17-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.581	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2555.0	2559.7		
D	1350.1	1347.7		
E	2915.4	2915.4		
A+D-E	989.7	992.0		
Gmm	2.582	2.580		
Average Gmm	2.581			

Quality Control By: (signature) Date: 8/17/1999
Rob Knerr

Quality Assurance By: (signature) Date: 8/17/1999
Alex K.

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3a's	2.706	0
No 2's	2.706	24
No 1's	2.706	14
H.F.1's	2.559	0
1a's	2.706	14
H.F.1a's	2.559	0
1b's	2.723	48
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.714
% Asphalt	4.8
VMA	#DIV/0!
VFA	#DIV/0!

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	4.82 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	267.0	19.6	80.4	
3/8"	0.0	0.0	80.4	
1/4"	288.0	21.2	59.2	
#4	0.0	0.0	59.2	
1/8"	255.0	18.8	40.4	
#8	0.0	0.0	40.4	
#10	0.0	0.0	40.4	
#16	0.0	0.0	40.4	
#20	279.0	20.5	19.9	
#30	0.0	0.0	19.9	
#40	73.0	5.4	14.6	
#50	0.0	0.0	14.6	
#80	78.0	5.7	8.8	
#100	0.0	0.0	8.8	
#200	68.0	5.0	3.8	
Pan	52.0	3.8		
Total	1360.0			

BR 328 (3/99) cit

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/19/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type 3 Binder
Lot No. _____ Sublot _____
JMF Number 17-18

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				0.0	#DIV/0!		
QC Avg.					#DIV/0!	2.578	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	2564.9	2516.7		
D	1350.1	1347.7		
E	2918.7	2889.7		
A+D-E	996.3	974.7		
Gmm	2.574	2.582		
Average Gmm	2.578			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3a's	2.706	0
No 2's	2.706	24
No 1's	2.706	14
H.F.1's	2.559	0
1a's	2.706	14
H.F.1a's	2.559	0
1b's	2.723	48
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.714
% Asphalt	4.9
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature)	Date:
Rob Knerr	8/17/1999
Quality Assurance By: (signature)	Date:
Alex K.	8/17/1999

Sample: Gradation 3 Binder OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	4.90 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	256.0	20.0	80.0	
3/8"	0.0	0.0	80.0	
1/4"	264.0	20.7	59.3	
#4	0.0	0.0	59.3	
1/8"	240.0	18.8	40.5	
#8	0.0	0.0	40.5	
#10	0.0	0.0	40.5	
#16	0.0	0.0	40.5	
#20	233.0	18.2	22.3	
#30	0.0	0.0	22.3	
#40	83.0	6.5	15.8	
#50	0.0	0.0	15.8	
#80	85.0	6.7	9.2	
#100	0.0	0.0	9.2	
#200	76.0	5.9	3.2	
Pan	41.0	3.2		
Total	1278.0			

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 35
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.C.1
PAGE NUMBER	02743-2
ITEM:	LaFarge verification testing results for the asphalt type 7F Top, for asphalt placed on 7/23, 7/24, 7/25, 7/26, 7/27 and 7/30/07.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	8/1/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Dan LaCal Date 8/1/07

ASPHALT TF TOP

DATE	VENDOR	NUMBER OF DAYS	TONS DELIVERED	REQUIRED TEST	
7/23/2007	LaFarge	35	740.62	2	1 Test (2 and 3) 2 Test (4 and 5)
7/24/2007	LaFarge	22	480.25	1	2 and 3
7/25/2007	LaFarge	2	42.3	1	4 and 2
7/26/2007	LaFarge	2	33.11	1	5 and 3
7/27/2007	LaFarge	2	29.99	1	2 and 3
7/30/2007	LaFarge	2	29.09	1	2 and 3

Producer Lafarge
Location Niagara
Facility No. 10116
Date: 7/24/2007
23

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type _____
Lot No. _____ Sublot _____
JMF Number 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.450	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1599.7	1556.1		
D	1350.1	1347.7		
E	2261	2288.8		
A+D-E	628.8	635.0		
Gmm	2.449	2.451		
Average Gmm	2.450			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3's	2.708	0
No 2's	2.708	0
No 1's	2.708	0
H.F.1's	2.559	0
1's	2.708	45
H.F.1's	2.559	0
fib's	2.723	55
sand	2.665	0
Dry sd's	2.723	0
RAP	2.500	0

Gsb	2.715
% Asphalt	8.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature). Date:
Nick Doljk 7/24/2007

Quality Assurance By: (signature) Date:
7/24/2007

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.03 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	6.0	0.6	99.4	
#4	0.0	0.0	99.4	
1/8"	362.0	34.5	65.0	
#8	0.0	0.0	65.0	
#10	0.0	0.0	65.0	
#16	0.0	0.0	65.0	
#20	442.0	42.1	22.9	
#30	0.0	0.0	22.9	
#40	91.0	8.7	14.2	
#50	0.0	0.0	14.2	
#80	68.0	6.5	7.7	
#100	0.0	0.0	7.7	
#200	30.0	2.9	4.9	
Pan	51.0	4.9		
Total	1050.0			

Producer Lafarge

Location Niagara

Facility No. 10116

Date: 7/23/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

MATERIALS BUREAU

Mix Type _____

Lot No. _____ Sublot _____

JMF Number 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.429	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1513.6	1519.1		
D	1350.1	1347.7		
E	2240.9	2241.2		
A+D-E	622.8	625.6		
Gmm	2.430	2.428		
Average Gmm	2.429			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3s's	2.708	0
No 2's	2.708	0
No 1's	2.708	0
H.F.1's	2.569	0
1a's	2.706	45
H.F.1a's	2.569	0
10's	2.723	55
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.715
% Asphalt	6.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date:

Nick Dalyk 7/23/2007

Quality Assurance By: (signature) Date:

7/23/2007

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	7.98% AC
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	25.0	2.2	97.8	
#4	0.0	0.0	97.8	
1/8"	421.0	37.2	60.6	
#8	0.0	0.0	60.6	
#10	0.0	0.0	60.6	
#16	0.0	0.0	60.6	
#20	377.0	33.3	27.3	
#30	0.0	0.0	27.3	
#40	101.0	8.9	18.4	
#50	0.0	0.0	18.4	
#80	106.0	9.4	9.0	
#100	0.0	0.0	9.0	
#200	50.0	4.4	4.6	
Pan	52.0	4.6		
Total	1132.0			

BR 329 (9/96) ck

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/24/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type ____
Lot No. ____ Sublot ____
JMF Number 7F Top

Computation of Volumetric Mix Properties
Computation of Volumetric Mix Properties
Marshall

Specimen ID	Weight - Grams In Air	Weight - Grams In Water	Weight - Grams S.S.D.	Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.419	#DIV/0!
QA Avg.							

Sample	Quality Control 1A	Quality Control 1B	Quality Assurance 1A	Quality Assurance 1B
A	1525.5	1530.7		
D	1360.1	1347.7		
E	2245.1	2246.7		
A+D-E	630.5	632.7		
Gmm	2.420	2.419		
Average Gmm	2.419			

Combined Aggregate Bulk Specific Gravity

Aggregate	Gsb Bulk S.G.	% Blend
No.3a's	2.708	0
No 2's	2.708	0
No 1's	2.708	0
H.F.1's	2.559	0
1a's	2.708	45
H.F.1a's	2.669	0
1b's	2.723	55
sand	2.695	0
Dry scr's	2.723	0
RAP	2.600	0

Gsb	2.715
% Asphalt	8.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date:
Nick Dolyk 7/24/2007

Quality Assurance By: (signature) Date:
[signature] 7/24/2007

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.13 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	13.0	1.1	98.9	
#4	0.0	0.0	98.9	
1/8"	445.0	37.4	61.5	
#8	0.0	0.0	61.5	
#10	0.0	0.0	61.5	
#16	0.0	0.0	61.5	
#20	443.0	37.2	24.3	
#30	0.0	0.0	24.3	
#40	85.0	7.1	17.2	
#50	0.0	0.0	17.2	
#80	95.0	8.0	9.2	
#100	0.0	0.0	9.2	
#200	43.0	3.6	5.6	
Pan	67.0	5.6		
Total	1191.0			

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/25/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type
Lot No. Sublot
JMF Number 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume	Bulk Specific Gravity	Maximum Specific Gravity	Percent Air Voids
	In Air	In Water	S.S.D.	CC	Gmb	G_{mm}	
a	c	d	e	f	f	g	h
				e-d	c/f		100(g-f)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.416	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1515.6	1522.4		
D	1350.1	1347.7		
E	2240	2239.4		
A+D-E	625.7	630.7		
Gmm	2.422	2.414		
Average Gmm	2.418			

Combined Aggregate Bulk Specific Gravity		
Gsb		
Aggregate	Bulk S.G.	% Blend
No.8's	2.708	0
No 2's	2.706	0
No 1's	2.706	0
H.F.1's	2.569	0
1a's	2.706	45
H.F.1a's	2.558	0
1b's	2.723	55
sand	2.695	0
Dry ash's	2.723	0
RAP	2.500	0

Gsb	2.715
% Asphalt	5.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date: 7/25/2008
Nick Dolyk

Quality Assurance By: (signature) Date: 7/25/2008

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.11 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	15.0	1.3	98.7	
#4	0.0	0.0	98.7	
1/8"	411.0	36.0	62.7	
#8	0.0	0.0	62.7	
#10	0.0	0.0	62.7	
#16	0.0	0.0	62.7	
#20	412.0	36.1	26.6	
#30	0.0	0.0	26.6	
#40	92.0	8.1	18.6	
#50	0.0	0.0	18.6	
#80	100.0	8.8	9.8	
#100	0.0	0.0	9.8	
#200	51.0	4.5	5.3	
Pan	61.0	5.3		
Total	1142.0			

Producer: Lafarge
Location: Niagara
Facility No.: 10118
Date: 7/26/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type:
Lot No.: Sublot:
JMF Number: 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties
Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.424	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1510.0	1511.9		
D	1350.1	1347.7		
E	2237	2235.8		
A+D-E	623.1	623.8		
Gmm	2.423	2.424		
Average Gmm	2.424			

Combined Aggregate Bulk Specific Gravity		
Gsb		
Aggregate	Bulk S.G.	% Blend
#10 3/8's	2.708	0
#10 2's	2.708	0
#8s 1's	2.708	0
H.F.1's	2.559	0
1st's	2.708	45
H.F.1st's	2.559	0
fib's	2.723	55
sand	2.695	0
Dry ash's	2.723	0
RAP	2.600	0

Gsb	2.715
% Asphalt	6.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date: 7/26/2007
Nick Daiyk

Quality Assurance By: (signature) Date: 7/26/2007

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.01 AC%
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	10.0	0.9	99.1	
#4	0.0	0.0	99.1	
1/8"	402.0	36.6	62.5	
#8	0.0	0.0	62.5	
#10	0.0	0.0	62.5	
#16	0.0	0.0	62.5	
#20	385.0	35.1	27.4	
#30	0.0	0.0	27.4	
#40	95.0	8.7	18.8	
#50	0.0	0.0	18.8	
#80	99.0	9.0	9.7	
#100	0.0	0.0	9.7	
#200	51.0	4.6	5.1	
Pan	56.0	5.1		
Total	1098.0			

Producer: Lafarge
Location: Niagara
Facility No. 10118
Date: 7/27/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type
Lot No. Sublot
JMF Number 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.435	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1501.9	1532.6		
D	1350.1	1347.7		
E	2235	2251.8		
A+D-E	617.0	628.5		
Gmm	2.434	2.439		
Average Gmm	2.436			

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3's	2.706	0
No 2's	2.706	0
No 1's	2.705	0
R.F.1's	2.559	0
1's	2.708	45
R.F.1's	2.559	0
1's	2.723	55
sand	2.695	0
Dry ash	2.723	0
RAP	2.500	0

Gsb	2.715
% Asphalt	5.0
VMA	#DIV/0!
VFA	#DIV/0!

Quality Control By: (signature) Date: 7/27/2007
Nick Ostyk

Quality Assurance By: (signature) Date: 7/27/2007

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.12%AC
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	33.0	3.0	97.0	
#4	0.0	0.0	97.0	
1/8"	402.0	36.7	60.3	
#8	0.0	0.0	60.3	
#10	0.0	0.0	60.3	
#16	0.0	0.0	60.3	
#20	346.0	31.6	28.7	
#30	0.0	0.0	28.7	
#40	100.0	9.1	19.6	
#50	0.0	0.0	19.6	
#80	92.0	8.4	11.2	
#100	0.0	0.0	11.2	
#200	60.0	5.5	5.7	
Pan	63.0	5.7		
Total	1096.0			

Producer Lafarge
Location Niagara
Facility No. 10118
Date: 7/30/2007

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
MATERIALS BUREAU

Mix Type
Lot No. Sublot
JMF Number 7F Top

Computation of Volumetric Mix Properties

Computation of Volumetric Mix Properties

Marshall

Specimen ID	Weight - Grams			Volume CC	Bulk Specific Gravity Gmb	Maximum Specific Gravity G_{mm}	Percent Air Voids
	In Air	In Water	S.S.D.				
a	c	d	e	f	i	g	h
				e-d	c/f		100(g-i)/g
				0.0	#DIV/0!		
				0.0	#DIV/0!		
				#VALUE!	#VALUE!		
QC Avg.					#DIV/0!	2.437	#DIV/0!
QA Avg.							

	Quality Control		Quality Assurance	
Sample	1A	1B	1A	1B
A	1566.3	1558.0		
D	1317.3	1336.9		
E	2240.1	2259.6		
A+D-E	643.5	638.3		
Gmm	2.434	2.441		
Average Gmm	2.437			

Quality Control By: (signature) Date:
Nick Dolyk 7/30/2007

Quality Assurance By: (signature) Date:
7/30/2007

Combined Aggregate Bulk Specific Gravity Gsb		
Aggregate	Bulk S.G.	% Blend
No.3s's	2.706	0
No 2's	2.706	0
No 1's	2.705	0
H.F.1's	2.569	0
1s's	2.708	45
H.F.1s's	2.659	0
1b's	2.723	55
sand	2.695	0
Dry scr's	2.723	0
RAP	2.500	0

Gsb	2.715
% Asphalt	6.0
VMA	#DIV/0!
VFA	#DIV/0!

Sample: Gradation 7F Top OLIN

Sieve Size	Weight Retained	Percent Retained	Percent Passing	SPEC
10"	0.0	0.0	100.0	
8"	0.0	0.0	100.0	
6"	0.0	0.0	100.0	
4"	0.0	0.0	100.0	
3"	0.0	0.0	100.0	
2"	0.0	0.0	100.0	
1 1/2"	0.0	0.0	100.0	8.02% AC
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
1/2"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
1/4"	22.0	1.9	98.1	
#4	0.0	0.0	98.1	
1/8"	450.0	39.3	58.8	
#8	0.0	0.0	58.8	
#10	0.0	0.0	58.8	
#16	0.0	0.0	58.8	
#20	329.0	28.7	30.1	
#30	0.0	0.0	30.1	
#40	102.0	8.9	21.2	
#50	0.0	0.0	21.2	
#80	101.0	8.8	12.4	
#100	0.0	0.0	12.4	
#200	73.0	6.4	6.0	
Pan	69.0	6.0		
Total	1146.0			

APPENDIX J

FIELD QUALITY CONTROL TEST RESULTS

FOR

ASPHALT CONCRETE

FIELD QUALITY CONTROL TEST RESULTS

FOR

ASPHALT CONCRETE BINDER COURSE

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 36
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.C.2
PAGE NUMBER	02743-2
ITEM:	SJB Services field quality control testing results for the asphalt type 3 binder for asphalt placed on 7/13, 7/16, 7/17.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	8/2/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Dan LaClair Date 8/2/07

Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 1, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-5

SAMPLE INFORMATION:
Sample Nos. 07-859 through 07-865 represent the asphalt binder material placed on July 13, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-2041: Theoretical maximum Specific Gravity & Density of Bituminous Paving Mixtures

Sample Number	Theoretical Maximum Specific Gravity Gmm	Theoretical Maximum Density pcf
07-865	2.431	151.7

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-859	1	2.375	148.2	97.7 %
07-860	2	2.406	150.1	99.0 %
07-861	3	2.347	146.5	96.6 %
07-862	4	2.345	146.3	96.5 %
07-863	5	2.374	148.1	97.7 %
07-864	6	2.365	147.6	97.3 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Contract
Drilling
and
Testing

SJB SERVICES, INC.

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 1, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-6

SAMPLE INFORMATION:
Sample Nos. 07-866 through 07-872 represent the asphalt binder material placed on July 16, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-2041: Theoretical maximum Specific Gravity & Density of Bituminous Paving Mixtures

Sample Number	Theoretical Maximum Specific Gravity Gmm	Theoretical Maximum Density pcf
07-872	2.432	151.8

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-866	1	2.425	149.4	98.4 %
07-867	2	2.396	149.5	98.5 %
07-868	3	2.385	148.8	98.1 %
07-869	4	2.401	149.8	98.7 %
07-870	5	2.368	147.8	97.4 %
07-871	6	2.363	147.5	97.2 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Contract
Drilling
and
Testing

SJB SERVICES, INC.

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 1, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-7

SAMPLE INFORMATION:
Sample Nos. 07-873 through 07-875 represent the asphalt binder material placed on July 17, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-2041: Theoretical maximum Specific Gravity & Density of Bituminous Paving Mixtures

Sample Number	Theoretical Maximum Specific Gravity Gmm	Theoretical Maximum Density pcf
07-875	2.431	151.7

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-873	1	2.412	150.5	99.2 %
07-874	2	2.372	148.0	97.6 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-13-07

Project: OLIN
Client: SEVENSON
Contractor: YARUSSI
Project No.:
Report No.:

Day:	S M	T W	TH F X	SA		
Weather:	Sunny	Clear X	Overcast X	Rain	Snow	
Temperature:	to 32	32 to 50	50 to 70 X	70 to 85	85 +	
Wind:	Still	Moderate X	High			

OBSERVATIONS:

THIS SJB SERVICES, INC. SENIOR ENGINEERING TECHNICIAN WAS PRESENT AT THE ABOVE REFERENCED SITE TO PERFORM IN-PLACE DENSITY TESTS.

IN-PLACE DENSITY TESTS WERE TAKEN ON THE BINDER MATERIAL FROM LAFARGE NIAGARA. THE MATERIAL WAS COMPACTED USING A TROXLER GAUGE (PEGGED @ 147.1), 98% TO 95% OF THE MAXIMUM THER. DENSITY WAS REQUIRED FOR COMPACTION.

- A BARBER GREEN PAVER AND TWO DD 110 ROLLERS WERE USED FOR BREAKDOWN AND INTERMEDIAT ROLLERS.

- 6 CORES WERE TAKEN FOR THE SQUARE YARDS PLACED ON THIS DAY, THE CORES WERE TAKEN TO SJB LAB FOR TESTING.

Technician: D. MILLER

Time On Site: 8:00AM - 5:30 PM

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

543' ✗

ASPHALT IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OLIN
CLIENT: SEVENSON
CONTRACTOR: YARUSSI
TYPE OF MATERIAL: BINDER
METHOD OF TEST: NUCLEAR - DIRECT TRANS.
MAXIMUM DENSITY: 147.1 PEEK / 150.9 PLANT

DATE: 7-13-07
REPORT NO.:
PROJECT NO.:
GAUGE NO.:
STANDARD COUNT:
CALIBRATION FACTOR:

2½ SPEC. | 98%

LOCATION	WET DENSITY	TEMP. °F	THICKNESS (IN.)	% COMPACTION 1H4.2	REMARKS
NORTH SIDE OF P. LOT 1ST PASS	146.0	287°	3½	99.3	
NORTH SIDE OF P. LOT 3RD PASS	146.6	346°	3"	99.7	
NORTH SIDE OF P. LOT 5TH PASS	145.8	291°	3¼"	99.2	
NORTH SIDE OF P. LOT 7TH PASS	147.4	298°	4"	100.2	
NORTH SIDE OF P. LOT 9TH PASS	146.7	302°	3¾"	99.7	

REMARKS:

TECHNICIAN: D. MILLER

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-16-07

Project: OHN
Client: SEVERSON
Contractor: YARUSSI PAVING
Project No.:
Report No.:

Day:	S	M ✓	T	W	TH	F	SA
Weather:	Sunny		Clear		Overcast ✓	Rain ✓	Snow
Temperature:	to 32		32 to 50		50 to 70 ✓	70 to 85 ✓	85 +
Wind:	Still		Moderate ✓		High		

OBSERVATIONS:

THIS SJB SERVICES SENIOR ENGINEERING TECHNICIAN WAS PRESENT ON SITE TO PERFORM IN PLACE DENSITY TESTS ON BINDER MATERIAL. TESTS WERE TAKEN AT RANDOM LOCATIONS. REFER TO THE ATTACHED FIELD REPORT. (6) 6" CORES WERE TAKEN FROM TODAYS PRODUCTION ALSO AT RANDOM LOCATIONS. THE CORES WERE THEN RETURNED TO SJB SERVICES LAB FOR FURTHER TESTING.

Technician: Ronald S Lynch
Time On Site: 7:00-3:30

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

ASPHALT IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OLin
CLIENT: Severson
CONTRACTOR: Yarussi
TYPE OF MATERIAL: Binder Type 3
METHOD OF TEST: Backscatter
MAXIMUM DENSITY: 151.0

DATE: 7-16-07
REPORT NO.:
PROJECT NO.:
GAUGE NO.: 15961
STANDARD COUNT: —
CALIBRATION FACTOR: —

LOCATION	WET DENSITY	TEMP. °F	THICKNESS (IN.)	% COMPACTION	REMARKS
P. Lot South ½					
1ST Pass "	148.7	315	3 1/8	98.2	
2ND "	147.1	293	3"	97.4	
4TH "	146.3	305	3 1/4"	96.8	
6TH "	146.8	321	3 3/8"	97.2	
8TH "	145.6	300	3"	96.4	
9TH "	145.9	297	3"	96.6	

REMARKS:

TECHNICIAN: Ron Lynch

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Drilling and Testing

5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-17-07

Project: OLIN

Client: SEVERSON

Contractor: YARUSSI PAVING

Project No.:

Report No.:

Day:	S	M	T	W	TH	F	SA
			X				

Weather:	Sunny	Clear	Overcast	Rain	Snow
	X				

Temperature:	to 32	32 to 50	50 to 70	70 to 85	85 +
			X		

Wind:	Still	Moderate	High
		X	

OBSERVATIONS:

THIS SJB SERVICES SENIOR ENGINEERING TECHNICIAN WAS PRESENT ON SITE TO PERFORM IN PLACE DENSITY TESTS ON BINDER MATERIAL. TESTS WERE TAKEN AT RANDOM LOCATIONS. REFER TO THE ATTACHED FIELD REPORT. (2) 6" CORES WERE TAKEN FROM TODAYS PRODUCTION ALSO AT RANDOM LOCATIONS. THE CORES WERE THEN RETURNED TO SJB SERVICES LAB FOR FURTHER TESTING.

Technician: Ronald S Lynch

Time On Site: 7:00 - 12:00pm.

Respectfully Submitted,
SJB SERVICES, INC.

Albany, NY (518) 899-7491
Cortland, NY (607) 758-7182
Rochester, NY (585) 359-2730

SJB SERVICES, INC.
Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

ASPHALT IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OHN
CLIENT: SEVERSON
CONTRACTOR: YARUSI
TYPE OF MATERIAL: BINDER Type 3
METHOD OF TEST: BACKSCATTER
MAXIMUM DENSITY: 1510

DATE: 7-17-07
REPORT NO.:
PROJECT NO.:
GAUGE NO.: 15961
STANDARD COUNT: —
CALIBRATION FACTOR: —

LOCATION EAST EDGE	WET DENSITY	TEMP. °F	THICKNESS (IN.)	% COMPACTION	REMARKS
1ST PASS	146.1	305	3"	96.7	
2ND PASS NORTH	148.2	292	3"	98.1	
2ND PASS SOUTH	145.3	300°	3 1/8	96.2	
3RD PASS	146.3	280°	3"	96.9	
4TH PASS	145.8	312°	3"	96.5	

REMARKS:

TECHNICIAN: Ronald S Lypak

Respectfully Submitted,
SJB SERVICES, INC.

Albany, NY (518) 899-7491
Cortland, NY (607) 758-7182
Rochester, NY (585) 359-2730

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 36B
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.C.2
PAGE NUMBER	02743-2
ITEM:	SJB Services laboratory quality control testing results for the asphalt type 3 binder (Marshall test) for asphalt placed on 7/13, 7/16, 7/17.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	8/13/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don Lalish Date 8/13/07

Contract Drilling and Testing

SJB SERVICES, INC.

■ **CORPORATE/ BUFFALO OFFICE**
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

☐ **ALBANY OFFICE**
PO Box 2199
Ballston Spa, NY 12020

5 Knabner Road
Mechanicville, NY 12118
Phone: (518) 899-7491
Fax: (518) 899-7496

☐ **CORTLAND OFFICE**
60 Miller Street
Cortland NY 13045
Phone: (607) 758-7182
Fax: (607) 758-7188

☐ **ROCHESTER OFFICE**
535 Summit Point Drive
Henrietta, NY 14467
Phone: (585) 359-2730
Fax: (585) 359-9668

August 13, 2007

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, New York 14305
Phone: 284-0431 / Fax: 284-7645

Attention: *Mr. Don Laverdi*

Reference: *Olin Corp.*

Dear Don,

As directed, SJB SERVICES, INC. performed a Marshall test in accordance with ASTM D1559 on both the binder and topping mix placed at the Olin site.

The in-place density and pavement compaction testing performed in the field was then recalculated using the maximum density determined in the Marshall 35 Test.

The results of the laboratory tests are attached.

If you have any further questions, please contact our office.

Sincerely,

SJB SERVICES, INC.

Stanley J. Blas
President

vah / Enc.

Contract Drilling and Testing

SJB SERVICES, INC.

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 13, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-10

SAMPLE INFORMATION:
Sample Nos. 07-859 through 07-863 represent the asphalt binder material placed on July 13, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-1559: Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus using 35 blows per side
ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Lab Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf
07-925	B-1	2.368	147.8
07-926	B-2	2.339	146.0
07-927	B-3	2.335	145.7
		Average	146.5

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-859	1	2.375	148.2	101.2 %
07-860	2	2.406	150.1	102.5 %
07-861	3	2.347	146.5	100.0 %
07-862	4	2.345	146.3	99.9 %
07-863	5	2.374	148.1	101.1 %
07-864	6	2.365	147.6	100.8 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Contract
Drilling
and
Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 13, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-11

SAMPLE INFORMATION:
Sample Nos. 07-866 through 07-871 represent the asphalt binder material placed on July 16, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-1559: Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus using 35 blows per side
ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Lab Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf
07-925	B-1	2.368	147.8
07-926	B-2	2.339	146.0
07-927	B-3	2.335	145.7
		Average	146.5

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-866	1	2.425	149.4	102.0 %
07-867	2	2.396	149.5	102.0 %
07-868	3	2.385	148.8	101.6 %
07-869	4	2.401	149.8	102.3 %
07-870	5	2.368	147.8	100.9 %
07-871	6	2.363	147.5	100.7 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Contract
Drilling
and
Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 13, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-12

SAMPLE INFORMATION:
Sample Nos. 07-873 through 07-874 represent the asphalt binder material placed on July 17, 2007. Material is described as Type 3 Asphalt Binder material from the LaFarge N.A. Niagara Falls plant.

ASTM D-1559: Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus using 35 blows per side
ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Lab Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf
07-925	B-1	2.368	147.8
07-926	B-2	2.339	146.0
07-927	B-3	2.335	145.7
		Average	146.5

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-873	1	2.412	150.5	102.7 %
07-874	2	2.372	148.0	101.0 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

FIELD QUALITY CONTROL TEST RESULTS

FOR

ASPHALT CONCRETE SURFACE COURSE

SJB SERVICES, INC.
Drilling and Testing

5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-23-07

Project: OHN
Client: SEVERSON
Contractor: YARUSI PAVING
Project No.: BT-07-097
Report No.: 10

Day:	S	M	T	W	TH	F	SA
Weather:	Sunny		Clear		Overcast ✓	Rain	Snow
Temperature:	to 32		32 to 50		50 to 70 ✓	70 to 85 ✓	85 +
Wind:	Still		Moderate ✓		High		

OBSERVATIONS:

THIS SJB SERVICES SENIOR ENGINEERING TECHNICIAN WAS PRESENT ON SITE TO PERFORM IN PLACE DENSITY TESTS ON TOPPING MATERIAL. TESTS WERE TAKEN AT RANDOM LOCATIONS. REFER TO THE ATTACHED FIELD REPORT. (8)- 6" CORES WERE TAKEN FROM TODAYS PRODUCTION ALSO AT RANDOM LOCATIONS. THE CORES WERE THEN RETURNED TO SJB SERVICES LAB FOR FURTHER TESTING.

REFER TO THE ATTACHED REPORT FOR RESULTS OF TODAYS TESTING

Technician: Ronald J Lynch.

Time On Site: 7:00 - 4:30 pm

Respectfully Submitted,
SJB SERVICES, INC.

Albany, NY (518) 899-7491
Cortland, NY (607) 758-7182
Rochester, NY (585) 359-2730

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

ASPHALT IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OLIN
CLIENT: SEVENSON
CONTRACTOR: YARUSSI
TYPE OF MATERIAL: TYPE 7F ASPHALT TOP
METHOD OF TEST: NUCLEAR - DIRECT TRANSMISSION- BACKSCATTER
MAXIMUM DENSITY: 138.1 PCF (AS CALCULATED FROM LTR-13)

DATE: 07/23/07
REPORT NO.:
PROJECT NO.: BT-07-097
GAUGE NO.: 15961
STANDARD COUNT:
CALIBRATION FACTOR:

LOCATION	WET DENSITY	TEMP. °F	THICKNESS (IN.)	% COMPACTION	REMARKS
START : NORTH END					
1ST PASS	150.3	295	1.25	108.8	
2ND PASS	149.5	281	1.25	108.3	
3RD PASS	147.8	300	1.38	107.0	
4TH PASS	146.7	298	1.25	106.2	
5TH PASS	148.1	286	1.38	107.2	
6TH PASS	148.5	307	1.50	107.5	
7TH PASS	147.3	297	1.25	106.7	
8TH PASS	147.0	291	1.38	106.4	

REMARKS:
AS PER MACTEC, FIELD RESULTS ARE
COMPARED TO THE LAB RESULTS OF
ASTM D-1559 OF LTR-13
TECHNICIAN: RON LYNCH

Respectfully Submitted,
SJB SERVICES, INC.

SJB SERVICES, INC.
Drilling and Testing

5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

INSPECTOR'S DAILY REPORT

Date: 7-24-07

Project: Olin
Client: Severson
Contractor: Yarusi Paving
Project No.: BT-07-097
Report No.: 11

Day:	S	M	T X	W	TH	F	SA

Weather:	Sunny	Clear	Overcast X	Rain	Snow
Temperature:	to 32	32 to 50	50 to 70	70 to 85 X	85 +
Wind:	Still	Moderate Y	High		

OBSERVATIONS:

THIS SJB SERVICES SENIOR ENGINEERING TECHNICIAN WAS PRESENT ON SITE TO PERFORM IN PLACE DENSITY TESTS ON TOPPING MATERIAL. TESTS WERE TAKEN AT RANDOM LOCATIONS. REFER TO THE ATTACHED FIELD REPORT.

(6) 6" CORES WERE TAKEN FROM TODAYS PRODUCTION ALSO AT RANDOM LOCATIONS. THE CORES WERE THEN RETURNED TO SJB SERVICES LAB FOR FURTHER TESTING.

REFER TO THE ATTACHED REPORT FOR RESULTS OF TODAYS TESTING.

Technician: Ronald S Lynch

Time On Site: 7:00-4:00

Respectfully Submitted,
SJB SERVICES, INC.

Albany, NY (518) 899-7491
Cortland, NY (607) 758-7182
Rochester, NY (585) 359-2730

SJB SERVICES, INC.
Contract Drilling and Testing

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

ASPHALT IN-PLACE DENSITY TEST REPORT
(NUCLEAR METHOD)

PROJECT: OLIN
CLIENT: SEVENSON
CONTRACTOR: YARUSSI
TYPE OF MATERIAL: TYPE 7F ASPHALT TOP
METHOD OF TEST: NUCLEAR - DIRECT TRANSMISSION- BACKSCATTER
MAXIMUM DENSITY: 138.1 PCF (AS CALCULATED FROM LTR-13)

DATE: 07/24/07
REPORT NO.:
PROJECT NO.: BT-07-097
GAUGE NO.: 15961
STANDARD COUNT:
CALIBRATION FACTOR:

LOCATION	WET DENSITY	TEMP. ° F	THICKNESS (IN.)	% COMPACTION	REMARKS
START : SOUTH HALF					
1ST PASS	146.5	295	1.38	106.1	
2ND PASS	145.9	287	1.25	105.6	
3RD PASS	147.6	305	1.31	106.9	
4TH PASS	146.9	297	1.38	106.4	
7TH PASS	147.4	309	1.25	106.7	
8TH PASS	146.0	286	1.38	105.7	
10TH PASS	145.3	300	1.38	105.2	

REMARKS:
AS PER MACTEC, FIELD RESULTS ARE
COMPARED TO THE LAB RESULTS OF
ASTM D-1559 OF LTR-14
TECHNICIAN: RON LYNCH

Respectfully Submitted,
SJB SERVICES, INC.

SUBMITTAL FORM

Project: **OLIN, IWS OU3 (Packard Road Site)**
Niagara Falls, New York

Contractor: **Sevenson Environmental Services**
2749 Lockport Road
Niagara Falls, New York 14305

Engineer: **MACTEC Engineering and Consulting, Inc.**
3200 Town Point Drive NW, Suite 100
Kennesaw, Georgia 30144
Attention: Stephen Lind

SUBMITTAL NUMBER:	# 37B
SECTION:	02743 Asphalt Concrete Pavement, paragraph 1.03.C.2
PAGE NUMBER	02743-2
ITEM:	SJB Services laboratory quality control testing results for the asphalt 7F Top (Marshall test) for asphalt placed on 7/23 and 7/24.
SUBMITTAL TYPE:	***A - Test Results and/or Certificates*** B - Manufacturer's Literature or Data C - Shop Drawings D - Operation and Maintenance Instructions E - Samples F - Alternative Product Supporting Data G - Administrative such as schedules, etc.
DEFICIENCIES:	None
SUBMITTAL DATE:	8/13/07
RESPONSE REQUIRED:	ASAP

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature Don LaVoie Date 8/13/07

Contract Drilling and Testing

SJB SERVICES, INC.

■ **CORPORATE/ BUFFALO OFFICE**
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

☐ **ALBANY OFFICE**
PO Box 2199
Ballston Spa, NY 12020

5 Knabner Road
Mechanicville, NY 12118
Phone: (518) 899-7491
Fax: (518) 899-7496

☐ **CORTLAND OFFICE**
60 Miller Street
Cortland NY 13045
Phone: (607) 758-7182
Fax: (607) 758-7188

☐ **ROCHESTER OFFICE**
535 Summit Point Drive
Henrietta, NY 14467
Phone: (585) 359-2730
Fax: (585) 359-9668

August 13, 2007

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, New York 14305
Phone: 284-0431 / Fax: 284-7645

Attention: *Mr. Don Laverdi*

Reference: *Olin Corp.*

Dear Don,

As directed, SJB SERVICES, INC. performed a Marshall test in accordance with ASTM D1559 on both the binder and topping mix placed at the Olin site.

The in-place density and pavement compaction testing performed in the field was then recalculated using the maximum density determined in the Marshall 35 Test.

The results of the laboratory tests are attached.

If you have any further questions, please contact our office.

Sincerely,

SJB SERVICES, INC.

Stanley J. Blas
President

vah / Enc.

Contract Drilling and Testing

SJB SERVICES, INC.

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 13, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-13

SAMPLE INFORMATION:
Sample Nos. 07-879 through 07-886 represent the asphalt top material placed on July 23, 2007. Material is described as Type 7 Asphalt Top material from the LaFarge N.A. Niagara Falls plant.

ASTM D-1559: Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus using 35 blows per side

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Lab Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf
07-928	T-1	2.205	137.6
07-929	T-2	2.211	138.0
07-930	T-3	2.221	138.6
		Average	138.1

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-879	1	2.330	145.4	105.2 %
07-880	2	2.310	144.1	104.3 %
07-881	3	2.330	145.4	105.2 %
07-882	4	2.347	146.4	106.0 %
07-883	5	2.320	144.8	104.8 %
07-884	6	2.277	142.1	102.8 %
07-885	7	2.332	145.5	105.3 %
07-886	8	2.433	143.1	103.6 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

Contract
Drilling
and
Testing

SJB SERVICES, INC.

BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

Laboratory Test Report

PROJECT: Olin
CLIENT: Sevenson
DATE: August 13, 2007

PROJECT NO.: BT-07-097
REPORT NO.: LTR-14

SAMPLE INFORMATION:
Sample Nos. 07-888 through 07-894 represent the asphalt top material placed on July 24, 2007. Material is described as Type 7 Asphalt Top material from the LaFarge N.A. Niagara Falls plant.

ASTM D-1559: Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus using 35 blows per side

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Lab Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf
07-928	T-1	2.205	137.6
07-929	T-2	2.211	138.0
07-930	T-3	2.221	138.6
		Average	138.1

ASTM D-2726: Bulk Specific Gravity & Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens

Sample Number	Core Number	Bulk Specific Gravity Gmb	Bulk Density pcf	Percent Compaction
07-888	9	2.307	144.0	104.2 %
07-889	10	2.328	145.3	105.2 %
07-890	11	2.307	144.0	104.2 %
07-891	12	2.304	143.8	104.1 %
07-892	13	2.290	142.9	103.4 %
07-893	14	2.435	145.9	105.6 %

SJB Services, Inc.

Paul Gregorczyk
Laboratory Manager

APPENDIX K

FIELD CHANGE APPROVALS

REQUEST FOR INFORMATION NO. 1

Project Name: Olin IWS OU3 (Packard Road Site), Asphalt Cover Construction

Engineer: MACTEC Engineering and Consulting, Inc.

Engineer's Project Number: 6100-07-0005

Contractor: Sevenson Environmental Services

R.F.I. Date: May 16, 2007

Reference: Specifications, dated March 9, 2007

Subject: Questions regarding specifications for moisture-density testing of Aggregate Base Course material (specified in Section 02722) and Soil Fill (specified in Section 02310). Refer to attached e-mail from Mike Wass dated May 16, 2007.

MACTEC Response:

1. Aggregate Base Course:
   The consistency of the Aggregate Base Course should be verified with at least two moisture-density tests. We request the first test precede initial material placement and the second test occur midway in the material placement. In accordance with the above, the frequency of Moisture-Density testing of Aggregate Base Course material specified in paragraph 3.01.A.1 of Section 02722 is revised to read as follows:

   > "Moisture-Density relationship (using ASTM D 1557): Minimum of one test per lift for every 2,000 tons of aggregate delivered to the Site, and at every change in material."

2. Soil Fill:
   MACTEC will add a testing frequency for Soil Fill material. However, we will still require additional moisture-density testing if the compacted material is found to be inconsistent with the existing moisture-density relationships already determined for other soil samples. The frequency of Moisture-Density testing of Soil Fill material specified in paragraph 2.02.C.2 of Section 02310 is revised to read as follows:

   > "Moisture-Density Curve (ASTM D 698): Minimum of one test for every 1,000 cubic yards of loose soil, and at every change in material."

Response From: MACTEC Engineering and Consulting, Inc.

Signed By: Stephen A. Lind Date: 5/17/07

Checked By: [signature] Date: 5/17/07

Lind, Stephen

From: Wass, Mike [MWass@sevenson.com]
Sent: Wednesday, May 16, 2007 2:50 PM
To: Lind, Stephen; Wertz, Ted; Laverdi, Don
Subject: IWS RFI #1

STEVE

WHILE REVIEWING THE SPECIFICATIONS, PARTICULARLY THE PROCTOR REQUIREMENTS FOR THE IMPORTED 3" MINUS FILL, AND THE 2" R.O.C BASE, I FEEL THE PROJECT WOULD BE BETTER SERVED IF THE SPECIFICATIONS ARE MODIFIED. THIS MODIFICATION WOULD BE AT NO COST TO THE OWNER.

SPECIFICATION 02722, PARAGRAPH 3.01.A.1 CALLS FOR 1 PROCTOR PER 1,000 TONS IMPORTED 2" CRUSHER RUN. THIS IS A PROCESSED MATERIAL, AND THEREFORE THE FLUCTUATION OF THE PRODUCT WILL BE MINIMAL.

SPECIFICATION 02310, PARAGRAPH 2.02.C.2 CALLS FOR I PROCTOR AND I PER CHANGE OF THE 3" MINUS FILL MATERIAL. THIS IS A "BANK RUN MATERIAL" AND THE VISUAL CHANGES WILL BE DIFFICULT TO IDENTIFY BY THE ONSITE PERSONNEL. A PROCTOR SHOULD BE OBTAINED AT A DEDICATED FREQUENCY AND WILL ELIMINATE THE GUESSING.

I, (SEVENSON), PROPOSE OBTAINING 1 PROCTOR FOR THE 2" R.O.C., AND OBTAINING 1 PER 1,000 TONS,(600 C.Y.+/-), IMPORTED 3" MINUS FILL.

REQUEST FOR INFORMATION NO. 2

Project Name: Olin IWS OU3 (Packard Road Site), Asphalt Cover Construction

Engineer: MACTEC Engineering and Consulting, Inc.

Engineer's Project Number: 6100-07-0005

Contractor: Sevenson Environmental Services

R.F.I. Date: May 25, 2007

Reference: Specifications, dated March 9, 2007

Subject: Request to use 2" R.O.C. material for fill material under the aggregate base course instead of the soil fill (Sevenson's proposed 3" minus material) specified in Section 02310. Refer to attached e-mail from Mike Wass dated May 25, 2007.

MACTEC Response:
The 2" R.O.C. material (which was approved for the aggregate base course in MACTEC's review of Submittal # 11 dated May 25, 2007) is approved as a substitute for soil fill material to be placed under the aggregate base course, subject to the following:

1. Moisture-density testing of the 2" R.O.C. material used for the full depth of fill material and aggregate base course shall conform to the revised requirements stated in our response to RFI #1 (dated 5/17/07):

   "The consistency of the Aggregate Base Course should be verified with at least two moisture-density tests. We request the first test precede initial material placement and the second test occur midway in the material placement."

2. The full depth of 2" R.O.C. material shall be placed in lifts (layers) no greater than 12 inches (loose measure) and compaction shall conform to the specifications for compaction of aggregate base course material in subsection 3.04.G of Section 02722:

   "each layer shall be compacted to a density of at least 95 percent of the material's maximum dry density as determined by ASTM D 1557."

Response From: MACTEC Engineering and Consulting, Inc.

Signed By: Stephen A. Lind Date: 5/29/07

Checked By: [signature] Date: 5/29/07

Lind, Stephen

From: Wass, Mike [MWass@sevenson.com]

Sent: Friday, May 25, 2007 11:22 AM

To: Lind, Stephen; Elia, Alan Jr.; Laverdi, Don

Cc: Wertz, Ted

Subject: RFI#2 OU3, PACKARD RD. SITE

GENTLEMEN

SPECIFICATION 02310, PAR. 2.02.B, REQUIRES 3" MINUS SOIL TO BE UTILIZED AS A FILL, WHERE REQUIRED, WHICH WILL COMPRISE THE "SUB BASE" OF THE PROPOSED ASPHALT CAP.

IN LIEU OF THE REQUIRED SOIL, SEVENSON PROPOSES UTILIZING 2" R.O.C. THE PROPOSED MATERIAL IS 3" MINUS, AND BEING A PROCESSED MATERIAL, (vs BANK), IS HOMOGENEOUS. THIS WILL ALSO ELIMINATE THE POSSIBILITY OF OVERSIZED COBBLES IMPACTING THE SUB BASE.

ADDITIONAL RATIONALE ENFORCING THE SUBSTITUTION OF THE 3" MINUS SOIL BY THE 2" R.O.C ARE AS FOLLOWS:

- $0.40/TON COSTS SAVINGS;
- ALLEVIATE POTENTIAL WEATHER IMPACTS;
- OFF-SITE TRACKING OF IMPORTED SOILS;
- INCREASE THICKNESS, (LOADINGS), OF DESIGN BASE, (6" OF 2" R.O.C.);
- OVERALL, SUPERIOR END PRODUCT.

SHOULD THIS SUBSTITUTION BE APPROVED, SEVENSON WILL FOLLOW THE QA/QC PARAMETERS OUTLINED IN THE RESPONSE TO RFI #1:

- 1 PROCTOR PER 1,000 CY., (1500 TON), IMPORTED MATERIAL;
- 98% COMPACTION BY DRY WEIGHT.

Work Change Directive

No. 1

Date of Issuance: June 5, 2007 Effective Date: June 5, 2007

Project: IWS OU3 (Packard Road Site) Asphalt Cover Construction	Owner: Olin Corporation	Owner's Contract No.: ERRE 9823 REIW0002
Contractor: Sevenson Environmental Services, Inc.		Date of Contract:
Engineer: MACTEC Engineering and Consulting, P.C. In Association with: MACTEC Engineering and Consulting, Inc.		Engineer's Project No.: 6100-07-0005

You are directed to proceed promptly with the following change(s):

Item No.	Description
1	Riprap to be installed at the storm drain outlet headwall at Gill Creek shall conform to the gradation requirements for "Light Stone Filling" in Section 620 of the NYSDOT Standard Specifications. This is a change from the gradation specified in subsection 2.03.A of Specification Section 02374.
2	Eliminate the aggregate shoulder along the western edge of the asphalt cover. The aggregate shoulder indicated in Section B on Drawing CL-103 of the Design Drawings will not be required at this location.

Attachments (list documents supporting change): N/A

Purpose for Work Change Directive:

☒ Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

☐ Nonagreement on pricing of proposed change.

☒ Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

Estimated change in Contract Price and Contract Times:

Contract Price $ To be determined (increase/decrease) Contract Time No change days (increase/decrease)

If the change involves an increase, the estimated amounts are not to be exceeded without further authorization.

Recommended for Approval by Engineer:		Date 6/5/07
Authorized for Owner by:	Michael J. Bellotti	Date 6/28/07
Accepted for Contractor by:		Date 6/29/07

Work Change Directive

No. 2

Date of Issuance: June 28, 2007 Effective Date: June 28, 2007

Project: IWS OU3 (Packard Road Site) Asphalt Cover Construction	Owner: Olin Corporation	Owner's Contract No.: ERRE9823 - REIW0002
Contractor: Sevenson Environmental Services, Inc.		Date of Contract:
Engineer: MACTEC Engineering and Consulting, P.C. In Association with: MACTEC Engineering and Consulting, Inc.		Engineer's Project No.: 6100-07-0005

You are directed to proceed promptly with the following change(s):

Item No.	Description
1	The installation of warning signs on chain link fencing around OU3 (specified in Section 02821, subsections 2.07 and 3.04) is deleted from the project scope. The reason for eliminating the requirement for installation of the signs is to be consistent with the existing fencing around OU2 which does not have any warning signs.
2	Application of bituminous tack coat on top of aggregate base course prior to placement of asphalt concrete binder course (specified in Section 02743, paragraph 3.03.A) is deleted from the project scope. Bituminous tack coat will still be required at the other locations specified in paragraphs 3.03.B and C as applicable.

Attachments (list documents supporting change): N/A

Purpose for Work Change Directive:

☒ Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

☐ Nonagreement on pricing of proposed change.

☒ Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

Estimated change in Contract Price and Contract Times:

Contract Price $ To be determined (increase/decrease) Contract Time No change days (increase/decrease)

If the change involves an increase, the estimated amounts are not to be exceeded without further authorization.

Recommended for Approval by Engineer:	Date: 6/28/07
Authorized for Owner by: Michael J. Bellotti	Date: 6/28/07
Accepted for Contractor by: John D Scaff	Date: 6/29/07

Work Change Directive

No. 3

Date of Issuance: August 14, 2007 Effective Date: August 14, 2007

Project: IWS OU3 (Packard Road Site) Asphalt Cover Construction	Owner: Olin Corporation	Owner's Contract No.: ERRE9823 – REIW0002
Contractor: Sevenson Environmental Services, Inc.		Date of Contract:
Engineer: MACTEC Engineering and Consulting, P.C. In Association with: MACTEC Engineering and Consulting, Inc.		Engineer's Project No.: 6100-07-0005

You are directed to proceed promptly with the following change(s):

Item No.	Description
1	The required in-place density of the asphalt cover specified in subsection 3.04.J of Section 02743 is revised to read as follows: "Unless otherwise approved by the Engineer, the average in-place density of each asphalt concrete course placed within any lot shall be not less than 98 percent of the density obtained using the 35 blow Marshall method (ASTM D 1559)." The specification for 35 blow Marshall test method is based on the USEPA publication "Lining of Waste Containment and Other Impoundment Facilities" (EPA/600/2-88/052) in Table 4-38 on page 4-166.

Attachments (list documents supporting change): N/A

Purpose for Work Change Directive:

☒ Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

☐ Nonagreement on pricing of proposed change.

☒ Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

Estimated change in Contract Price and Contract Times:

Contract Price $ No change (increase/decrease) Contract Time No change days (increase/decrease)

If the change involves an increase, the estimated amounts are not to be exceeded without further authorization.

Recommended for Approval by Engineer:	Date 8/15/07
Authorized for Owner by: Michael J. Bellotti	Date 8/15/07
Accepted for Contractor by:	Date 8-15-07